SINGLE-STAGE EXPERIMENTAL EVALUATION OF TANDEM-AIRFOIL ROTOR AND STATOR BLADING FOR COMPRESSORS

PART II - DATA AND PERFORMANCE FOR STAGE A

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Prepared for
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA Lewis Research Center
Contract NAS3-11158

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
NASA CR-120804		

4. Title and Subtitle	5. Report Date
"SINGLE-STAGE EXPERIMENTAL EVALUATION OF TANDEM-AIRFOIL ROTOR AND STATOR BLADING FOR COMPRESSORS," PART II - DATA AND PERFORMANCE FOR STAGE A	July 1972
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
J. A. Brent	PWA FR-4719
	10. Work Unit No.

9. Performing Organization Name and Address	11. Contract or Grant No.
Pratt & Whitney Aircraft Division of United Aircraft Corporation Florida Research and Development Center West Palm Beach, Florida 33402	NAS3-11158
	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address	Contractor Report
National Aeronautics and Space Administration Washington, D. C. 20546	14. Sponsoring Agency Code

15. Supplementary Notes

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16. Abstract

Stage A, comprised of a conventional rotor and stator, was designed and tested to establish a performance baseline for comparison with the results of subsequent tests planned for two tandem-blade stages. The rotor had an inlet hub/tip ratio of 0.8 and a design tip velocity of 757 ft/sec. At design equivalent rotor speed, Rotor A achieved a maximum adiabatic efficiency of 85.1% at a pressure ratio of 1.29. The stage maximum adiabatic efficiency was 78.6% at a pressure ratio of 1.27.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
Tandem Blading Compressor	Unclassified - unlimited

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price*
Unclassified	Unclassified	120	~~$3.00~~ $8.00

* For sale by the National Technical Information Service, Springfield, Virginia 22151

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SUMMARY

A 0.8 hub/tip ratio single-stage axial flow compressor, having conventional blading, was designed and tested to establish baseline performance data for comparison with the results of subsequent tests planned for two dual-airfoil tandem blade stages. Design velocity diagrams and blade leading and trailing edge metal angles are identical for the conventional and tandem blading. The stage was designed with zero rotor prewhirl, constant rotor exit total pressure across the span, and axial discharge flow. Circular arc airfoil sections were used for both rotor and stator blading. The specific flow and rotor inlet Mach number were generally consistent with design practice for compressor middle stages; however, the blade loadings were appreciably higher.

At design equivalent rotor speed, the rotor achieved a maximum adiabatic efficiency of 85.1% at a pressure ratio of 1.29 compared with respective design values of 90.8% and 1.32. The stage maximum adiabatic efficiency was 78.6% at a pressure ratio of 1.27 compared with design values of 85.4% and 1.256. Examination of the blade element data indicated that the low performance resulted from insufficient rotor turning and high rotor losses from midspan to hub.

INTRODUCTION

Advanced aircraft turbojet propulsion systems will require lightweight, highly loaded axial flow compressors capable of achieving high efficiency over a wide range of operating conditions. Axial flow blower experience has indicated that tandem blading can be successfully employed to extend the efficient operating range of compressors. In 1955, H. E. Sheets (Reference 1) reported excellent efficiencies for a highly loaded axial flow blower comprised of a tandem-blade rotor. Favorable results were also reported by H. Linnemann (Reference 2) based on a series of axial flow blower tests involving both tandem-blade rotors and stators. The results for the tandem blading indicated a better efficiency at a higher pressure ratio than that achieved with equivalent conventional blading.

In principle, tandem blading offers improved performance over conventional blading by distributing the overall blade row aerodynamic loading between the airfoils in tandem. The front airfoil may also provide control of the inlet air angle to the rear airfoil at off-design conditions, which should reduce the overall total pressure loss and possibly delay wall stall.

The first objective of this program is to investigate the potential of tandem blading for extending the loading limit and stable operating range of a stage representative of a middle stage of an advanced high pressure compressor. The second objective is to determine the effect, if any, of axial loading distribution on the performance of tandem blading. A conventional rotor and stator, two dual-airfoil tandem rotors with differing loading splits, and a dual-airfoil tandem stator have been designed and will be tested. This report presents the data and performance obtained with Stage A, which was comprised of the conventional rotor and stator blading. A discussion of the aerodynamic and mechanical design of Stage A and the tandem-airfoil configurations is presented in Reference 3.

DESIGN SUMMARY

Blading Design

The stage was designed with zero rotor prewhirl, constant rotor exit total pressure across the span, and axial discharge flow. A rotor tip inlet Mach number of approximately 0.8 and a specific flow of 33 lb/sec-ft^2 were selected to be generally representative of current design practice for highly loaded compressor middle stages. The design velocity diagrams were calculated by means of a computer program that solves the continuity, energy, and radial equilibrium equations for an axisymmetric flow field. Radial gradients of enthalpy and entropy were included in the calculation, and the influence of wall and streamline curvature on the radial distribution of static pressure was taken into account. Circular arc airfoil sections were selected for the rotor and stator blading to be consistent with studies being conducted by NASA-Lewis Research Center (Reference 4). Design incidence (minimum loss) and deviation angles were calculated using equations 286 and 287 of Reference 5. The three-dimensional corrections for incidence and deviation angles were omitted.

Rotor and stator design velocity diagram data, blade element geometry data, and predicted performance are presented in table I and table II for the rotor and stator, respectively. Symbols and performance variables are defined in Appendix C.

TEST EQUIPMENT

Compressor Test Facility

A schematic of the compressor test facility is shown in figure 1. The compressor is driven by a single-stage turbine, powered by exhaust gases from a J75 slave engine, with compressor speed controlled by means of the engine throttle. Air enters the compressor test rig through a 103-foot combined inlet duct, plenum, and bellmouth inlet and is exhausted through an exit diffuser to the atmosphere. The inlet duct contains a flow-measuring orifice designed and installed in accordance with ASME standards. The area contraction ratio from plenum to compressor inlet is approximately 10 to 1.

Compressor Test Rig

A schematic of the compressor test rig is shown in figure 2, and the flowpath dimensions are shown in figure 3. The hub/tip ratio at the rotor inlet is 0.798. The test section has a constant hub diameter of 32.85 inches, and the outer wall converges from a diameter of 41.15 inches at the rotor leading edge to 39.99 inches at the stator trailing edge. Rotor bearing loads are transmitted to the rig support through struts located in the inlet and exhaust case assemblies. The inlet struts are sufficiently far upstream that their wakes are dissipated ahead of the rotor. The stage design specifications of zero rotor prewhirl and axial discharge flow eliminated the need for inlet and exit guide vanes. Flowrate and/or backpressure was varied with a set of motor-driven throttle vanes located in the exhaust case.

Instrumentation

Instrumentation was provided to obtain overall and blade element performance data for each blade or vane row. The locations of axial instrumentation stations are indicated in figure 3. Axial and circumferential locations of the instrumentation are shown in figure 4. Dual instrumentation was provided at each axial station, except the rotor inlet, to provide a redundant set of measurements.

Airflow was measured with an ASME standard thin-plate orifice located in the compressor facility inlet duct. Compressor rotor speed was measured with an electromagnetic sensor mounted adjacent to a 60-tooth gear on the rotor shaft. Gear tooth passing frequency was displayed as rpm on a digital computer. Rotor rpm was also recorded on magnetic tape. Inlet total temperature was measured in the inlet plenum by means of six half-shielded total temperature probes; inlet total pressure was measured in the plenum by means of five Kiel-type total pressure probes. Six equally spaced static pressure taps were located on both the inner and outer walls at instrumentation Station 0.

Radial distributions of static pressure at the rotor inlet and exit and at the stator exit were measured by means of 8-degree wedge probes. Four inner wall and four outer wall static pressure taps, approximately equally spaced, were located at each of these stations. The rotor exit (i.e., stator inlet) and stator exit instrumentation stations also had four inner and four outer wall taps installed across a vane gap to measure the static pressure variation across the gap. Ten static pressure taps were located over the rotor blade tips on the outer wall, between -10% and 101% rotor axial chord, to measure the rotor tip static pressures. Midspan stator surface static pressure distributions were measured with eight pressure taps on each surface.

Twenty-degree wedge probes were used to measure the radial distributions of total pressure and flow angle at the rotor inlet and exit, and flow angle at the stator exit. Stator exit total pressure and temperature across a stator gap were measured at each of two circumferential locations by means of circumferentially traversed radial rakes with elements at nine radial locations. The elements of each radial rake were used to measure both total pressure and temperature. A fixed radial rake with five Kiel-type total pressure sensors was also installed downstream of the stator for use with the wall static measurements to calculate the freestream Mach number. This Mach number was used to correct the total temperature and the 8-degree wedge static pressure measurements.

Steady-state pressure data were measured with a multichannel pressure transducer scanning system that includes automatic data recording on computer cards. Steady-state temperature measurements were also automatically recorded on computer cards by a multichannel scanning system in conjunction with a temperature reference oven and a digital voltmeter. Traverse pressure and temperature data and transient pressure data were recorded on magnetic tape at up to 600 samples per minute per channel.

Two static pressure taps located in the plenum, two of the outer wall static pressure taps at Station 0, and a total pressure probe with sensors at 10, 50, and 90% spans at the rotor exit were close-coupled to transducers for transient recording during operation into and out of stall. High-response pressure transducers, mounted as total pressure probes at 10, 50, and 90% span behind the

rotor, were used to measure high-frequency total pressure oscillations and to indicate the initiation of rotating stall. The high-response transducer output was recorded on magnetic tape and correlated in time with the transient recording of the Station 0 static and the stage exit total pressures.

Five rotor blades were instrumented with strain gages to provide vibratory stress data. The gage outputs were displayed on oscilloscopes and visually monitored during tests. Gage locations were determined by bench vibration tests with the aid of Stress-Coat, and the selected locations were verified by a fatigue test.

A 20-degree wedge traverse probe, an 8-degree wedge traverse probe, a circumferential traverse probe and unit, and a high-response probe are shown in figures 5, 6, 7, and 8, respectively.

PROCEDURES

Test Procedures

Shakedown Tests

A shakedown test was conducted to check out the rig and blade vibration levels, blade stress levels, instrumentation, and data reduction programs. Overall and blade element performance data were obtained for two operating points at 100% design equivalent rotor speed (89.83 lb/sec and 91.0 lb/sec). Stall transient data were also obtained at 50, 70, 90, and 100% design equivalent rotor speed.

Performance Tests

Overall and blade element performance data were obtained at 50, 70, 90, 100, and 110% of design equivalent rotor speed. Stall transient data were obtained at 100 and 110% of design equivalent rotor speed. Six data points were recorded at each speed to define stage performance between maximum obtainable flow and near stall. The near-stall point was determined on the basis of flow and rotor exit pressure. At each test point, traverse surveys were followed by the recording of fixed pressure and temperature instrumentation data with the traverse probes withdrawn. Blade stresses were monitored during steady-state and stall transient operation at all rotor speeds.

Transient measurements of bellmouth static pressure, rotor speed, and rotor exit total pressure were recorded ten times per second to define stall characteristics as the stage was operated into and out of stall. The output from a high-response total pressure probe (10, 50, and 90% spans) at the rotor exit was also recorded as the stage was operated into and out of stall and correlated in time with the other transient measurements.

Data Reduction Procedures

Data reduction was accomplished in two steps. The first step involved the use of two computer programs to (1) convert millivolt readings to appropriate engineering units and (2) provide a tabulated and plotted array of pressures, temperature, and air angle data at each station. Conversion of data to absolute values, appropriate Mach number corrections, and correction of pressures and temperature to NASA standard day conditions were performed in the second computer program.

The second step in the data reduction procedure involved a computer program to calculate overall and blade element performance variables for the rotor and stator. The array of data provided in step one of the preceding paragraph was analyzed for the selection of radial distributions of pressures, temperature, and air angle at each axial station for input into the computer program. Stator exit total temperature distributions were used for rotor performance calculations.

Overall Performance

Total pressure ratios and adiabatic efficiencies were calculated for the rotor and the rotor-stator (stage). The rotor and stator exit total pressures and total temperatures were weighted according to local mass flow to obtain average values. The mass-averaged stator exit total temperatures were used for the rotor performance calculations.

The stator wake total pressures and total temperatures at each radial measuring station were mass averaged using the local total pressure in the wake, the local total temperature in the wake, and the 8-degree wedge probe static pressure. Mach number was determined from the local total and static pressure measurements. Massflux was then obtained from the relationship

$$\overline{m} = \frac{W\sqrt{T}}{PA} = \sqrt{\frac{\gamma g_c}{R}}\; M \left[1 + \frac{\gamma-1}{2} M^2\right]^{1/2} p/P$$

where A is the flow area associated with each radial measurement increment.

Blade Element Performance

Performance and velocity diagram calculations were performed for each blade row along design streamlines that pass through 5, 10, 15, 30, 50, 70, 85, 90, and 95% span at instrumentation Station 2. The calculations were performed at the instrumentation stations and at the rotor and stator leading and trailing edges. The pressures, temperatures, and air angles at the blade row leading and trailing edges were obtained by translating the measured values from the instrumentation stations assuming conservation of angular momentum, conservation of energy, continuity, and that the actual streamlines do not deviate substantially from design streamlines for any test point. A description of the translation method is presented below.

Since the data were translated along streamlines the critical area (i.e., area for M = 1.0) at the instrumentation station is the same as the critical area at the adjacent blade row leading or trailing edge. Therefore, from the isentropic flow relationships, it can be shown that

$$\frac{W/W^*}{W_t/W_t^*} = \frac{A^*/A}{A_t^*/A_t} = \frac{A_t}{A} \qquad (1)$$

where:

- A = stream tube area
- W = stream tube flow
- W^* = flow required to choke A
- A^* = critical area
- t denotes the translation station (i.e., the blade row leading or trailing edge).

The quantity W/W* was calculated from the relationship:

$$W/W^* = M\left[\frac{2 + (\gamma-1)\ M^2}{\gamma+1}\right]^{\frac{1+\gamma}{2\ (1-\gamma)}} \qquad (2)$$

Because the actual streamlines are assumed not to deviate substantially from the design streamlines, the flow relationship at the translated station is:

$$W_t/W_t^* = \frac{W/W^*}{\left(\frac{W/W^*}{W_t/W_t^*}\right)_{\text{Design}}} \qquad (3)$$

Using an iterative procedure, the Mach number at the translated station was calculated from equation (2). The static pressure, temperature, and absolute velocity at the translated station were then calculated from the relationships given below.

$$P_t = \frac{P}{\left[1 + \frac{\gamma-1}{2} M_t^2\right]^{\frac{\gamma}{\gamma-1}}} \qquad (4)$$

$$t_t = \frac{T}{1 + \frac{\gamma-1}{2} M_t^2} \qquad (5)$$

$$V_t = M_t \sqrt{\gamma g_c R t_t} \qquad (6)$$

Based on the assumption of constant angular momentum, the tangential velocity was found from:

$$V_{\theta t} = \frac{rV_{\theta}}{r_t} \qquad (7)$$

The axial velocities and air angles were then calculated from:

$$V_{mt} = \sqrt{V^2{}_t - V_{\theta t}{}^2} \qquad (8)$$

$$V_{zt} = V_{mt} \cos \epsilon \qquad (9)$$

$$\beta_t = \tan^{-1} \frac{V_{\theta t}}{V_{zt}} \qquad (10)$$

Stall Transient Data

Bellmouth static pressure at incipient stall was determined from plots similar to the one shown in figure 9, and the corresponding weight flow was determined from the correlation of bellmouth static pressure and orifice weight flow shown in figure 10. The steady-state data were extrapolated to the stall flow using the shape of the transient data curve as a guide line. Incipient stall points were determined in this manner for each rotor speed.

PRESENTATION OF DATA

Overall Performance

Overall performance data are presented in terms of pressure ratio and adiabatic efficiency as functions of corrected weight flow ($W\sqrt{\theta}/\delta$) and equivalent rotor speed ($N/\sqrt{\theta}$) for the rotor in figure 11 and rotor-stator (stage) in figure 12. The solid symbol on the stall line is the stall point determined from the transient data. Pressure ratio, adiabatic efficiency, and polytropic efficiency for the rotor and stage are tabulated for the steady-state data points in table A-1 of Appendix A.

At design equivalent rotor speed, the rotor achieved a maximum adiabatic efficiency of 85.1% at a total pressure ratio of 1.29 and a corrected flow of 103 lb/sec compared with respective predicted values of 90.8%, 1.32, and 110 lb/sec. The stage achieved a maximum adiabatic efficiency of 78.6% at a total pressure ratio of 1.27 and a corrected flow of 103 lb/sec; the predicted adiabatic efficiency and total pressure ratio for the stage were 85.4% and 1.30, respectively, at a corrected flow of 110 lb/sec.

Blade Element Performance

As discussed on page 5, the blade element performance and velocity diagram calculations were performed at the instrumentation stations and at the rotor and stator leading and trailing edges. Results of these calculations are tabulated in tables A-2 and A-3 of Appendix A for each of the nine design streamline locations. Table A-2 is presented to illustrate the small differences at the near-design point between values calculated from the data at the

instrumentation stations and the values calculated from the data that have been translated to the rotor and stator leading and trailing edges. Due to the small differences between translated and untranslated values, table A-3 contains only the values calculated from translated data for the remaining compressor test points. The plotted results discussed for the rotor and stator in the following paragraphs are the values that have been calculated from the translated data.

Rotor

Rotor diffusion factor, deviation angle, and loss coefficient are shown as functions of incidence angle in figures 13a through 13i. At the design incidence angle and design rotor speed, total pressure losses and deviation angles are greater than the predicted values at 5, 70, 85, 90, and 95% span from the tip and equal to or less than the design values at 10, 30, and 50% span. Diffusion factor values at design incidence angle and design rotor speed are less than the design values at 10, 15, 30, and 50% span from the tip, while corresponding diffusion factor values at 5, 70, 85, 90, and 95% span are greater than the design values.

Loss parameter versus diffusion factor is presented in figures 14a through 14c for 10, 50, and 90% span, respectively. The loss parameter versus diffusion factor curve used to design Rotor A and the actual design point are included in these figures for comparison with the performance data. The design curve represents a correlation of the minimum loss data from References 6 through 10. Although the data from References 6 through 10 are for Series 65 blade sections, the data presented in Reference 5 indicate that a single correlation of loss parameter versus diffusion factor can be used for both Series 65 and double-circular-arc blade sections. The range of data in the Reference 5 correlation and the two-dimensional cascade data from figure 149 of Reference 5 are shown in figures 14a through 14c for comparison with the selected design loss curves. At design equivalent rotor speed, the loss parameter values that correspond to the minimum loss coefficients in figure 13 are above the design curve at each percent span; the largest difference occurring at the hub.

Axial gradients of rotor tip static pressure ratio $[p_L/(p \text{ at } -10\% \text{ axial chord})]$ are shown in figures 15a through 15f. In the order of decreasing flowrate at design equivalent rotor speed, these figures indicate that the axial distribution of rotor tip loading shifted toward the leading edge as the compressor was throttled toward stall flow.

Stator

Stator diffusion factor, deviation angle, and loss coefficient are presented as functions of incidence angle in figures 16a through 16i. At design incidence angle and rotor speed, stator losses are approximately equal to the predicted values across the entire span of the vane, except for 5% span from the tip where the losses are above the design values. At the design incidence angle and rotor speed, stator deviation angles are greater than the predicted values across the entire span of the vane; and, with the exception of 70% span from the tip where the diffusion factor is approximately equal to the predicted value, the diffusion factors are less than predicted at all span locations.

Loss parameter versus diffusion factor is shown in figures 17a through 17c for 10, 50, and 90% span, respectively. The loss parameter versus diffusion factor curve used to design Stator A, the actual design point, the range of stator data from Reference 5, and the two-dimensional cascade data from Reference 5 are included in the figures for comparison with the Stator A performance data. The design curve represents a correlation of the minimum loss data from References 10 through 12. The data from References 10 through 12 are for Series 65 blade sections; however, as discussed on page 8, a single correlation of loss parameter versus diffusion factor can be used for both Series 65 and double-circular-arc blade sections. At the design equivalent rotor speed, the loss parameter values corresponding to the minimum loss coefficient are approximately equal to the predicted values at each percent span.

The midspan stator static pressure coefficient distributions, at design equivalent rotor speed, are shown in figures 18a through 18f. Static pressure coefficient distributions for all data points are tabulated in Appendix B. The near-constant static pressure coefficients near the trailing edge for the near-stall (89 lb/sec) and the next-to-near stall (98 lb/sec) data points (figures 18f and e) indicate that the flow was probably separated from the suction surface at approximately 75% chord for these flow conditions.

The wall static pressure data, shown for design equivalent rotor speed in figures 19a through 19f, were examined to determine if the gradients with respect to the stator vanes were significant. In general, the variations of static pressure at different circumferential locations (solid symbols in figure 19) at approximately the same location relative to the stator vane are as large as any variations that may be noted within one stator vane pitch. It was, therefore, concluded that no significant pitch-wise variation was present in these data.

Summary Remarks

Stage A was designed and tested to establish a performance baseline for comparison with the results of subsequent tests planned for two highly loaded tandem-airfoil-configuration stages with identical design velocity triangles. Although Stage A did not attain the predicted values of adiabatic efficiency and total pressure ratio, a baseline for performance comparison was established.

At design equivalent rotor speed, Rotor A attained a maximum adiabatic efficiency of 85.1% at a total pressure ratio of 1.29. Predicted values of adiabatic efficiency and total pressure ratio were 90.8 and 1.32, respectively. High losses and deviation angles in the rotor hub-to-midspan region resulted in low rotor performance. At design equivalent rotor speed, Stage A attained a maximum adiabatic efficiency of 78.6% at a total pressure ratio of 1.27. The predicted adiabatic efficiency and total pressure ratio were 85.4% and 1.30, respectively.

Table I. Rotor A Blade Element Design

Velocity Diagram Data

Equivalent Rotor Speed = 4210 rpm Corrected Weight Flow = 110 lb/sec

	Percent Span From Tip: Leading Edge	Trailing Edge	V'_{le} (ft/sec)	V_{zle} (ft/sec)	$V_{\theta le}$ (ft/sec)	β'_{le} (deg)	U_{le} (ft/sec)	V'_{te} (ft/sec)	V_{zte} (ft/sec)	$V'_{\theta tc}$ (ft/sec)	β'_{te} (deg)	U_{te} (ft/sec)
Hub	96.5	95.0	778.0	484.5	608.8	51.49	608.8	483.8	463.4	138.9	16.69	610.5
	91.5	90.0	784.0	484.4	616.5	51.84	616.5	492.2	467.0	155.5	18.42	617.6
	86.4	85.0	790.1	484.3	624.2	52.19	624.2	500.2	469.8	171.6	20.07	624.7
	70.9	70.0	808.5	483.8	647.8	53.24	647.8	523.3	476.7	215.9	24.36	645.9
	50.0	50.0	833.5	482.6	679.6	54.62	679.6	548.2	480.2	264.3	28.83	674.2
	29.1	30.0	858.7	480.8	711.5	55.95	711.5	562.1	474.0	302.2	32.53	702.6
	13.6	15.0	877.4	479.0	735.1	56.91	735.1	566.1	463.1	325.6	35.11	723.8
	8.5	10.0	883.5	478.4	742.8	57.22	742.8	566.0	458.6	331.8	35.88	730.9
Tip	3.5	5.0	889.6	477.7	750.5	57.52	750.5	565.0	453.8	336.6	36.56	738.0

Design Performance Data

Rotor Pressure Ratio: 1.3188 Adiabatic Efficiency: 90.8%

	Percent Span From Tip: Leading Edge	Trailing Edge	M'_{le}	i_m (deg)	D	$\bar{\omega}'$	Loss Parameter	δ° (deg)	P_{te} (psf)	T_{te} (°R)
Hub	96.5	95.0	0.7102	-0.354	0.5533	0.11341	0.03154	8.937	2789.1	566.63
	91.5	90.0	0.7152	-0.439	0.5447	0.10314	0.02876	9.121	2789.2	566.20
	86.4	85.0	0.7212	-0.499	0.5370	0.09446	0.02637	9.149	2788.7	565.81
	70.9	70.0	0.7380	-0.813	0.5171	0.07363	0.02067	8.665	2788.9	565.94
	50.0	50.0	0.7608	-1.430	0.5028	0.06131	0.01732	8.164	2792.9	564.71
	29.1	30.0	0.7836	-2.078	0.5057	0.07348	0.02085	7.709	2792.8	565.53
	13.6	15.0	0.8005	-2.485	0.5167	0.09534	0.02713	7.635	2788.8	566.69
	8.5	10.0	0.8061	-2.606	0.5224	0.10505	0.02988	7.831	2788.2	567.28
Tip	3.5	5.0	0.8116	-3.076	0.5296	0.11647	0.03318	7.778	2788.3	568.04

Geometry Data

Airfoil: Circular Arc No. of Blades: 70 Chord Length: 2.57 inches

	Percent Span From Tip: Leading Edge	Trailing Edge	κ'_{le} (deg)	κ'_{te} (deg)	ϕ (deg)	γ° (deg)	σ	t/c
Hub	96.5	95.0	51.84	7.75	44.09	29.708	1.7241	0.0783
	91.5	90.0	52.28	9.30	42.98	30.705	1.7036	0.0763
	86.4	85.0	52.69	10.92	41.77	31.724	1.6835	0.0743
	70.9	70.0	54.06	15.70	38.36	34.826	1.6250	0.0682
	50.0	50.0	56.05	20.67	35.39	38.359	1.5528	0.0600
	29.1	30.0	58.03	24.82	33.22	41.443	1.4868	0.0518
	13.6	15.0	59.40	27.48	31.92	43.446	1.4409	0.0457
	8.5	10.0	59.83	28.05	31.77	43.960	1.4265	0.0437
Tip	3.5	5.0	60.60	28.78	31.82	44.696	1.4122	0.0417

Table II. Stator A Blade Element Design

Velocity Diagram Data

Equivalent Rotor Speed = 4210 rpm Corrected Weight Flow = 110 lb/sec

	Percent Span From Tip: Leading Edge	Trailing Edge	V_{le} (ft/sec)	V_{zle} (ft/sec)	$V_{\theta le}$ (ft/sec)	β_{le} (deg)	V_{te} (ft/sec)	V_{zte} (ft/sec)	$V_{\theta te}$ (ft/sec)	β_{te} (deg)
Hub	95.0	95.0	667.2	471.9	471.7	44.99	480.0	480.0	0.0	0.0
	90.0	90.1	663.0	475.4	462.2	44.20	481.9	481.9	0.0	0.0
	85.0	85.2	658.9	478.2	453.3	43.47	483.6	483.6	0.0	0.0
	70.0	70.1	648.6	485.1	430.5	41.58	488.8	488.8	0.0	0.0
	50.0	50.0	638.6	489.2	410.5	40.00	494.4	494.4	0.0	0.0
	30.0	29.8	628.6	483.9	401.1	39.66	494.7	494.6	0.0	0.0
	15.0	14.8	619.8	474.1	399.2	40.09	492.2	492.0	0.0	0.0
	10.0	9.9	617.4	470.1	400.2	40.40	491.4	491.2	0.0	0.0
Tip	5.0	4.9	615.6	465.8	402.5	40.84	491.2	491.0	0.0	0.0

Design Performance Data

Stage Pressure Ratio: 1.2982 Adiabatic Efficiency: 85.4%

	Percent Span From Tip: Leading Edge	Trailing Edge	M_{le}	i_m (deg)	D	$\bar{\omega}$	Loss Parameter	δ° (deg)	P_{te} (psf)
Hub	95.0	95.0	0.5915	-1.982	0.5183	0.09619	0.03242	13.031	2732.5
	90.0	90.1	0.5878	-2.003	0.5106	0.09171	0.03125	12.854	2735.8
	85.0	85.2	0.5840	-2.001	0.5035	0.08721	0.03004	12.734	2738.5
	70.0	70.1	0.5747	-2.086	0.4840	0.07636	0.02717	12.334	2746.1
	50.0	50.0	0.5655	-2.228	0.4672	0.07100	0.02634	12.120	2754.1
	30.0	29.8	0.5556	-2.697	0.4649	0.07570	0.02926	12.708	2752.7
	15.0	14.8	0.5468	-3.211	0.4695	0.08253	0.03276	13.510	2746.4
	10.0	9.9	0.5442	-3.450	0.4722	0.08632	0.03457	13.808	2744.2
Tip	5.0	4.9	0.5422	-3.619	0.4755	0.08920	0.03603	14.152	2743.2

Geometry Data

Airfoil: Circular Arc No. of Vanes: 66 Chord Length: 2.35 inches

	Percent Span From Tip: Leading Edge	Trailing Edge	κ_{le} (deg)	κ_{te} (deg)	ϕ (deg)	γ° (deg)	σ	t/c
Hub	95.0	95.0	46.97	-13.03	60.00	16.972	1.4850	0.09
	90.0	90.1	46.20	-12.85	59.06	16.768	1.4689	0.09
	85.0	85.2	45.47	-12.73	58.20	16.375	1.4531	0.09
	70.0	70.1	43.67	-12.33	56.00	15.673	1.4073	0.09
	50.0	50.0	42.23	-12.12	54.35	15.055	1.3504	0.09
	30.0	29.8	42.35	-12.71	55.06	14.825	1.2980	0.09
	15.0	14.8	43.30	-13.51	56.81	14.902	1.2614	0.09
	10.0	9.9	43.85	-13.81	57.66	15.027	1.2497	0.09
Tip	5.0	4.9	44.45	-14.15	58.61	15.153	1.2382	0.09

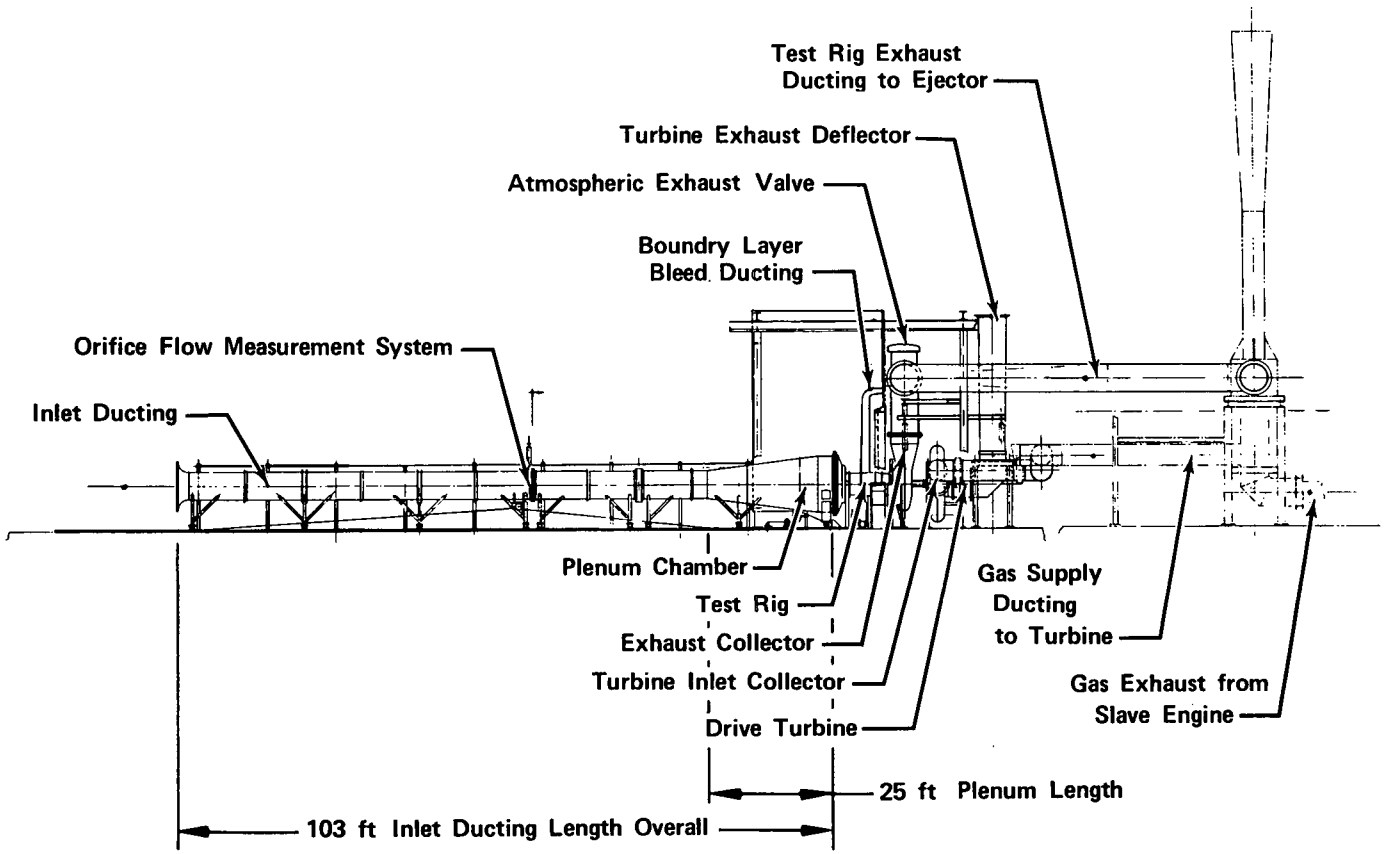


Figure 1. Compressor Research Facility

FD 10891B

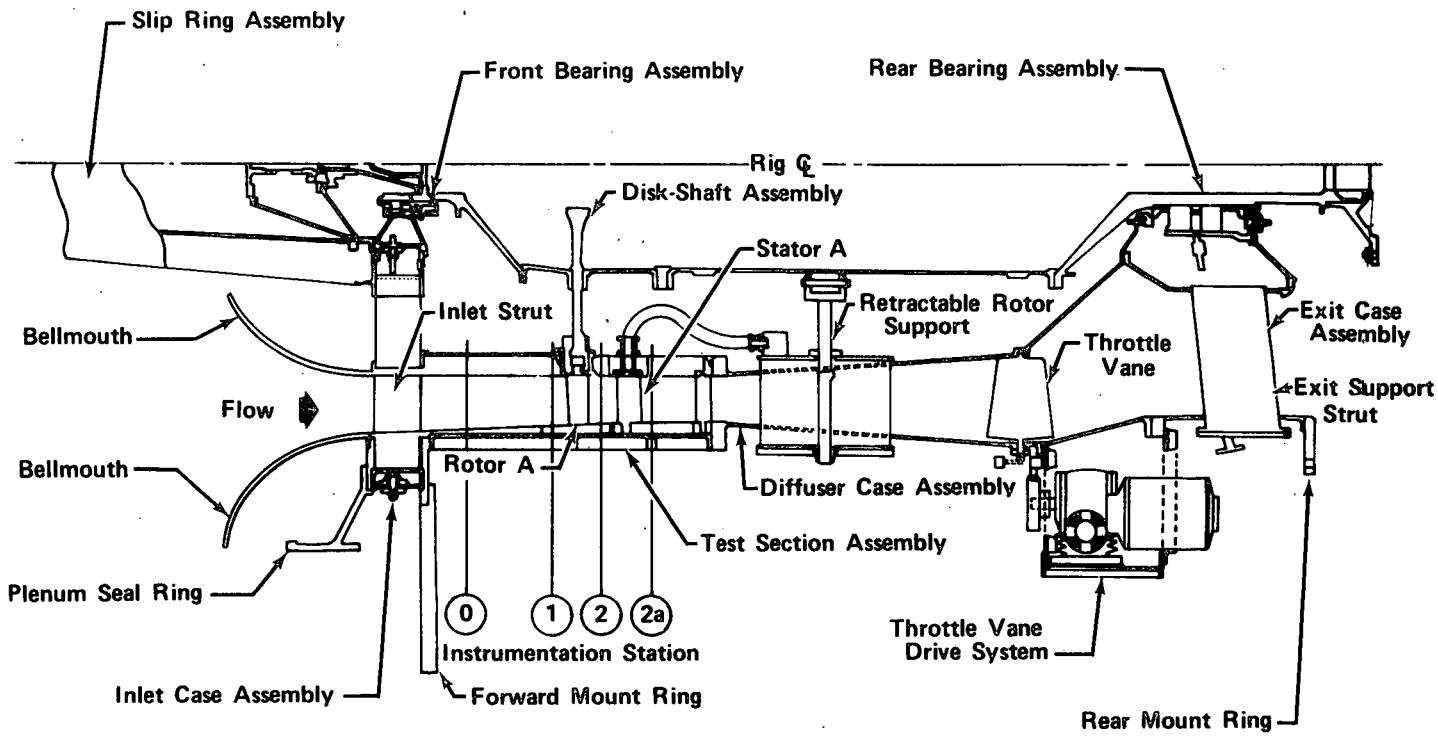
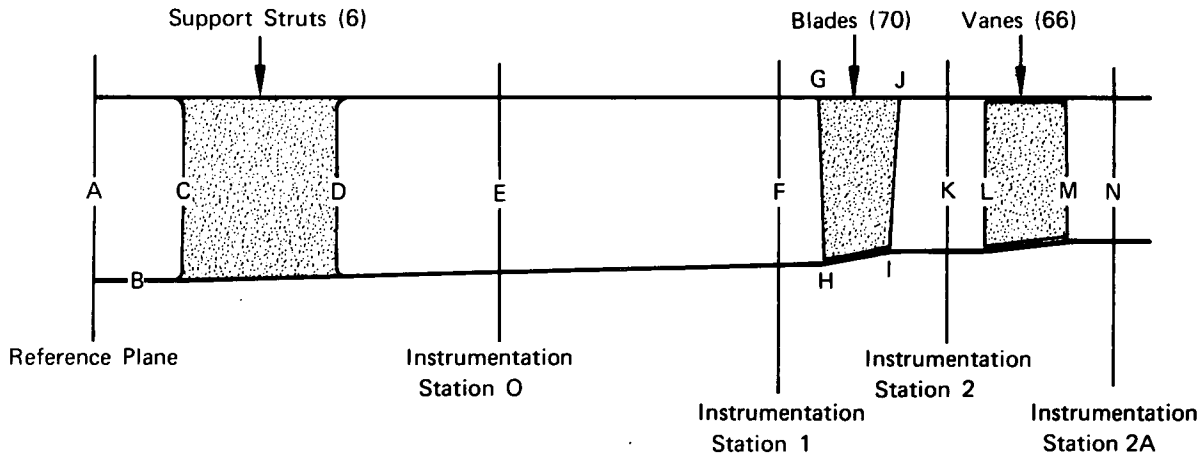


Figure 2. Single-Stage Compressor Rig

FD 47076B

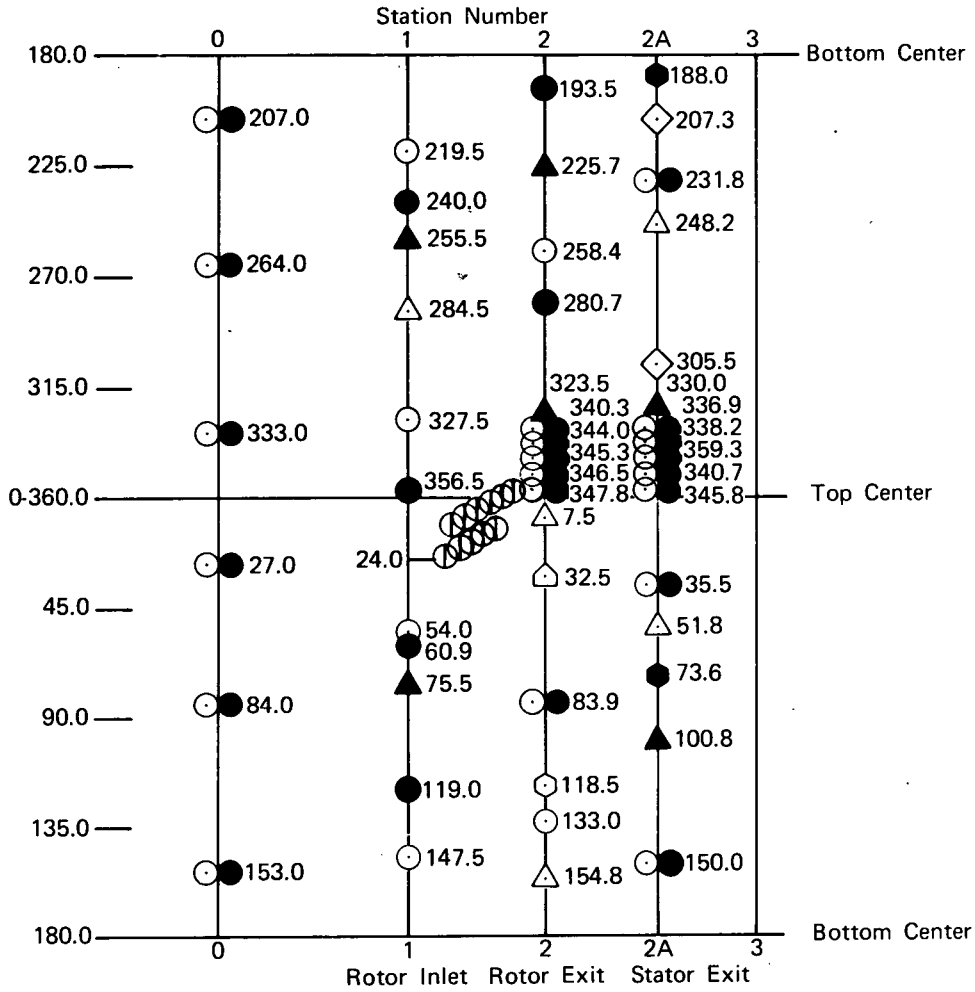


Flow Path Location	Inner Diameter	Outer Diameter	Axial Distance From Reference Plane
A	32.850	41.790	0.0
B	32.850	41.790	2.010
C	32.850	41.744	2.440
D	32.850	41.444	6.265
E	32.850	41.340	10.248
F	32.850	41.226	17.188
G	32.850	–	18.196
H	–	41.145	18.423
I	–	40.562	20.223
J	32.850	–	20.450
K	32.850	40.520	21.368
L	32.850	40.450	22.163
M	32.850	39.990	24.468
N	32.850	39.990	25.418

Note: All Dimensions Are in Inches

Figure 3. Flowpath Dimensions (Inches)

FD 58980



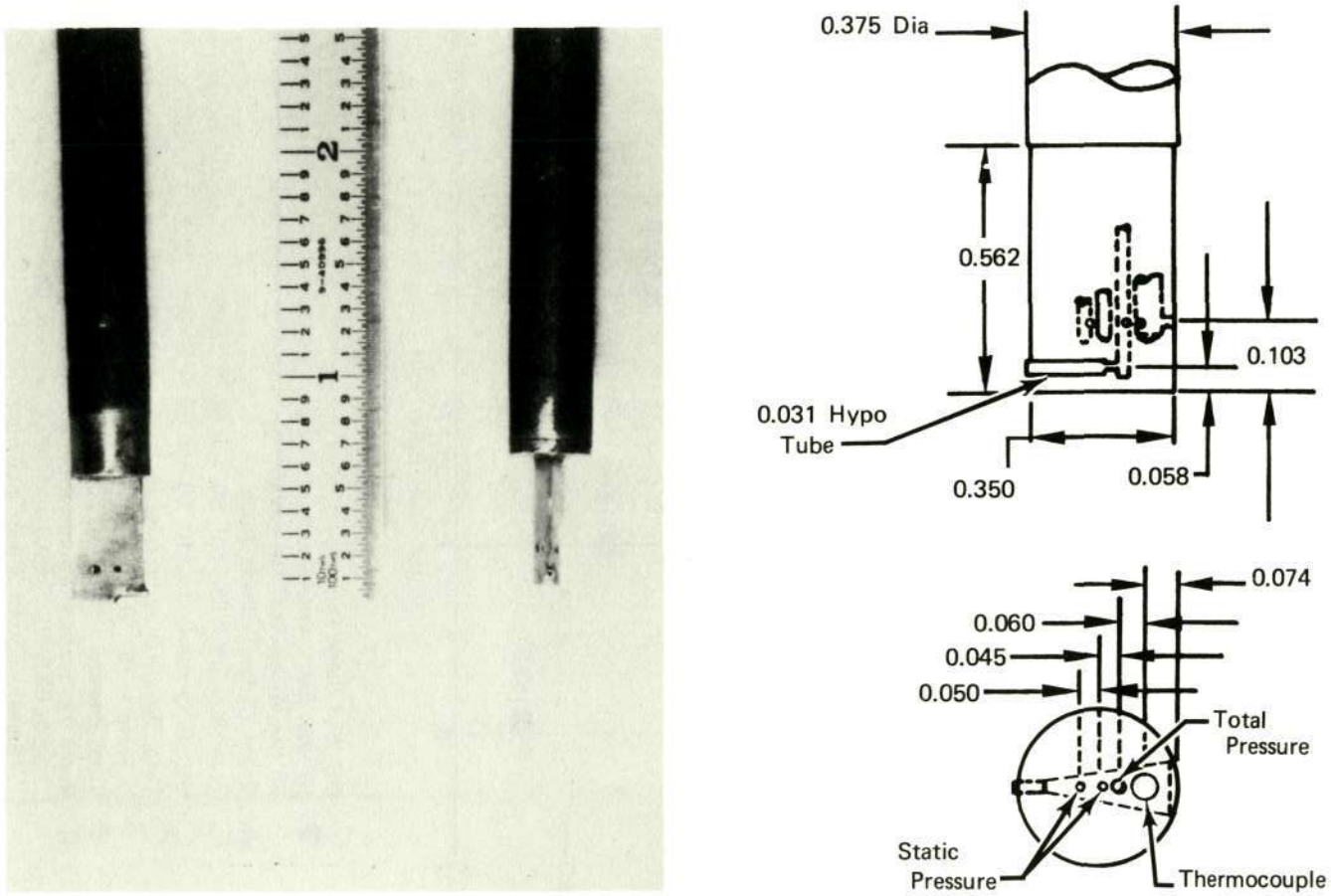
SYMBOLS

- OD Wall Static Pressure
- ID Wall Static Pressure
- 20 deg Wedge Traverse Probe
- 8 deg Wedge Traverse Probe
- Total Pressure Probe (10, 50 and 90 % Spans)
- High-Response Probe (10, 50 and 90 % Spans)
- Total Temperature/Pressure Probe, Circumferential Traverse (5, 10, 15, 30, 50, 70, 85, 90 and 95 % Spans)
- Total Pressure Probe (10, 30, 50, 70 and 90 % Spans)
- Rotor Tip Static Pressure (-10, 5.8, 19.2, 27.5, 35.8, 44.2, 52.5, 65.8, 79.2, 90.3 and 100.8 % Axial Chord) (Equally Spaced 3 deg Circumferentially)

Note: All Dimensions Are in Degrees

Figure 4. Instrumentation Layout

FD 58981

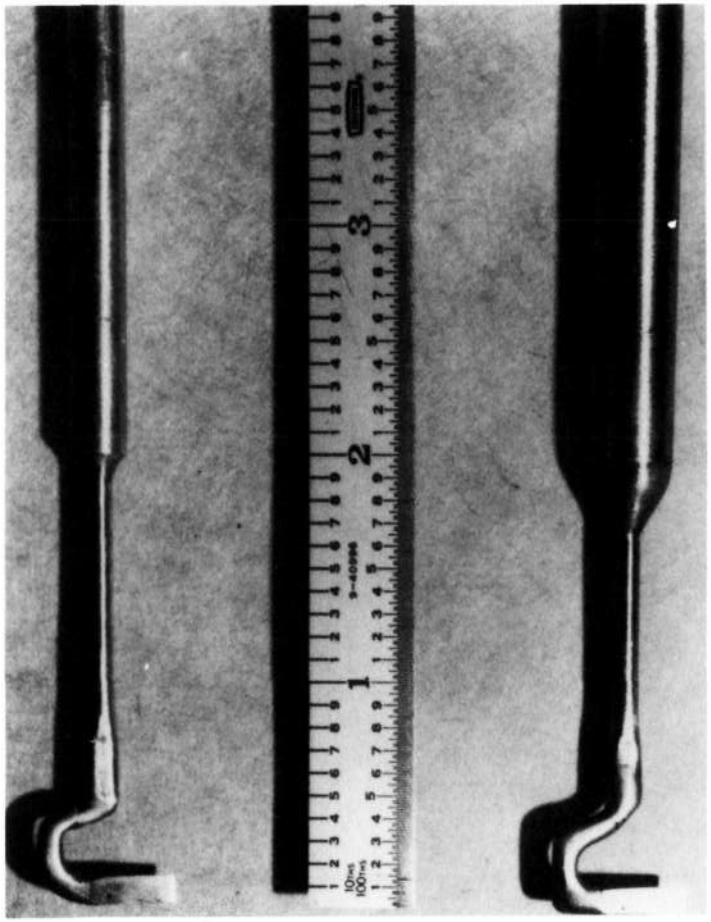


FD 47069

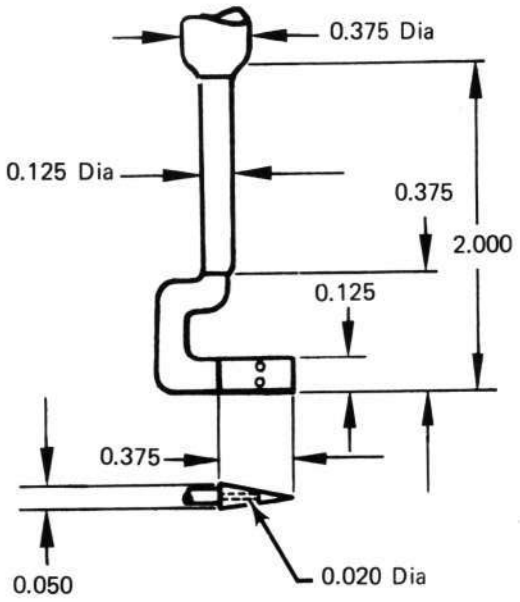
Note: All dimensions are in inches

Figure 5. Twenty-Degree Wedge Traverse Probe

FD 58982



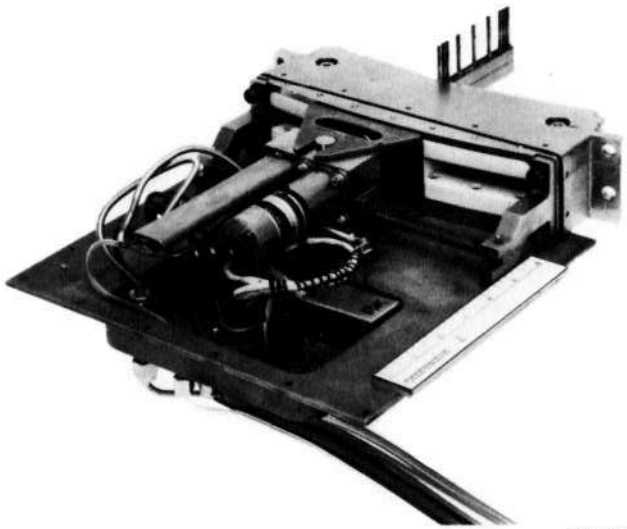
FD 47069



Note:
All dimensions are in inches.

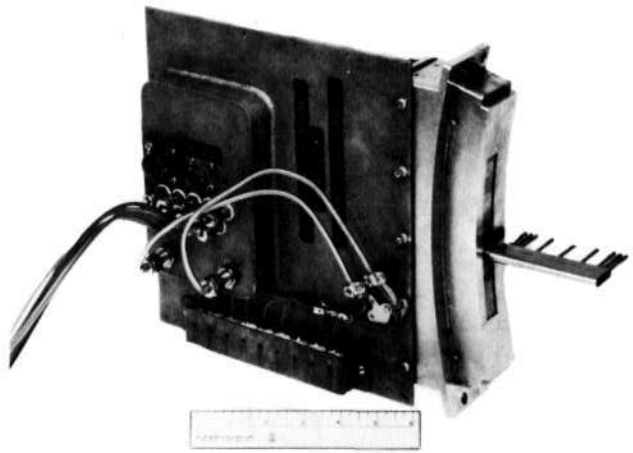
Figure 6. Eight-Degree Wedge Traverse Probe

FD 58983



FE 97405

Front View With Cover Removed



FE 97404

Rear View

Figure 7. Total Pressure/Total Temperature Circumferential Traverse Unit

FD 47068

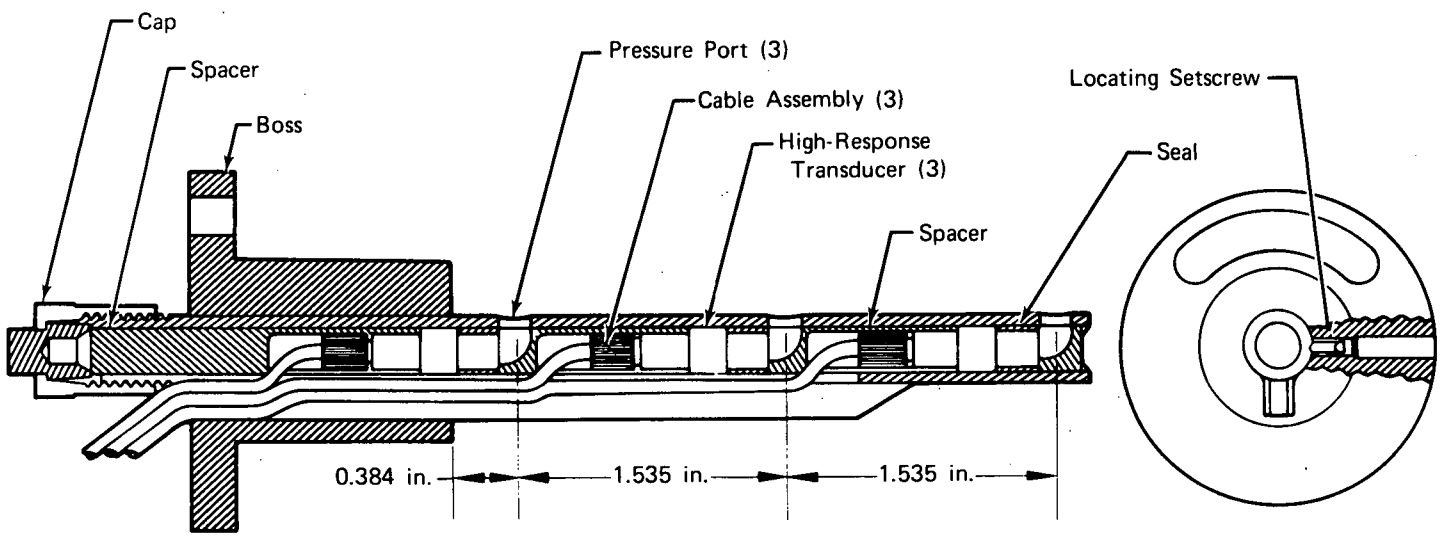


Figure 8. High-Response Probe

FD 58984

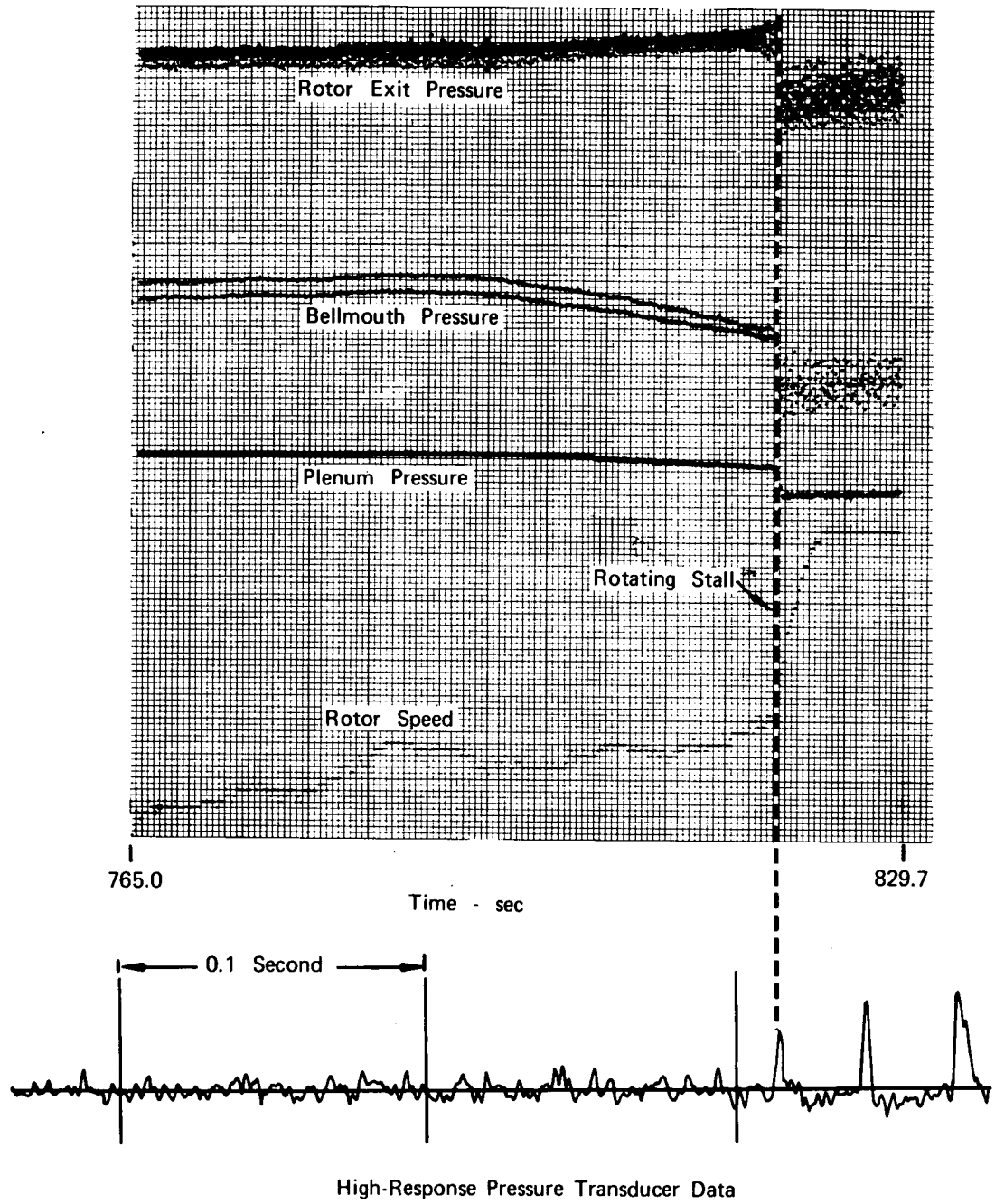


Figure 9. Typical Stall Transient Data FD 34394B

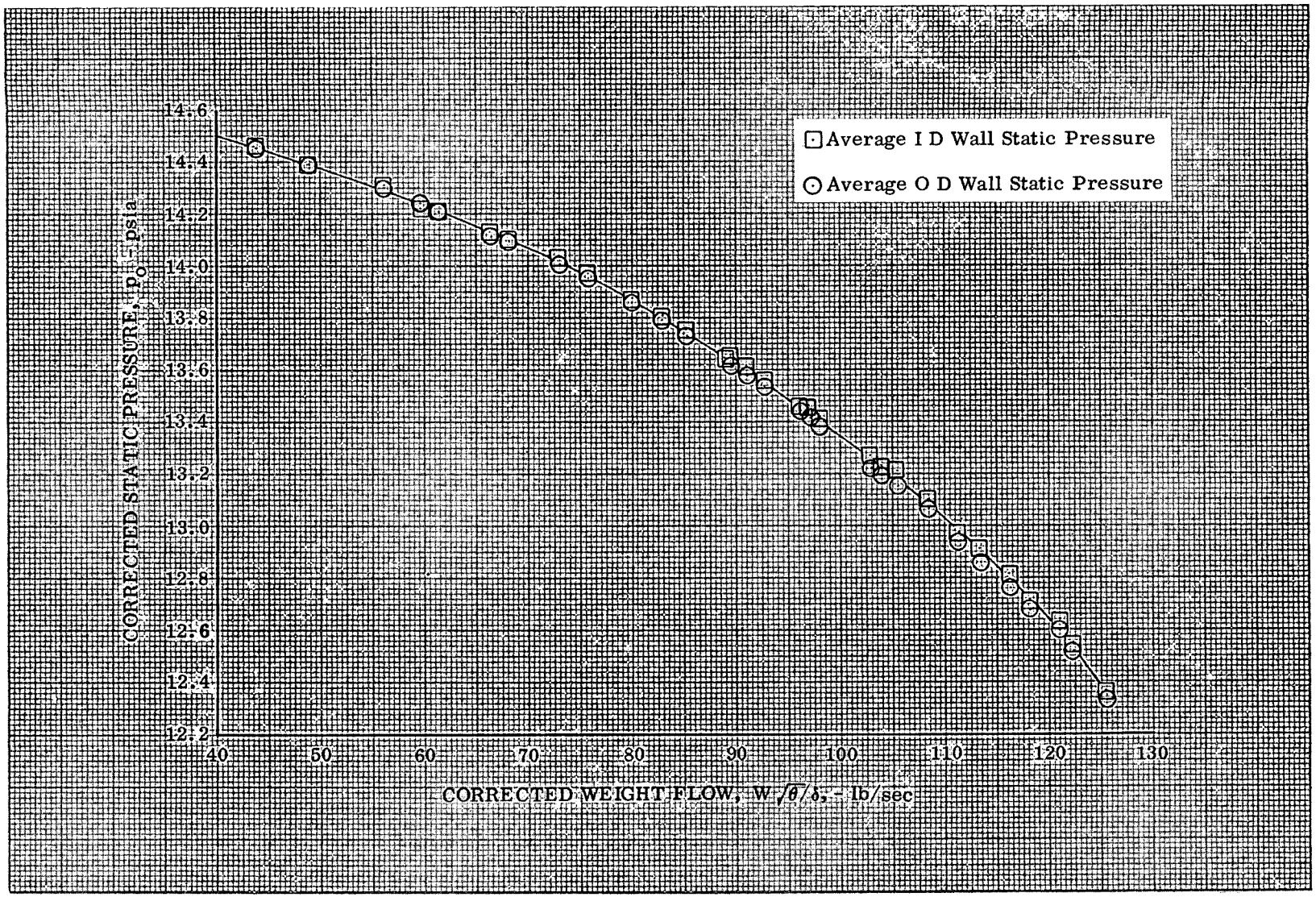


Figure 10. Station 0 Corrected Static Pressure vs Corrected Weight Flow

DF 89280

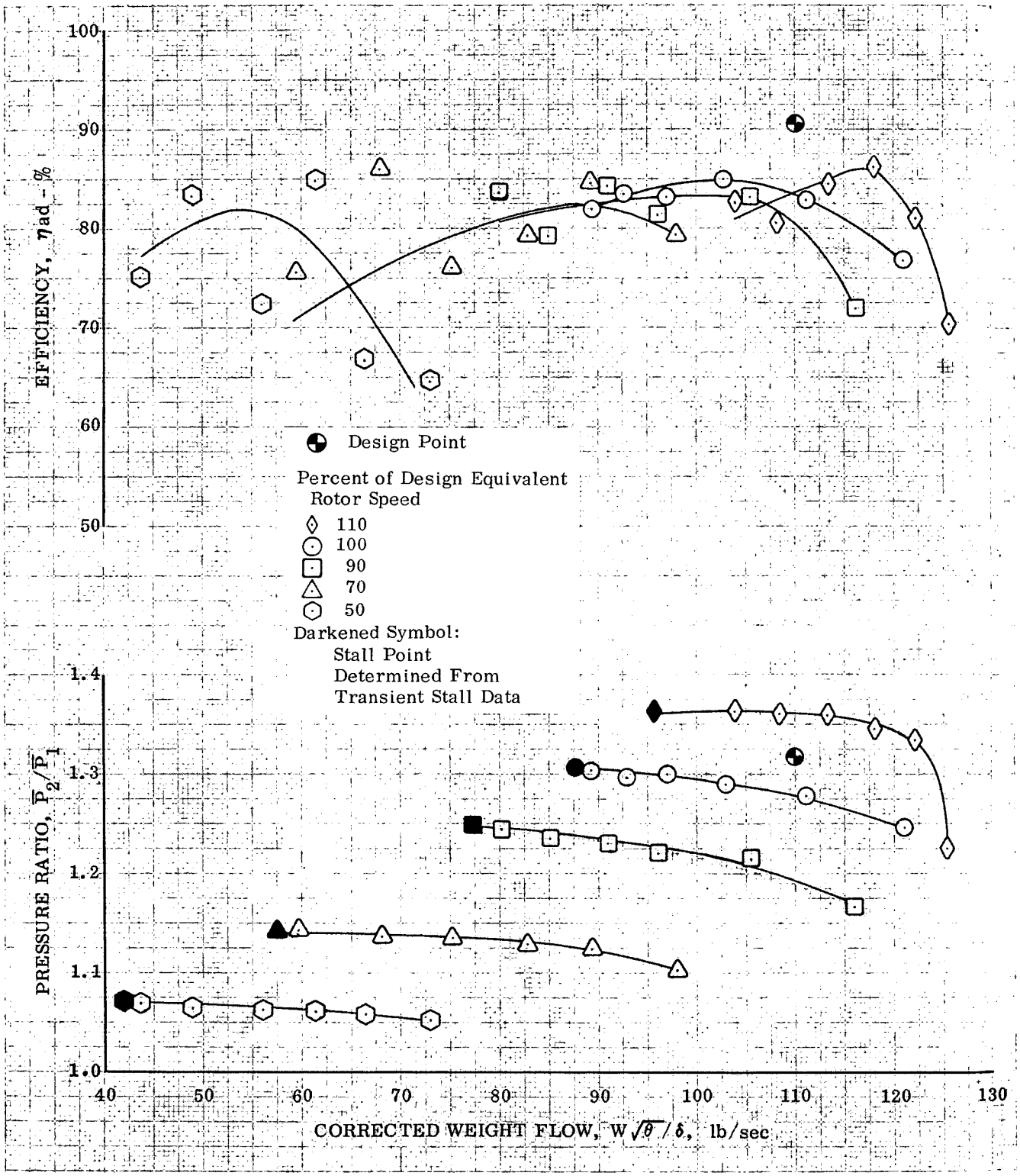


Figure 11. Overall Performance of Rotor A DF 89281

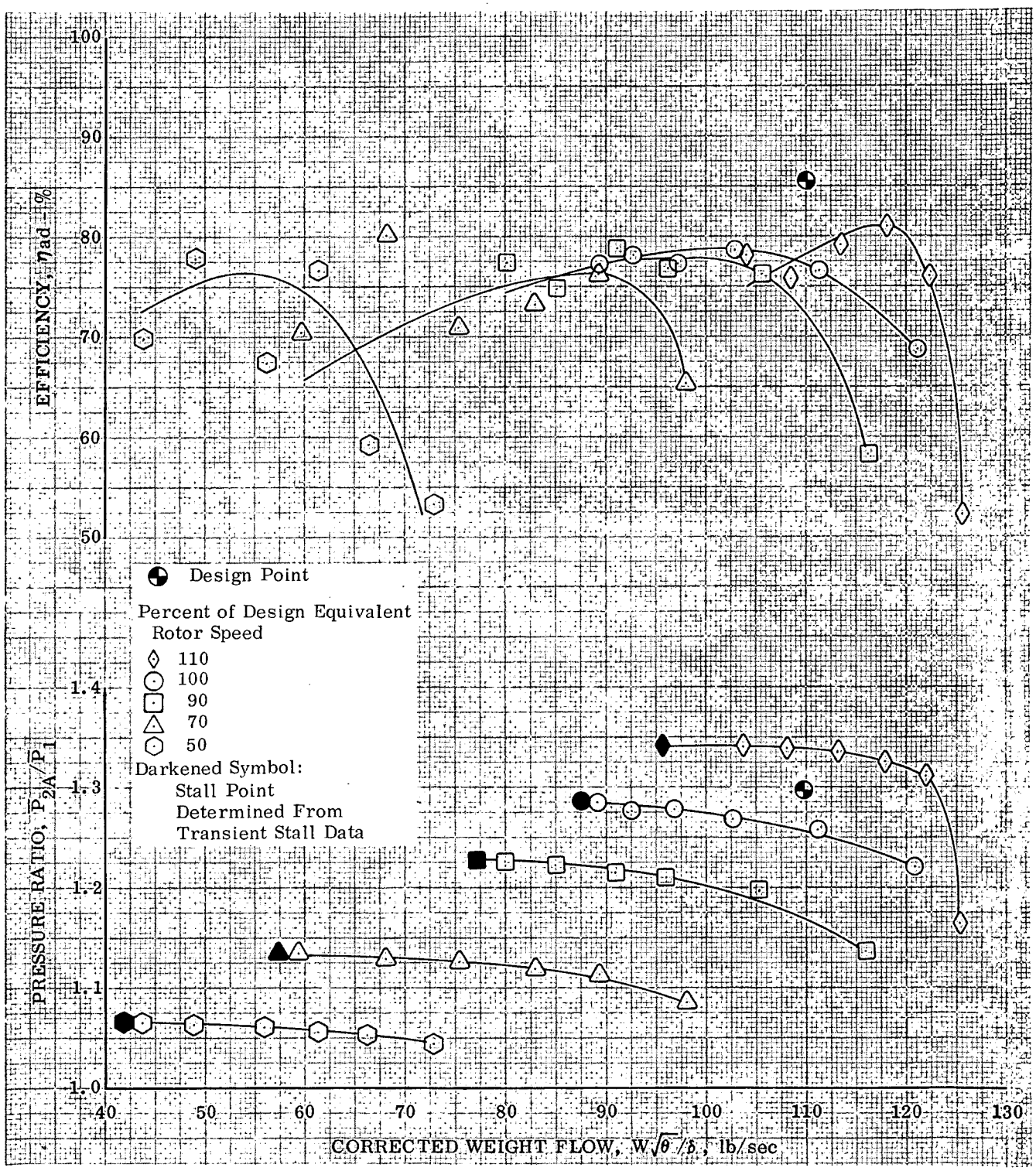


Figure 12. Overall Performance of Stage A DF 89282

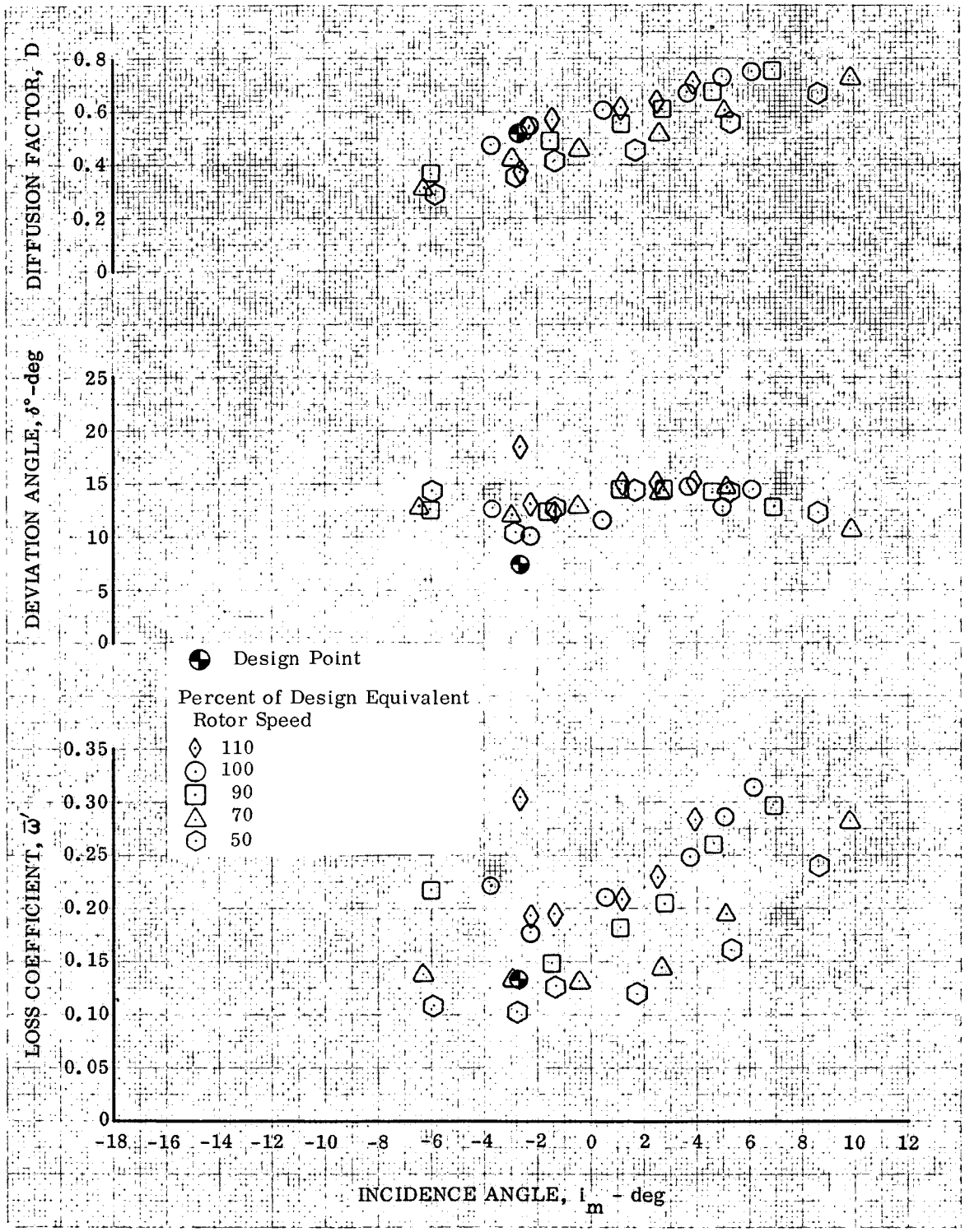


Figure 13a. Rotor A Blade Element Performance, 5% Span From Tip

DF 89283

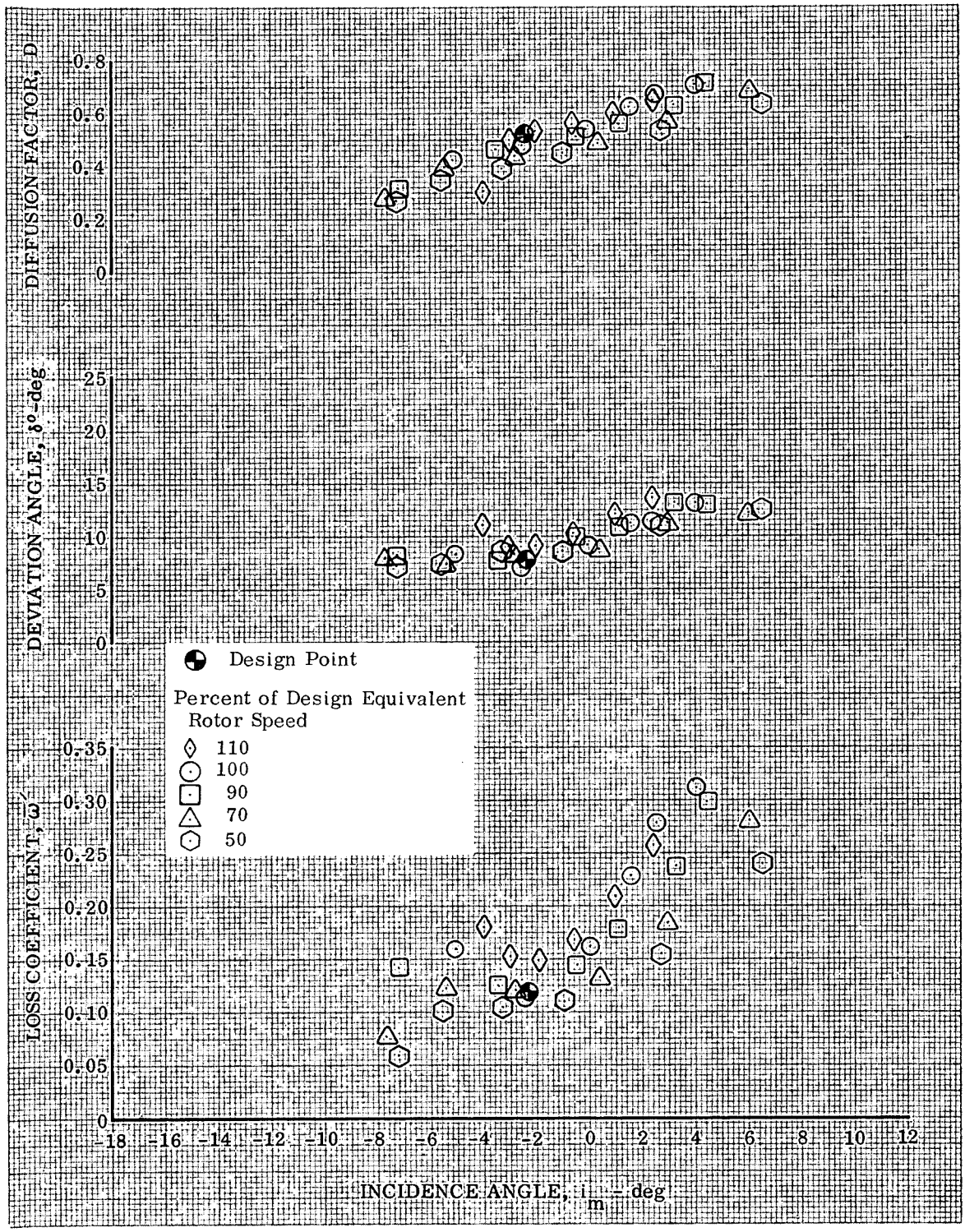


Figure 13b. Rotor A Blade Element Performance, 10% Span From Tip

DF 89284

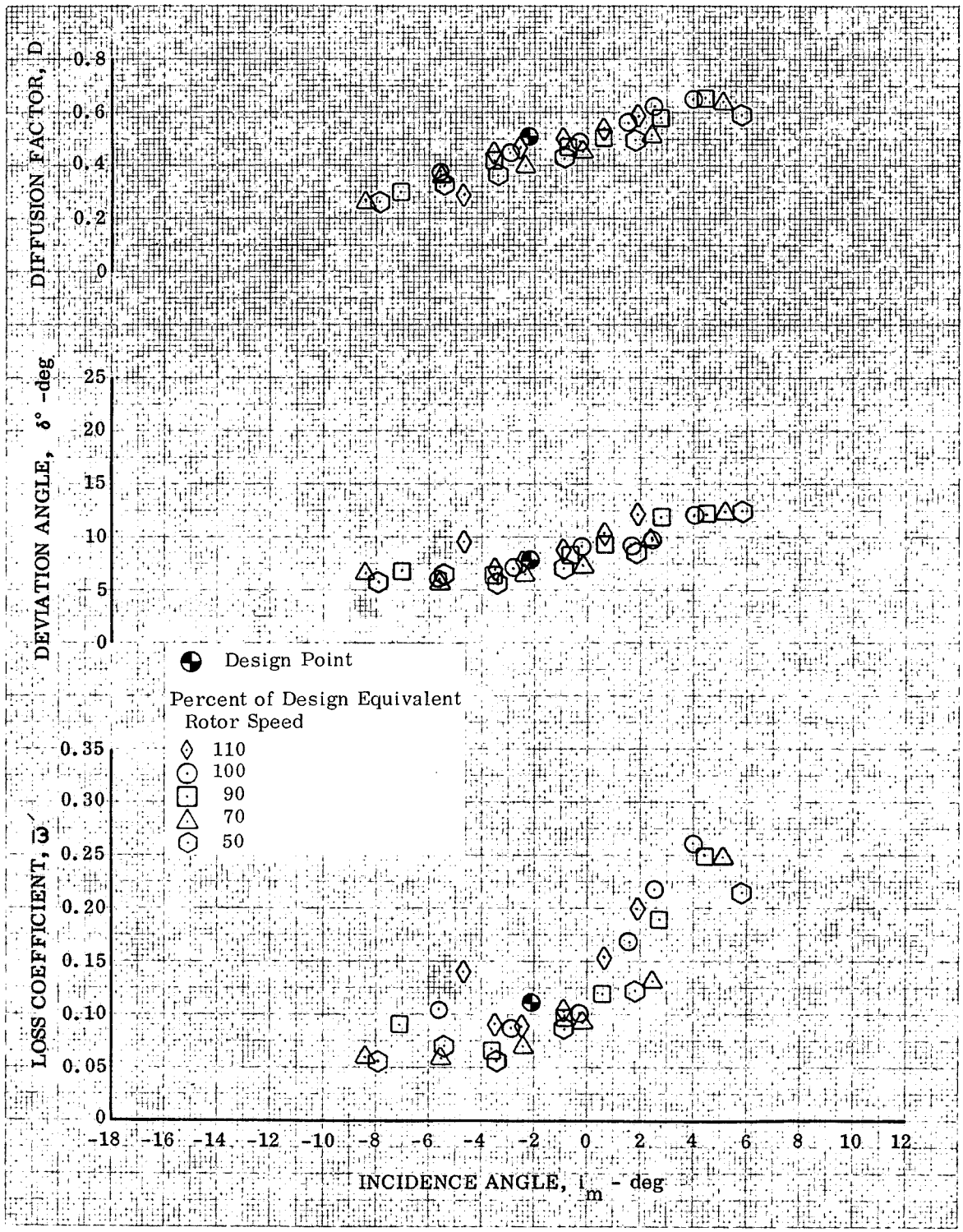


Figure 13c. Rotor A Blade Element Performance, 15% Span From Tip

DF 89285

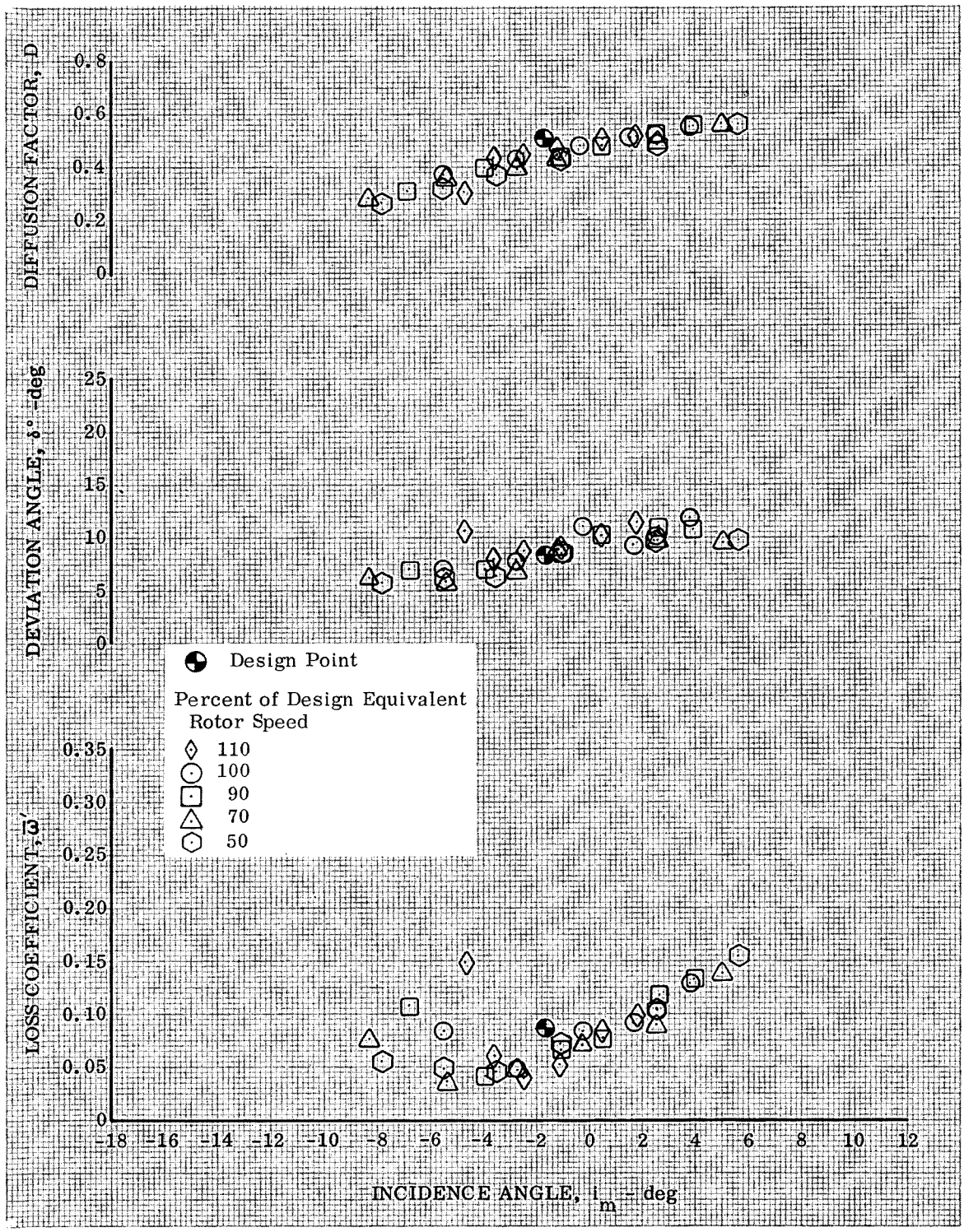


Figure 13d. Rotor A Blade Element Performance, 30% Span From Tip

DF 89286

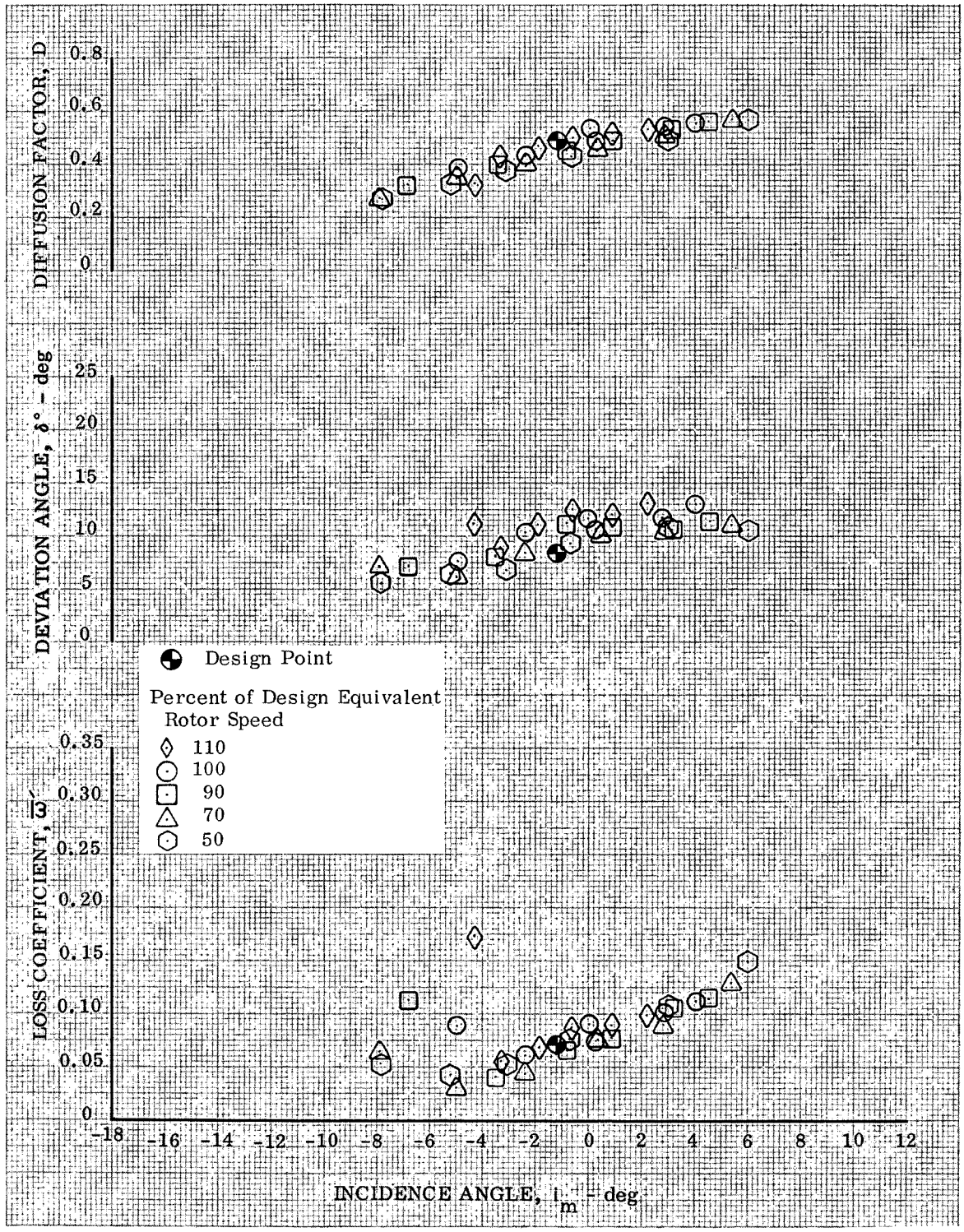


Figure 13e. Rotor A Blade Element Performance, 50% Span

DF 89287

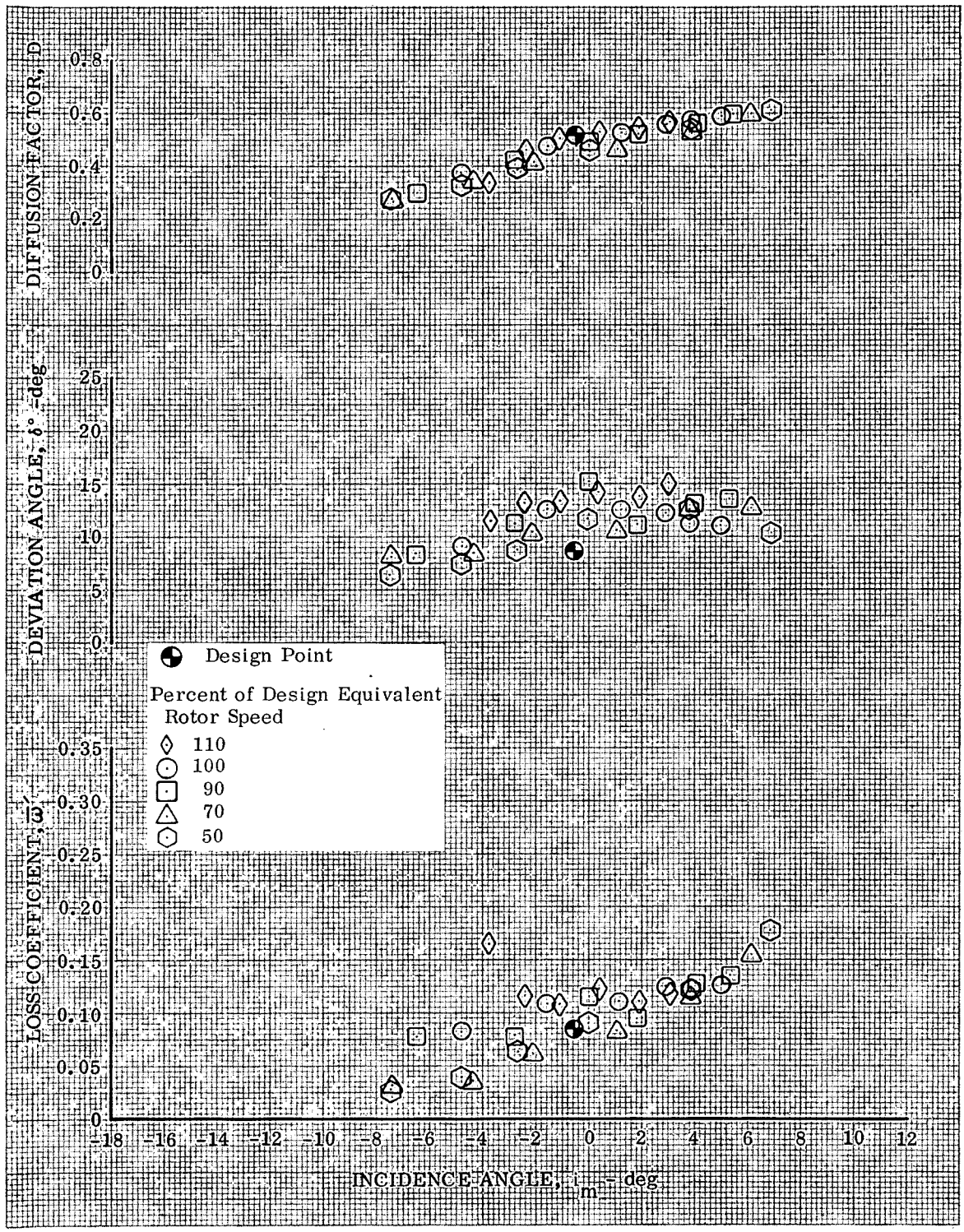


Figure 13f. Rotor A Blade Element Performance, 70% Span From Tip

DF 89288

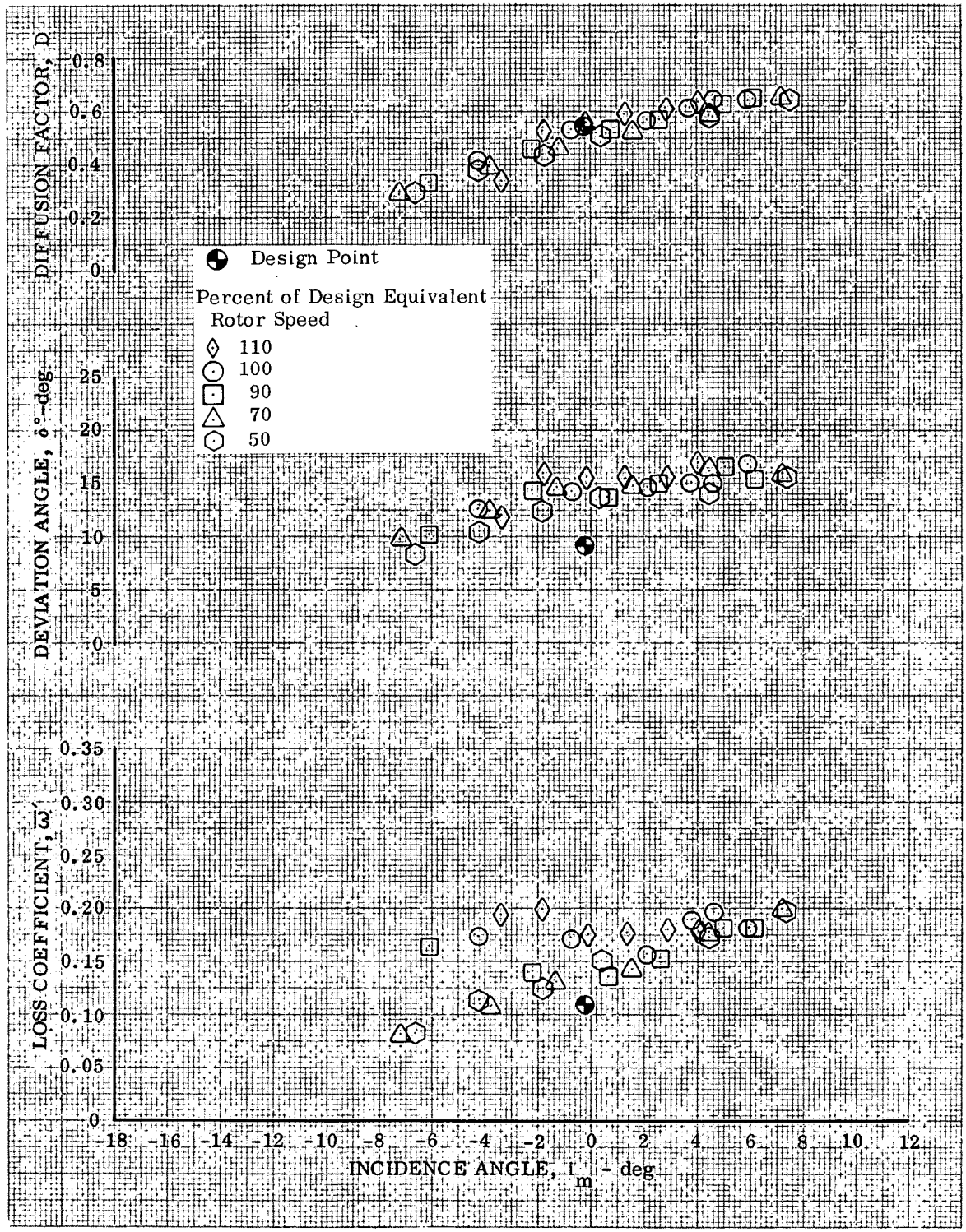


Figure 13g. Rotor A Blade Element Performance, 85% Span From Tip

DF 89289

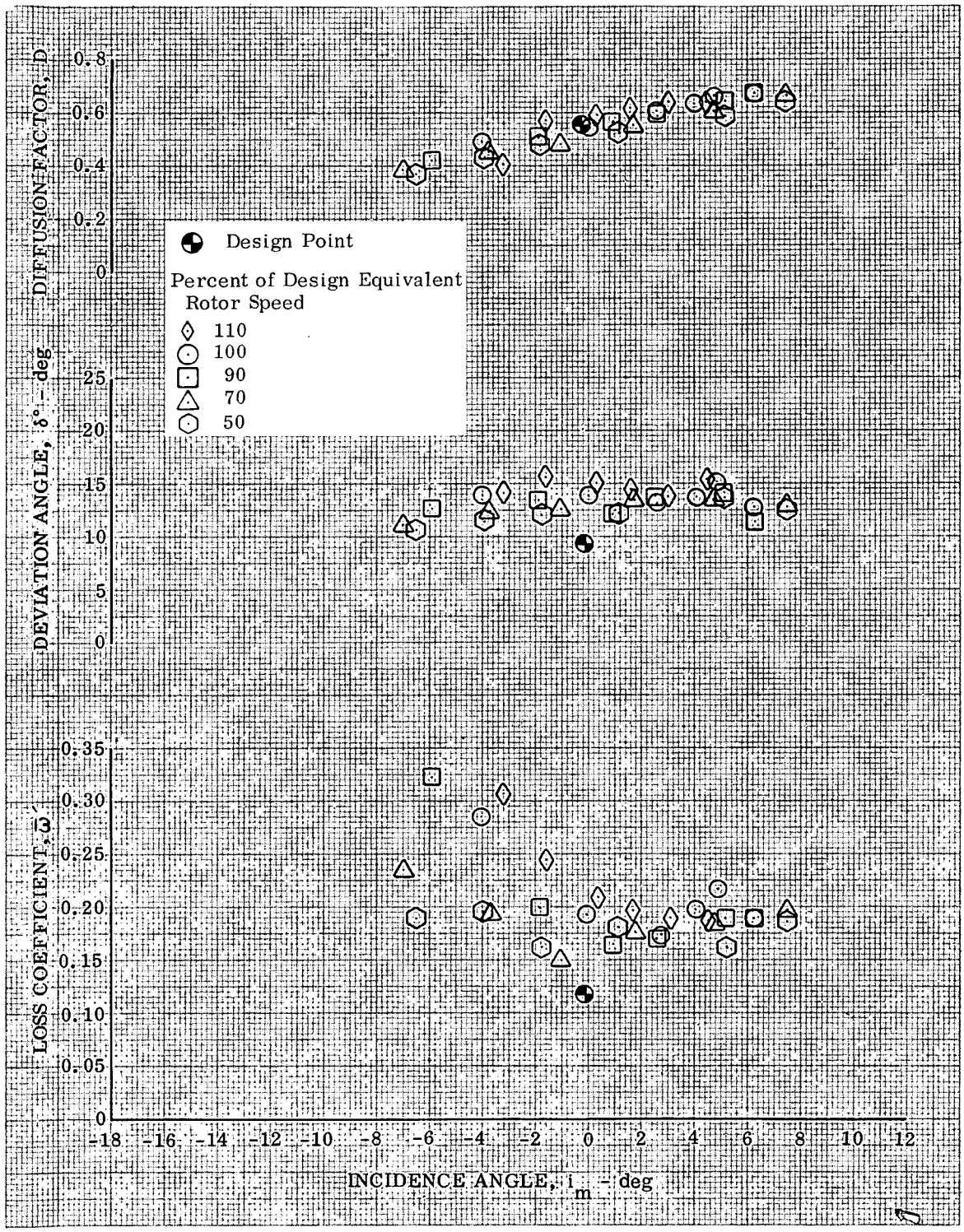


Figure 13h. Rotor A Blade Element Performance, 90% Span From Tip

DF 89290

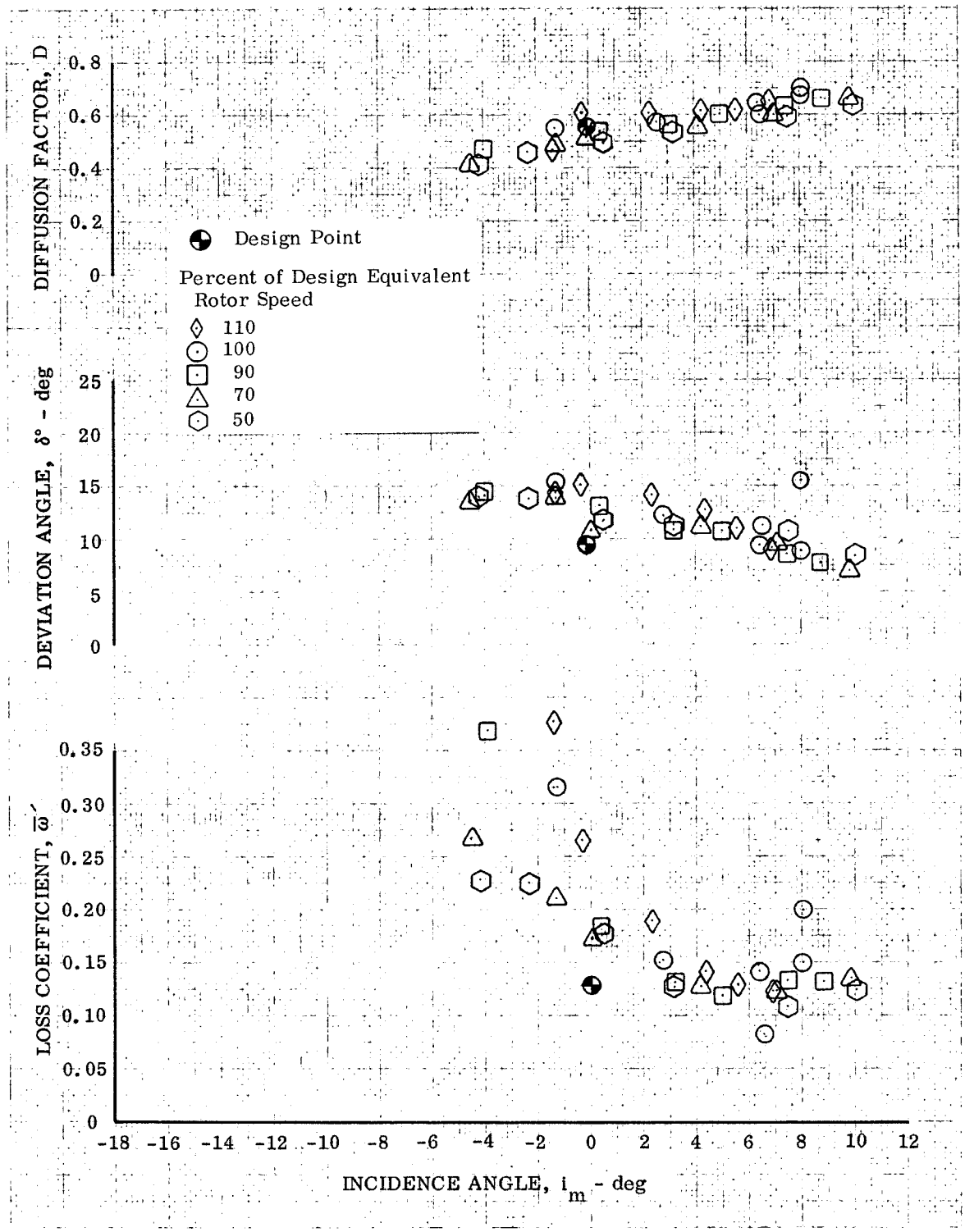


Figure 13i. Rotor A Blade Element Performance, 95% Span From Tip

DF 89291

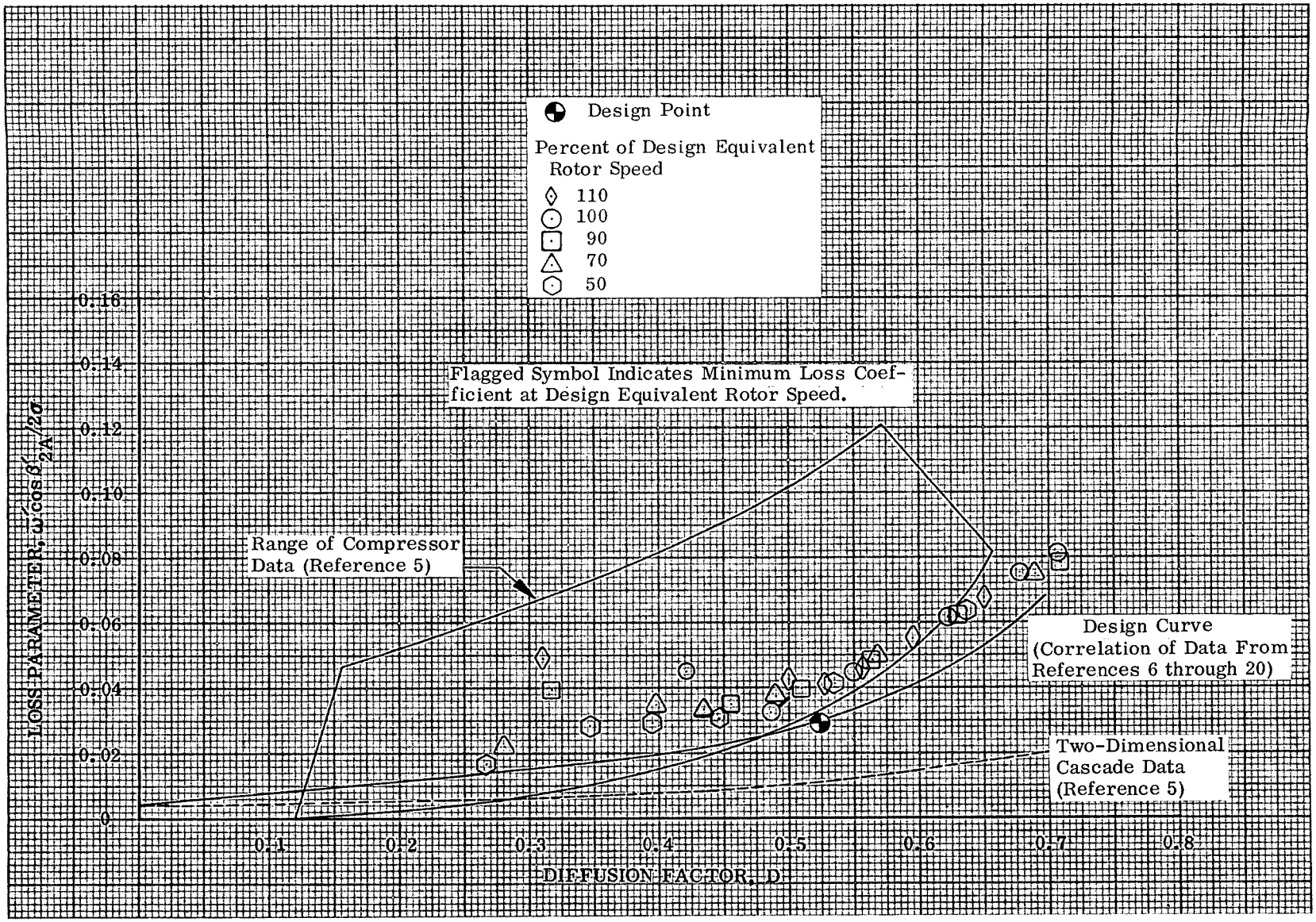


Figure 14a. Rotor A Loss Parameter vs Diffusion Factor, 10% Span From Tip

DF 89292

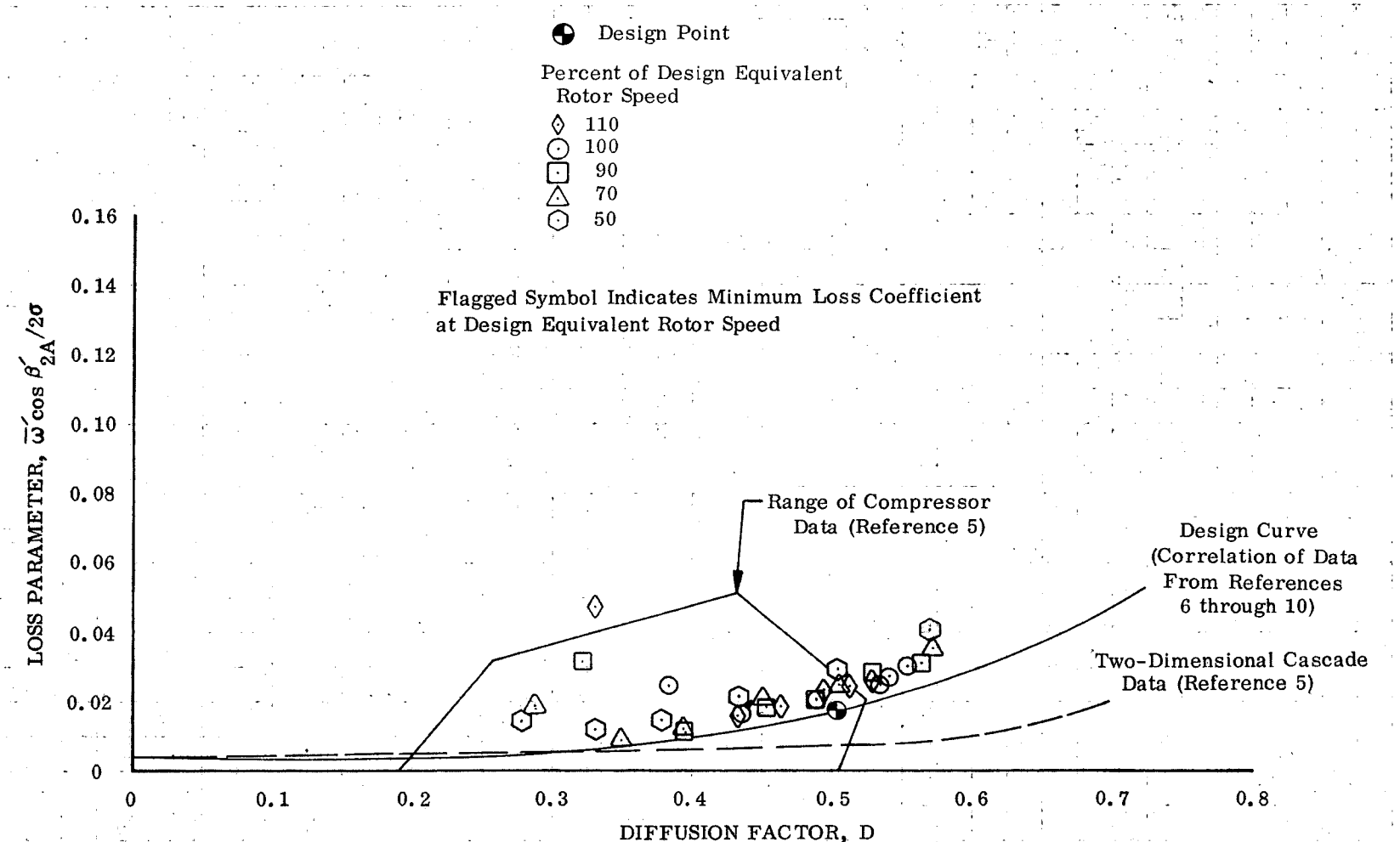


Figure 14b. Rotor A Loss Parameter vs Diffusion Factor, 50% Span

DF 89293

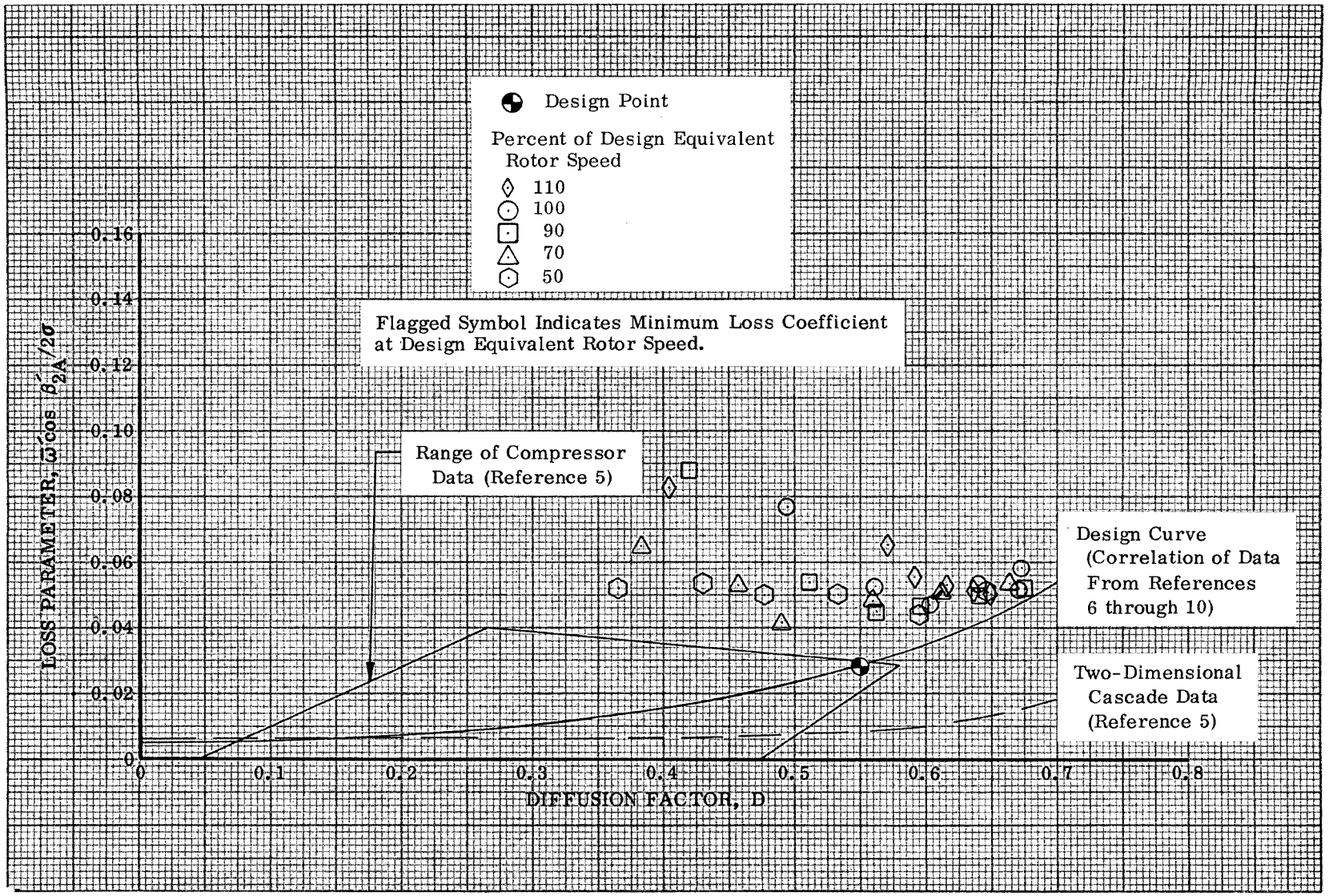


Figure 14c. Rotor A Loss Parameter vs Diffusion Factor, 90% Span From Tip

DF 89294

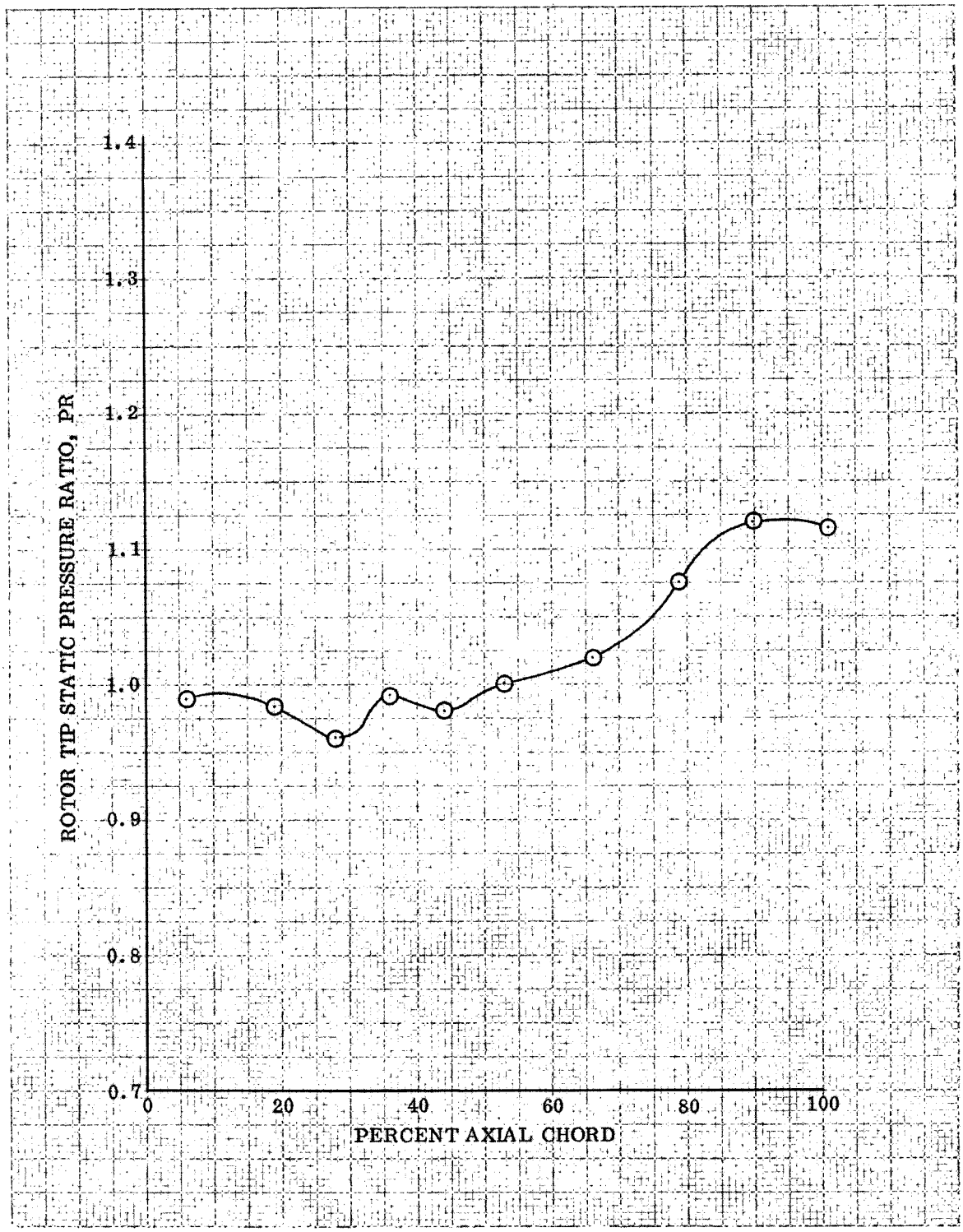


Figure 15a. Rotor Tip Static Pressure Ratio at Design Equivalent Rotor Speed, Corrected Weight Flow = 121.01 lb/sec

DF 89295

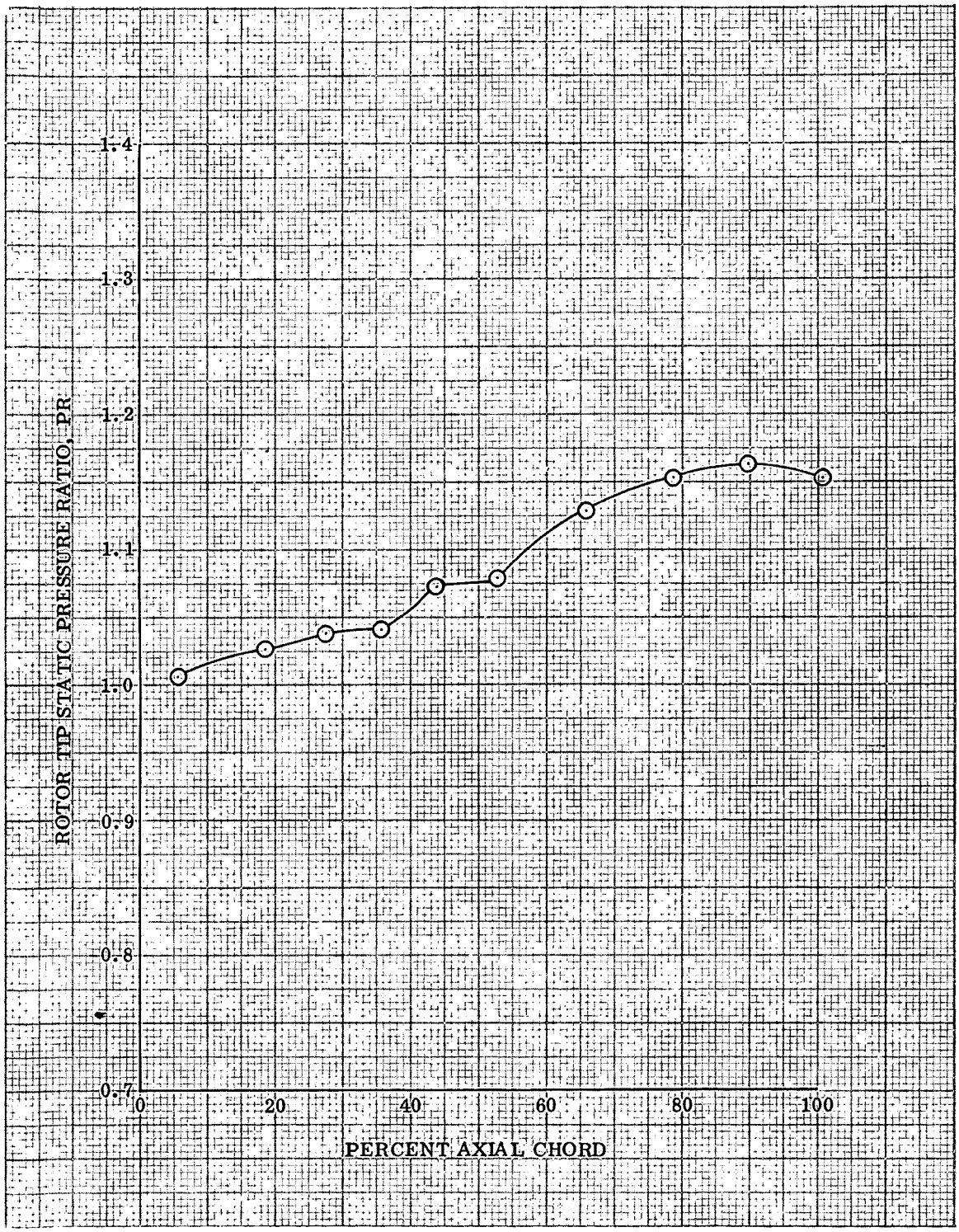


Figure 15b. Rotor Tip Static Pressure Ratio at Design Equivalent Rotor Speed, Corrected Weight Flow = 111.27 lb/sec

DF 89296

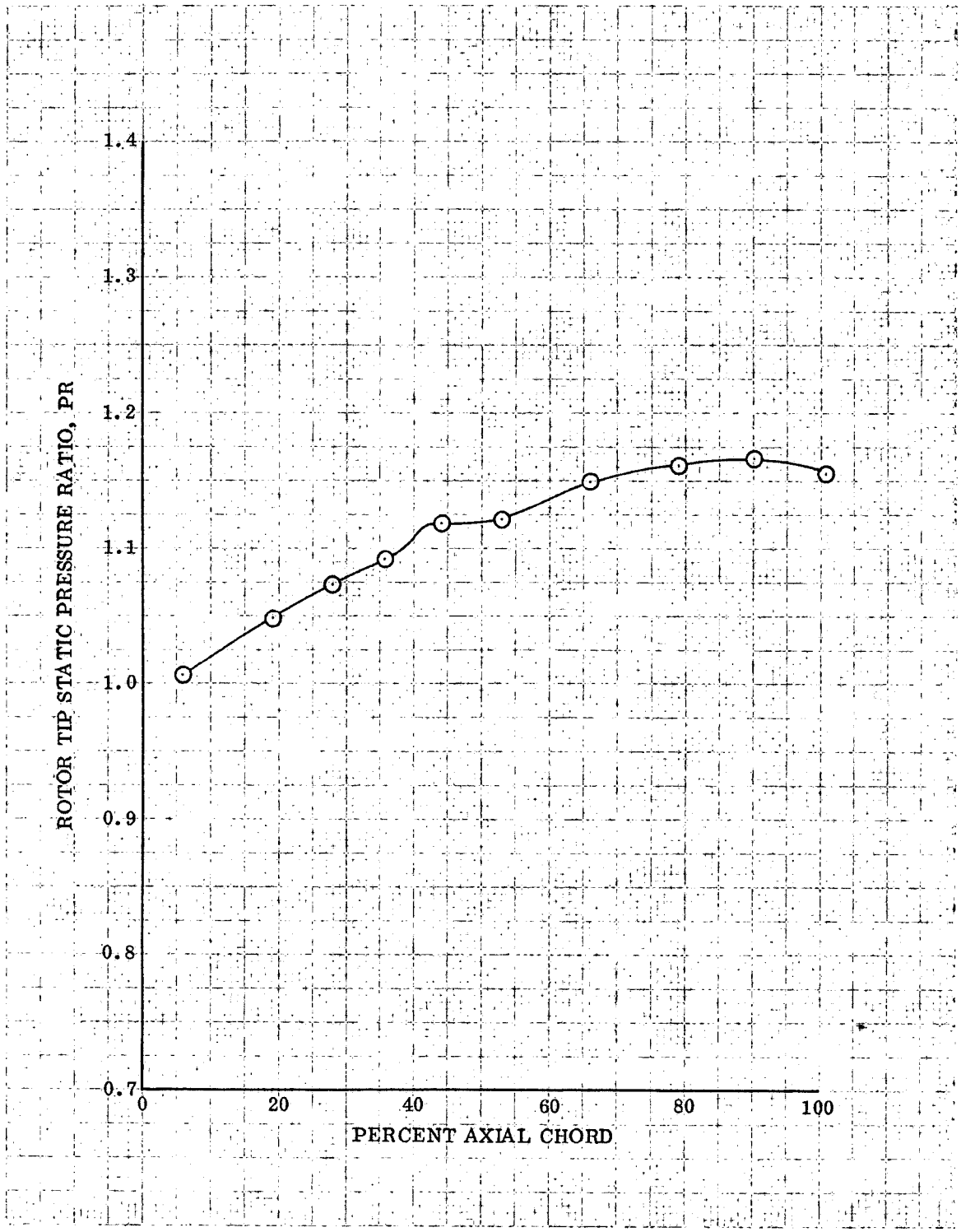


Figure 15c. Rotor Tip Static Pressure Ratio at Design Equivalent Rotor Speed, Corrected Weight Flow = 102.81 lb/sec

DF 89297

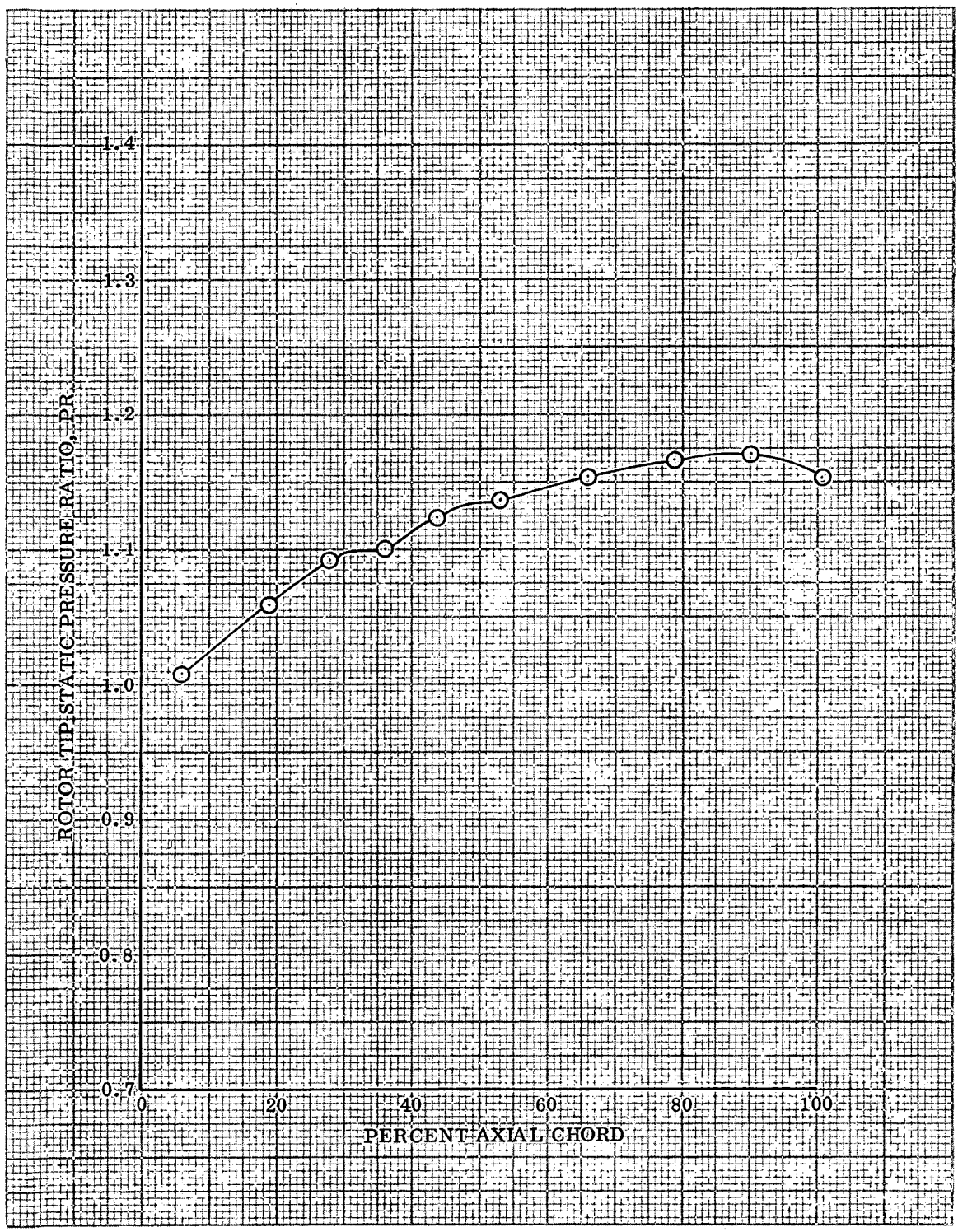


Figure 15d. Rotor Tip Static Pressure Ratio at Design Equivalent Rotor Speed, Corrected Weight Flow = 97.00 lb/sec

DF 89298

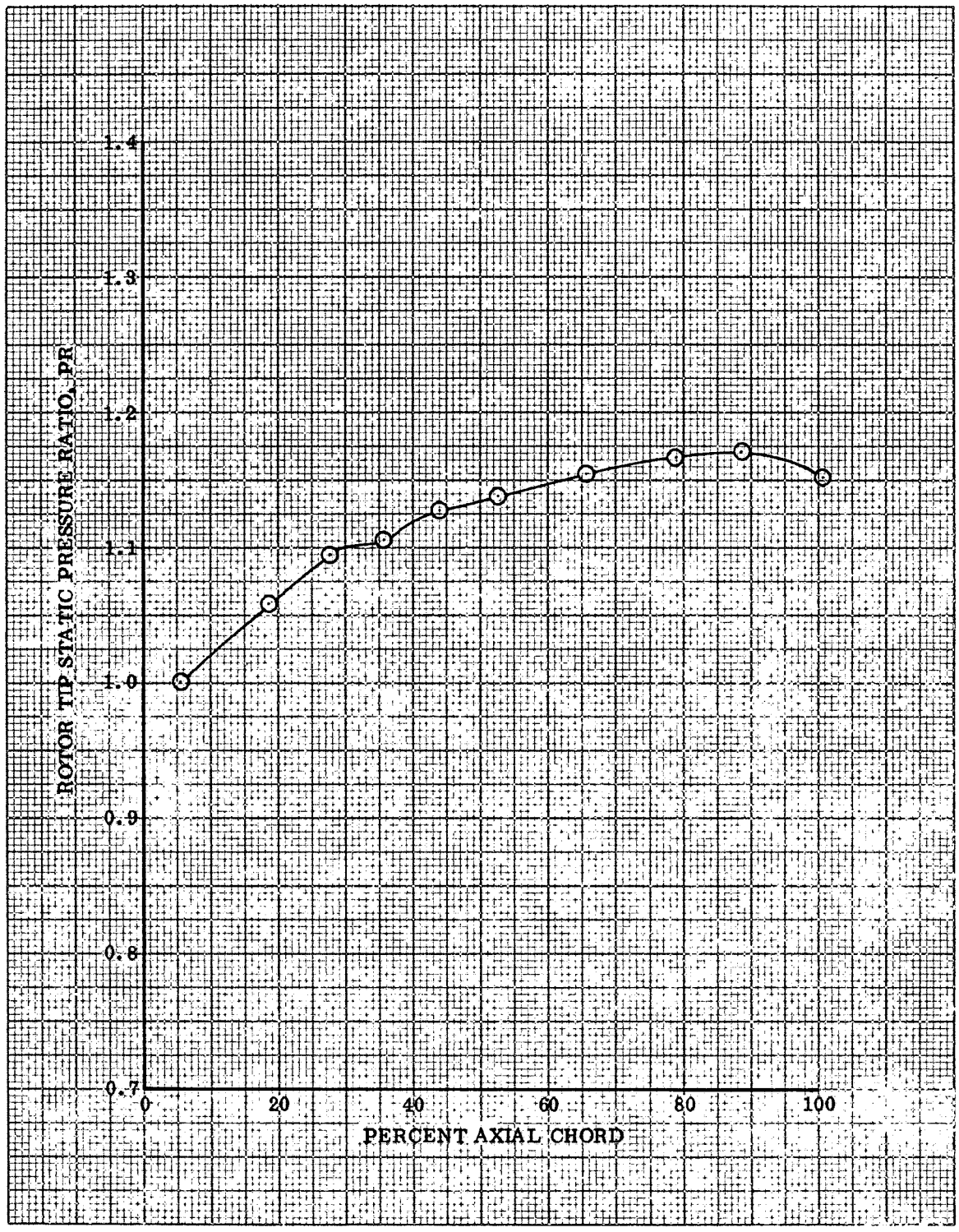


Figure 15e. Rotor Tip Static Pressure Ratio at Design Equivalent Rotor Speed, Corrected Weight Flow = 92.70 lb/sec

DF 89299

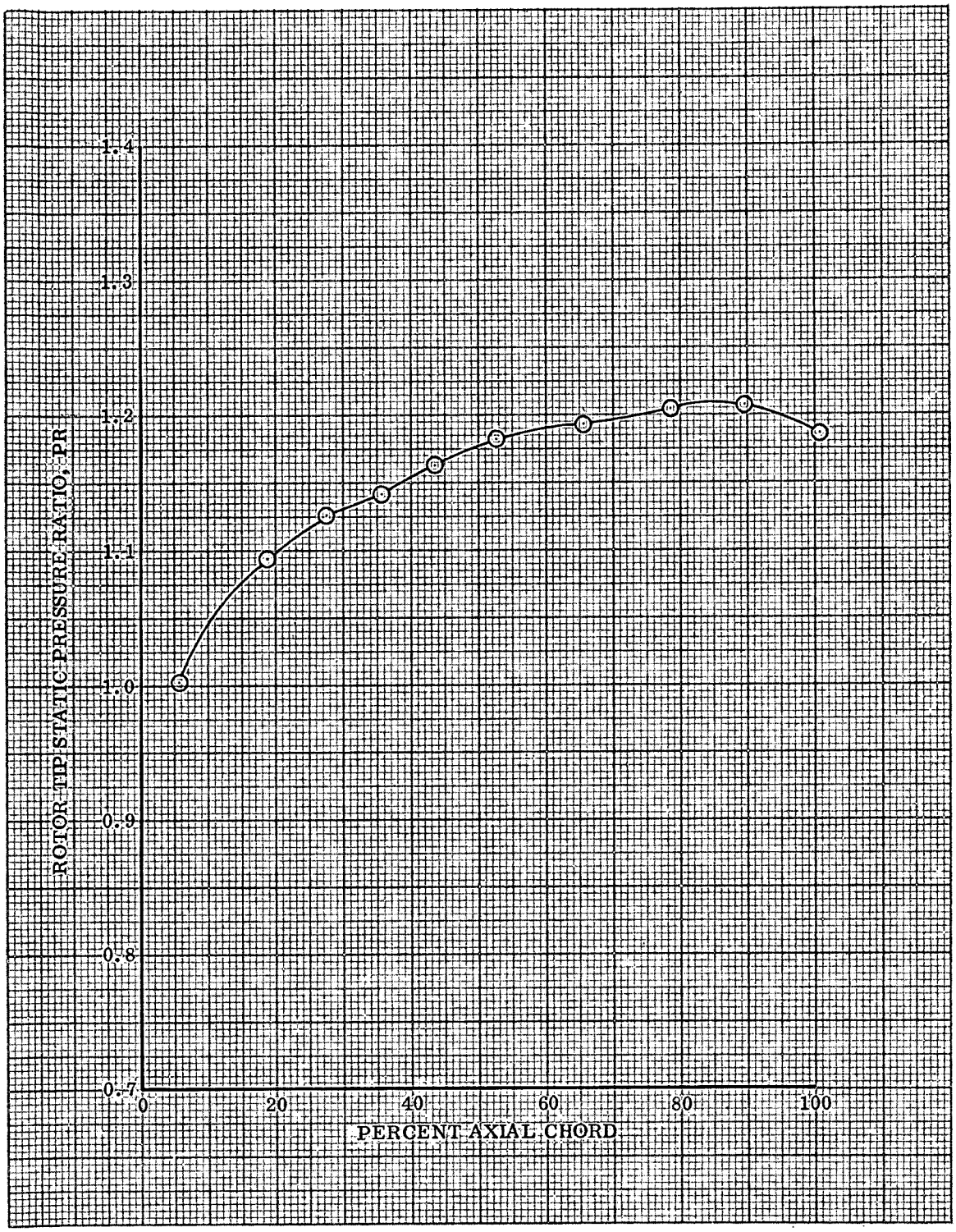


Figure 15f. Rotor Tip Static Pressure Ratio at Design Equivalent Rotor Speed, Corrected Weight Flow = 89.38 lb/sec

DF 89300

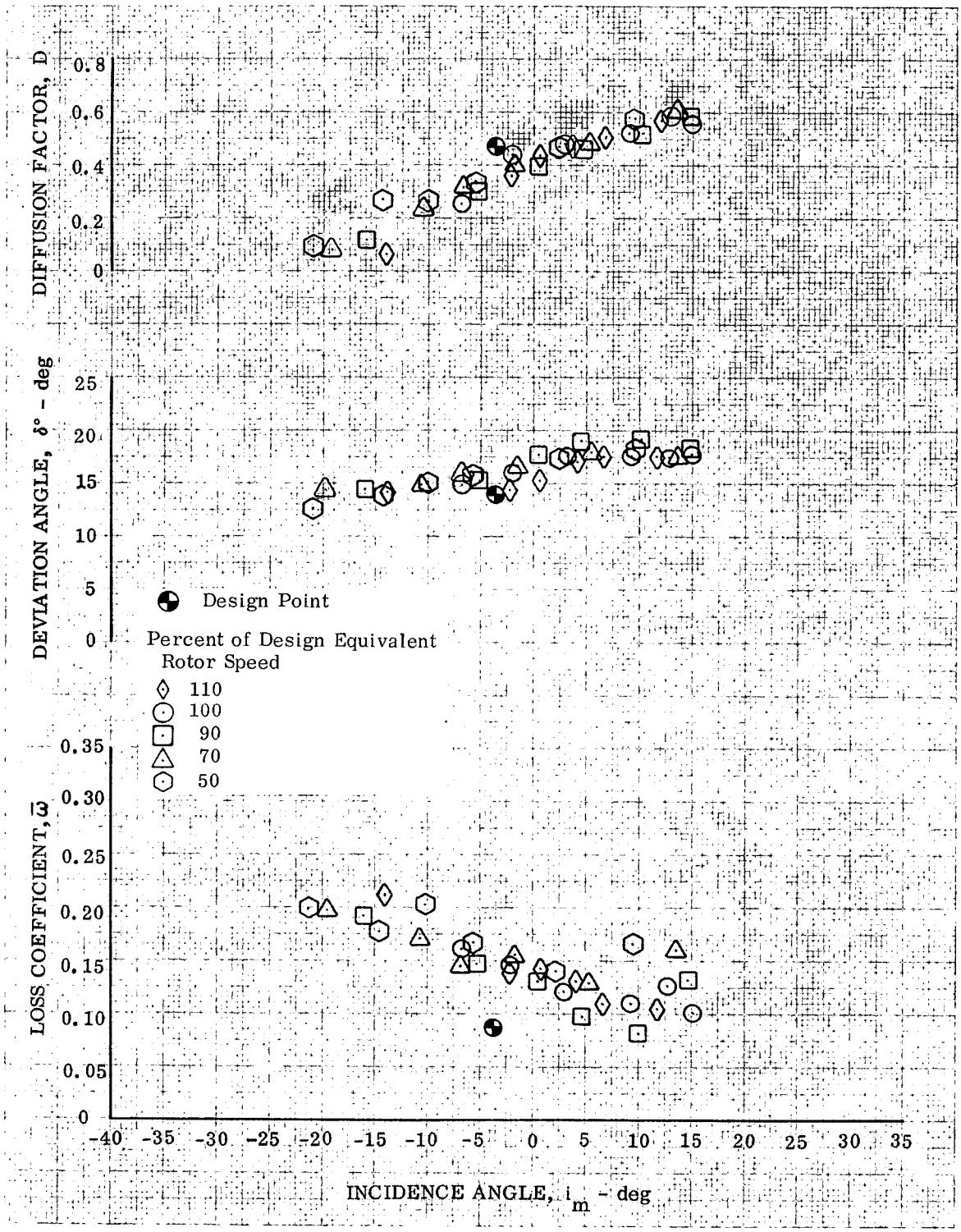


Figure 16a. Stator A Blade Element Performance, 5% Span From Tip

DF 89301

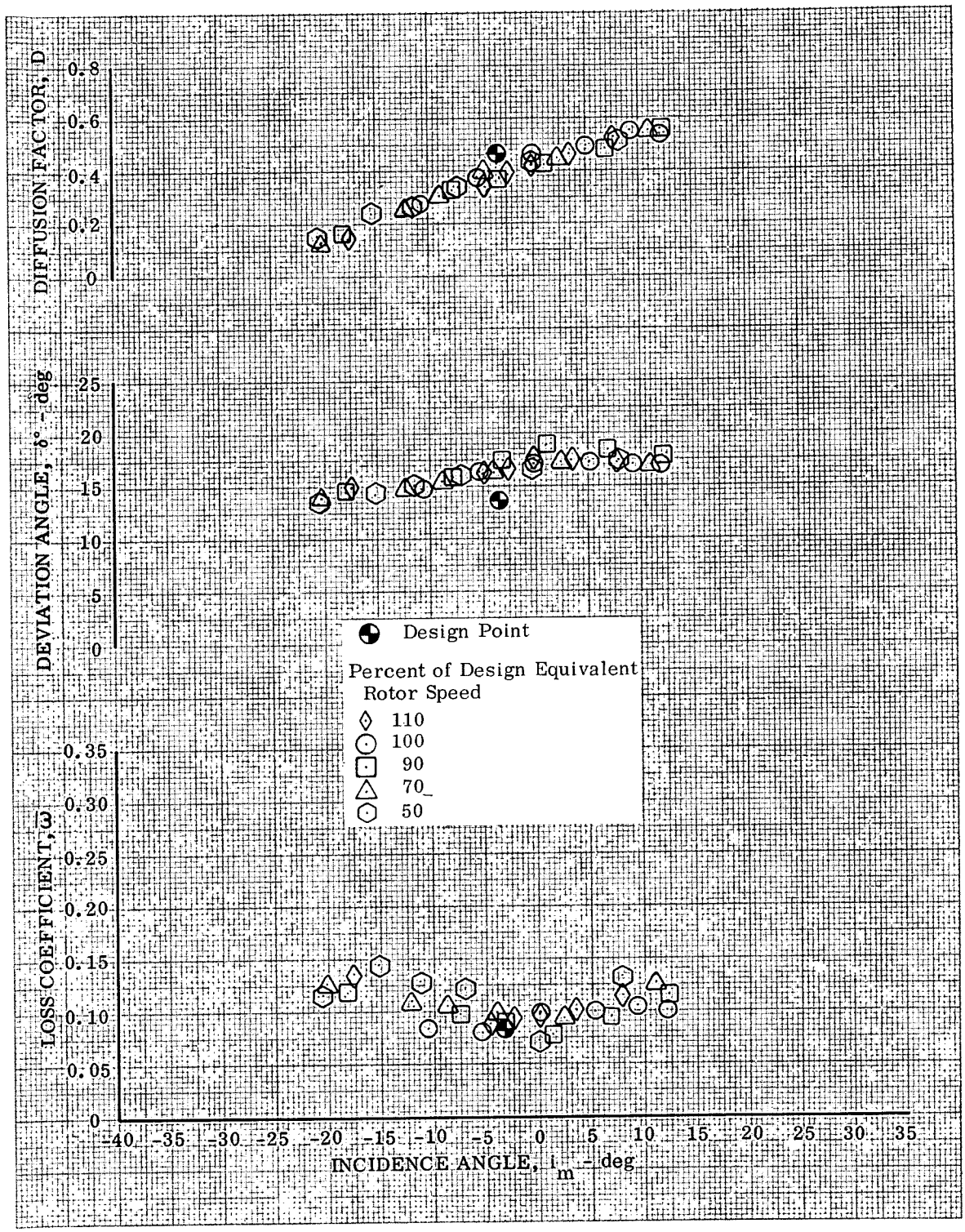


Figure 16b. Stator A Blade Element Performance, 10% Span From Tip

DF 89302

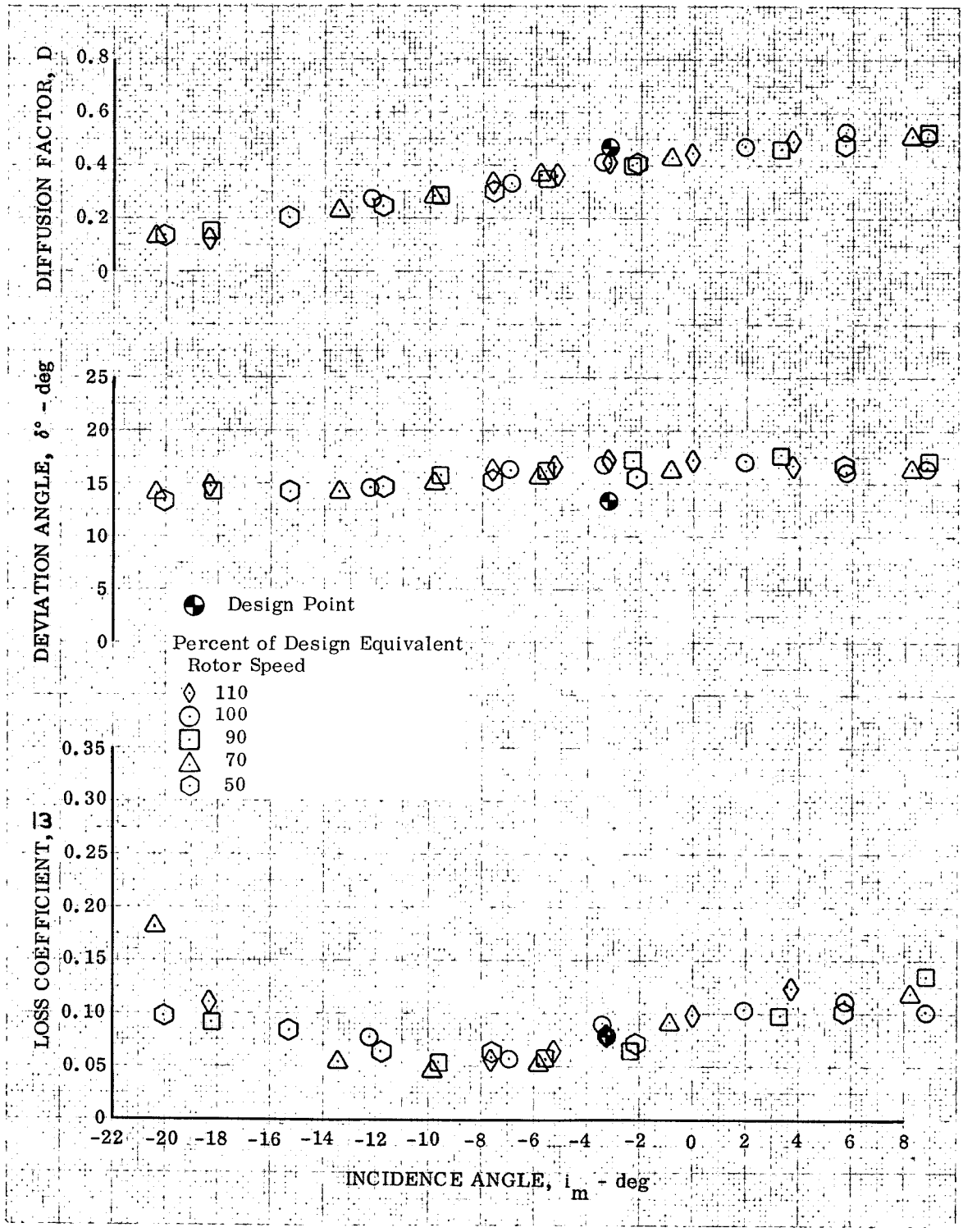


Figure 16c. Stator A Blade Element Performance, 15% Span From Tip

DF 89303

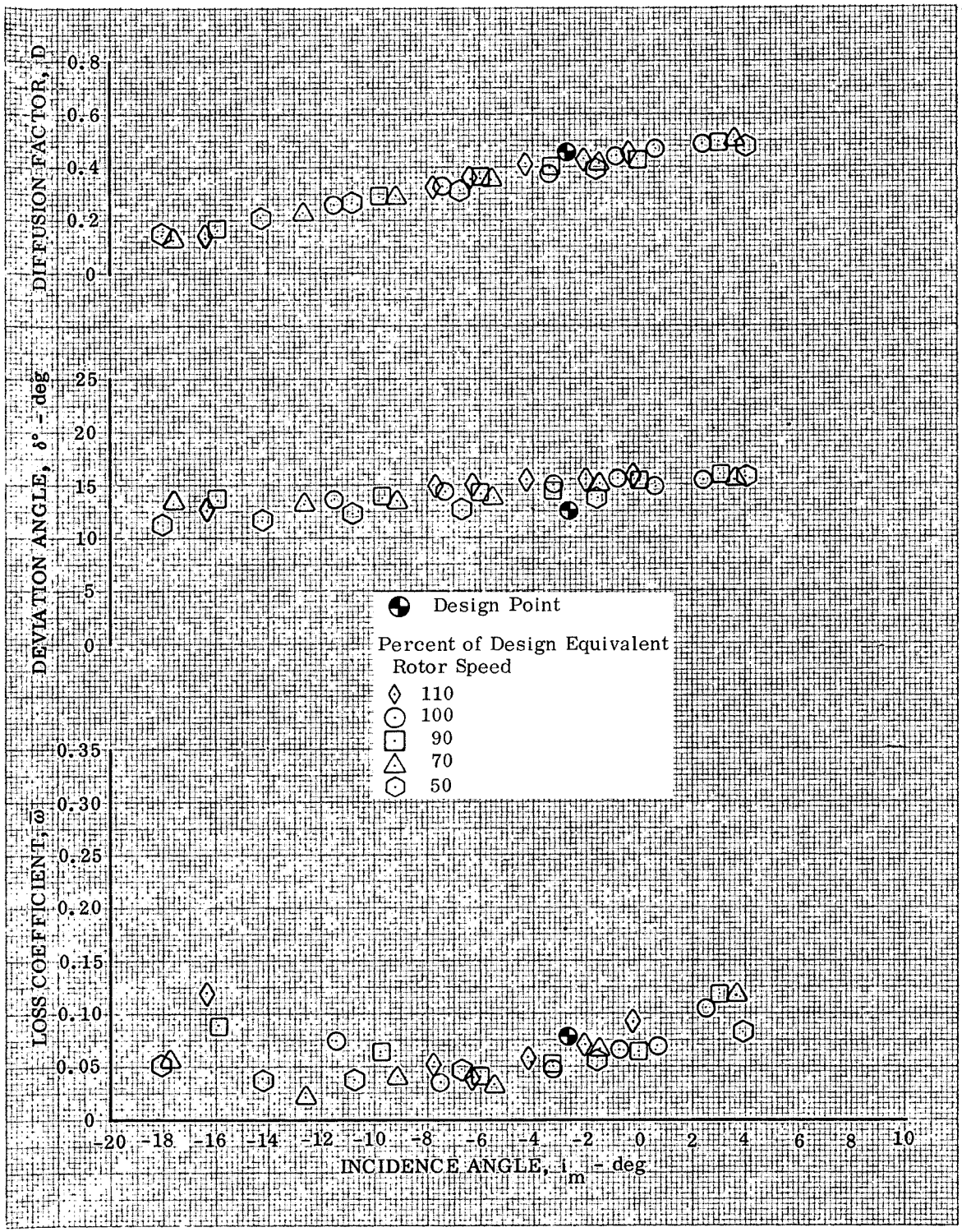


Figure 16d. Stator A Blade Element Performance, 30% Span From Tip

DF 89304

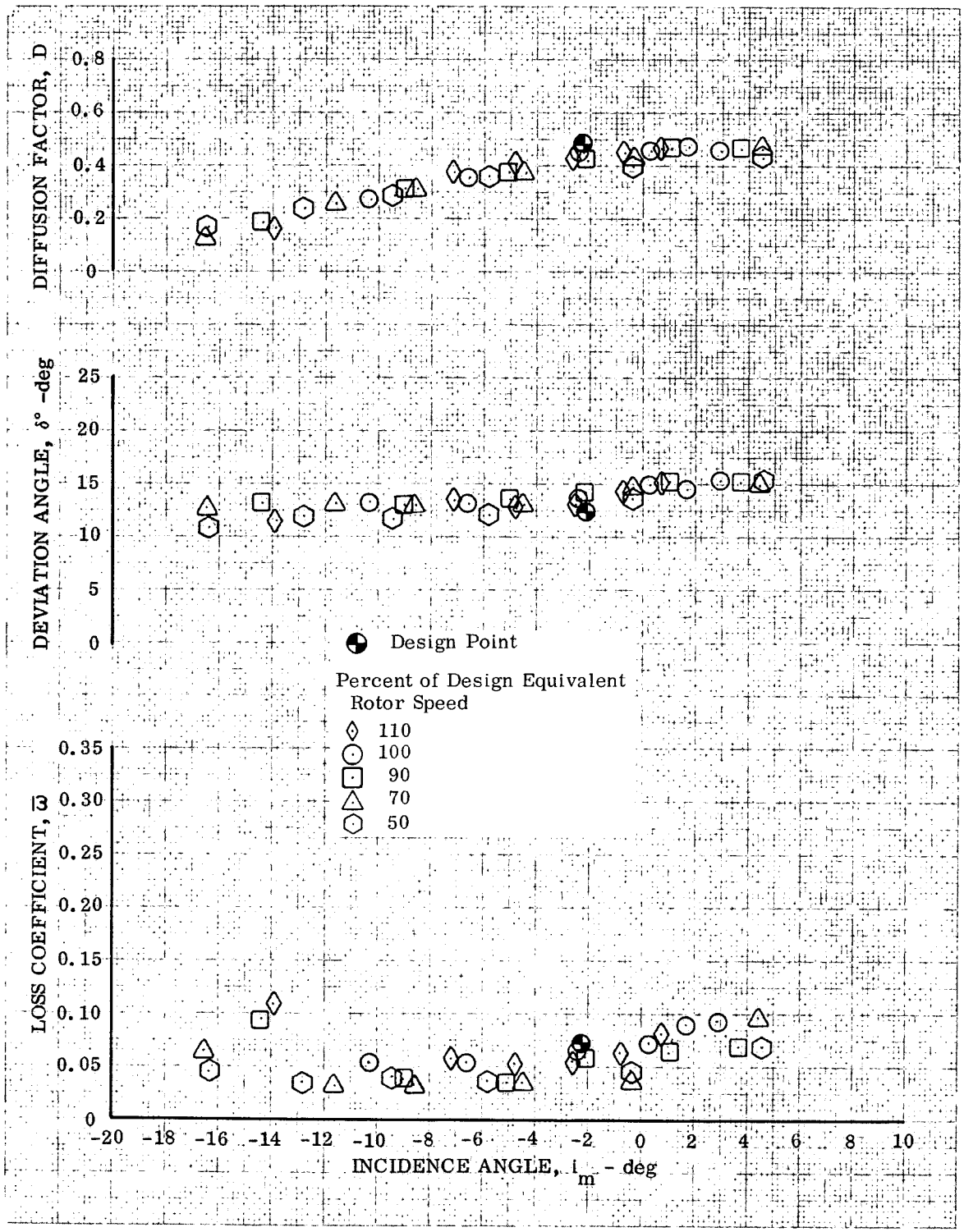


Figure 16e. Stator A Blade Element Performance, 50% Span

DF 89305

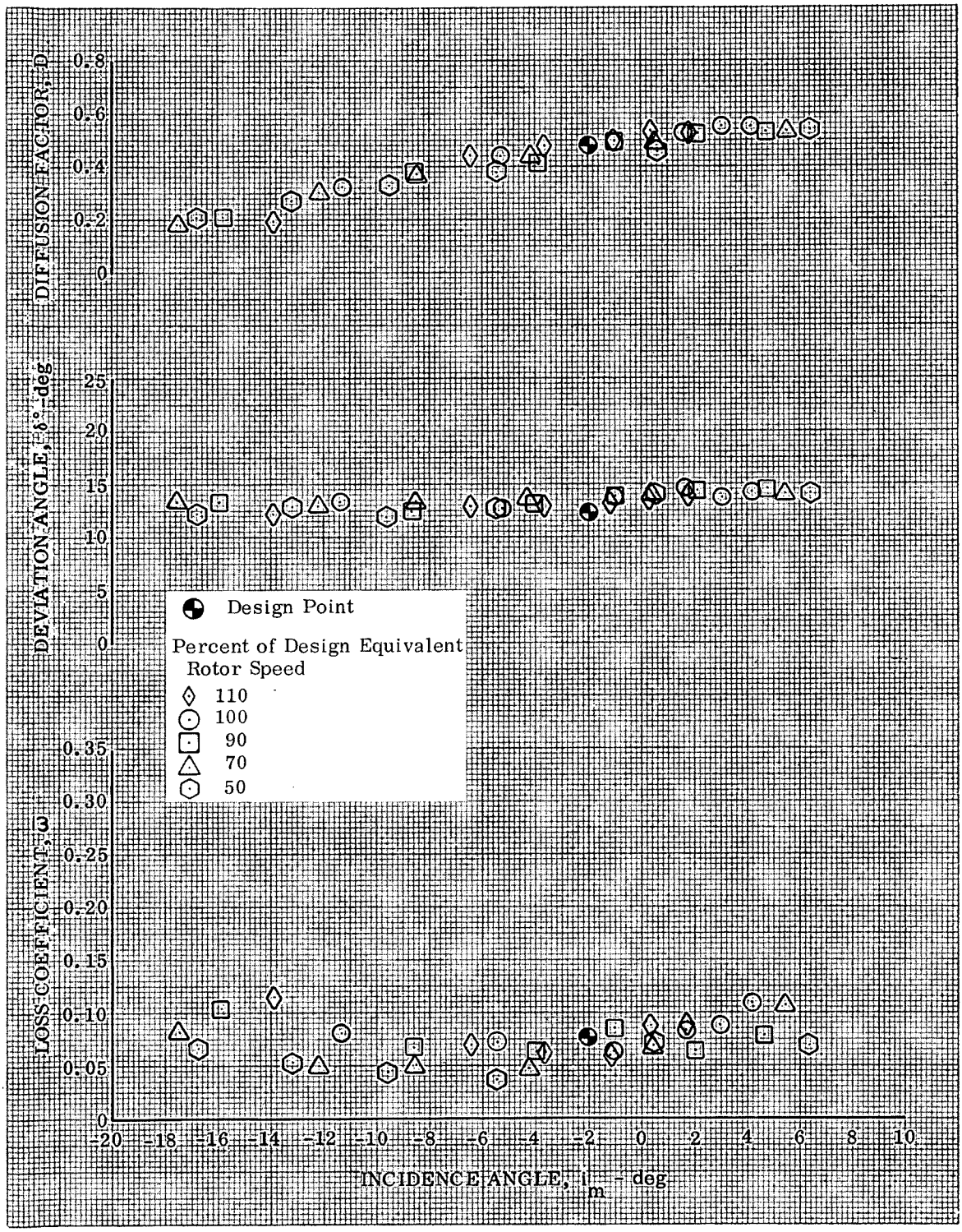


Figure 16f. Stator A Blade Element Performance, 70% Span From Tip

DF 89306

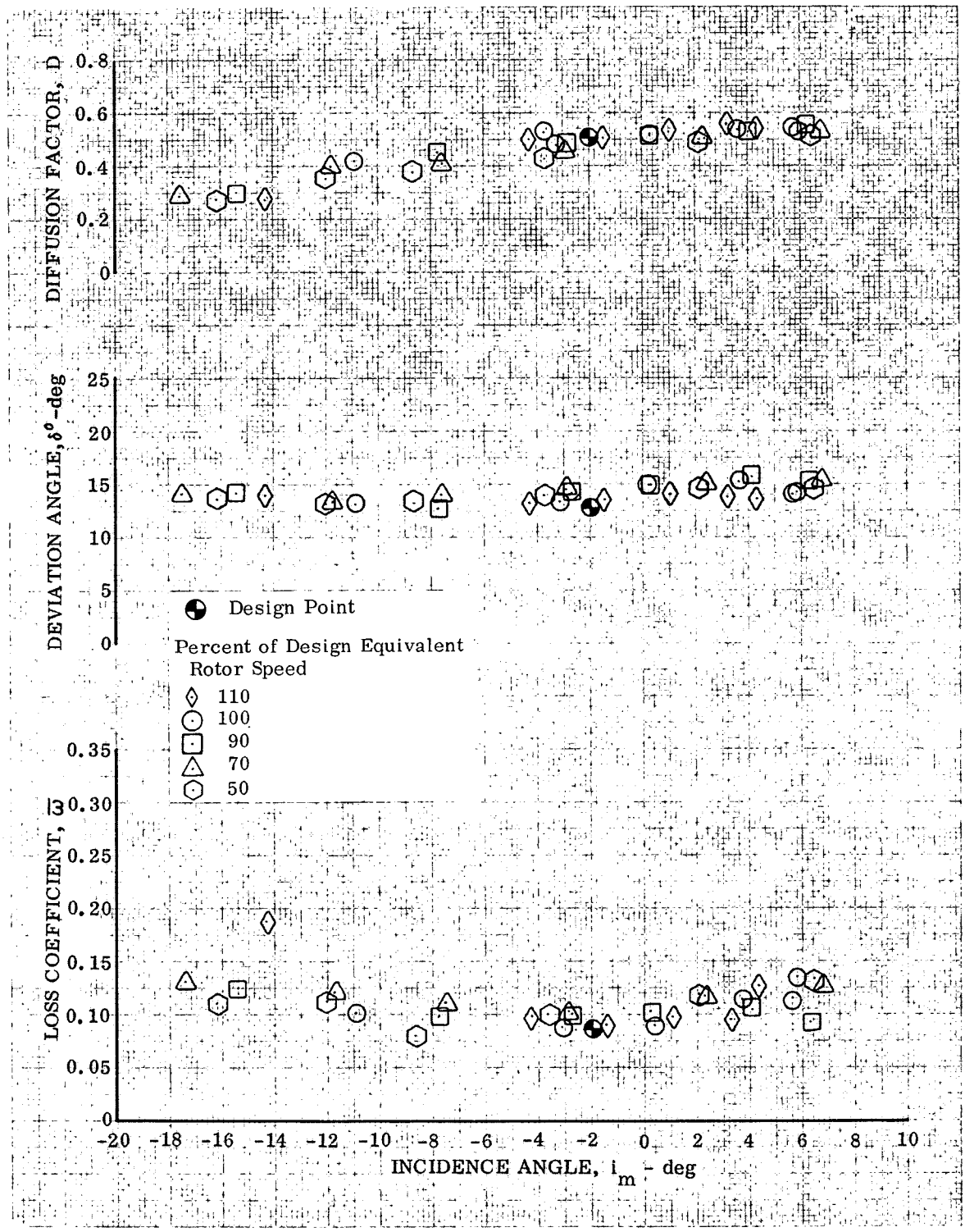


Figure 16g. Stator A Blade Element Performance, 85% Span From Tip

DF 89307

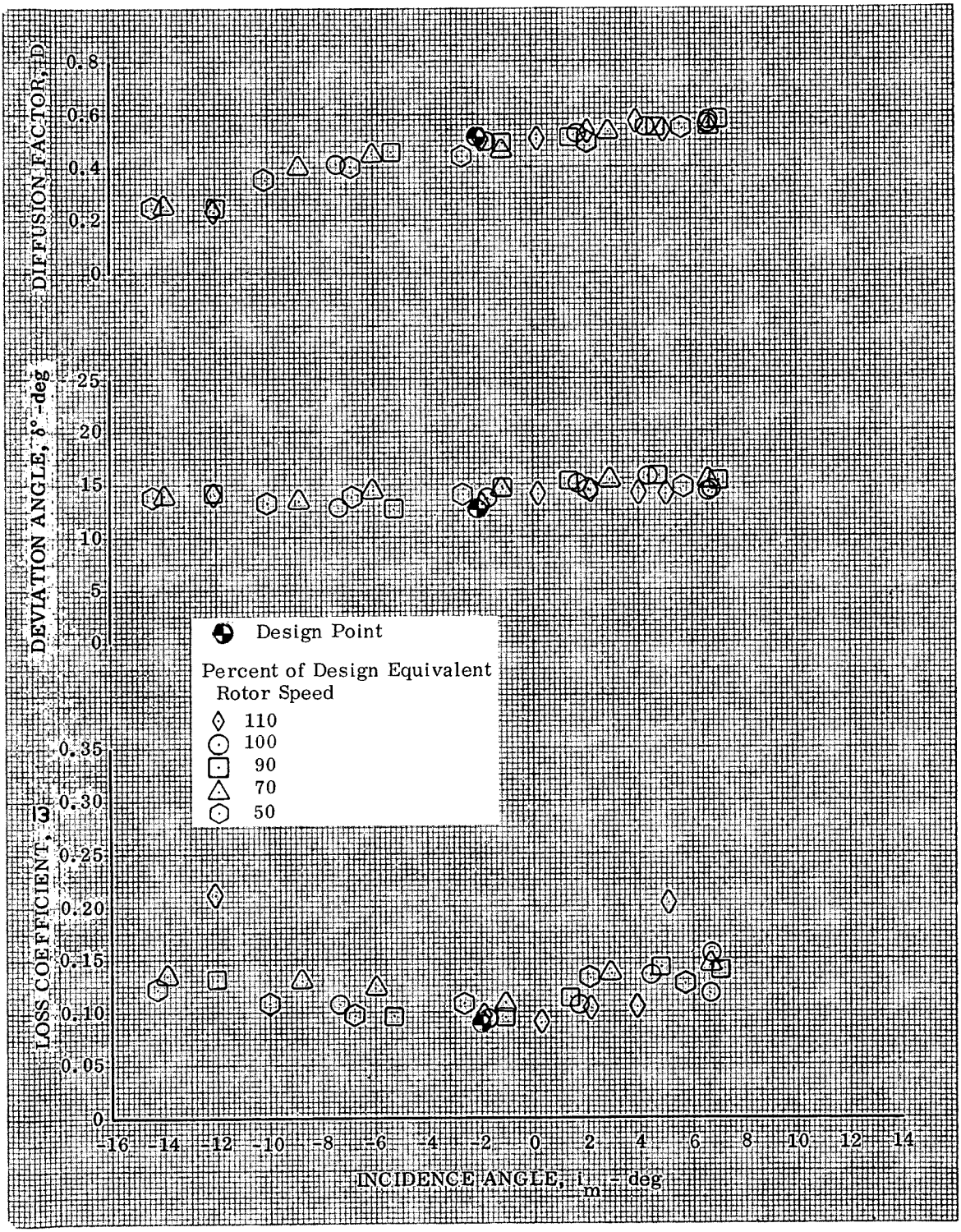


Figure 16h. Stator A Blade Element Performance, 90% Span From Tip

DF 89308

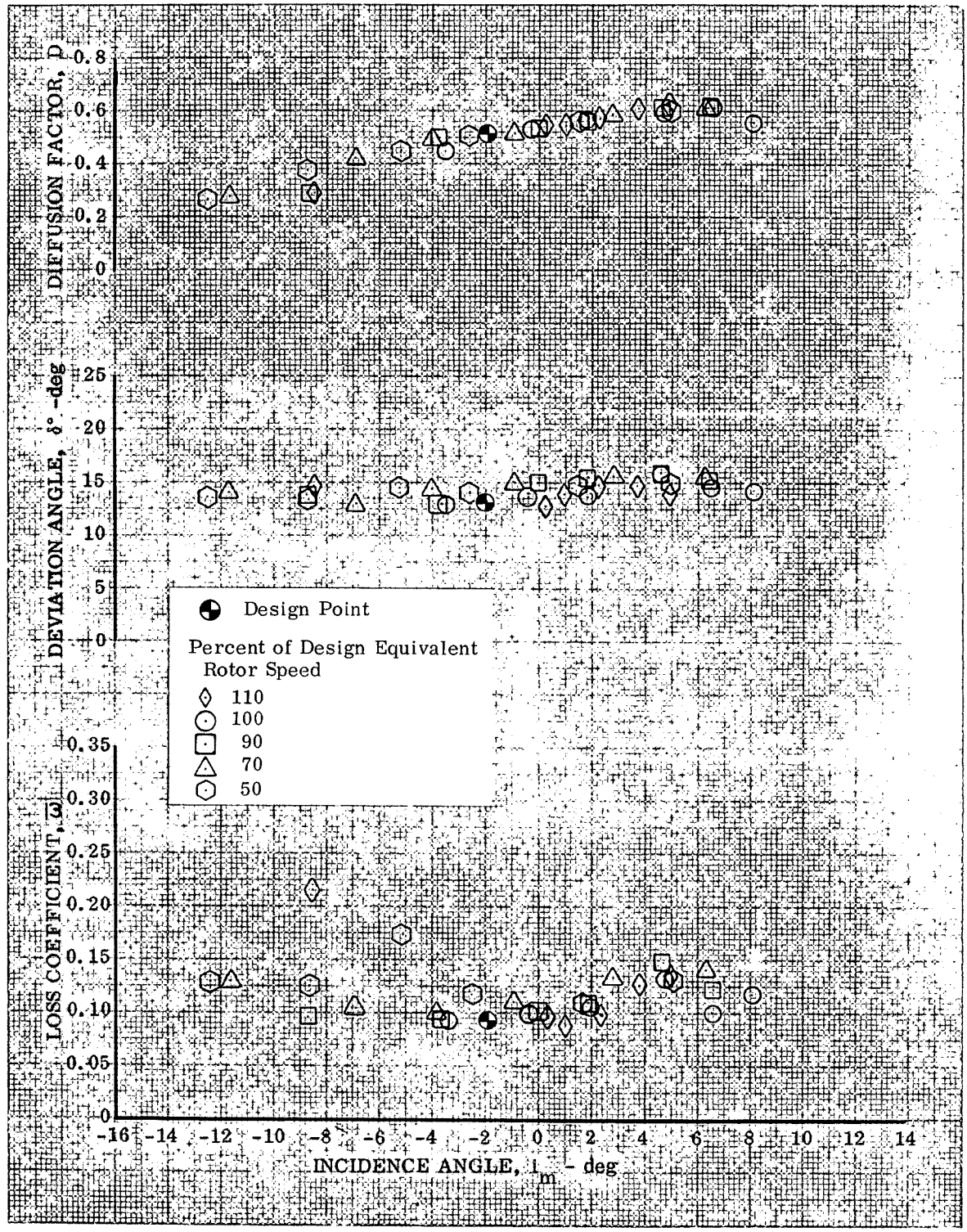


Figure 16i. Stator A Blade Element Performance, 95% Span From Tip

DF 89309

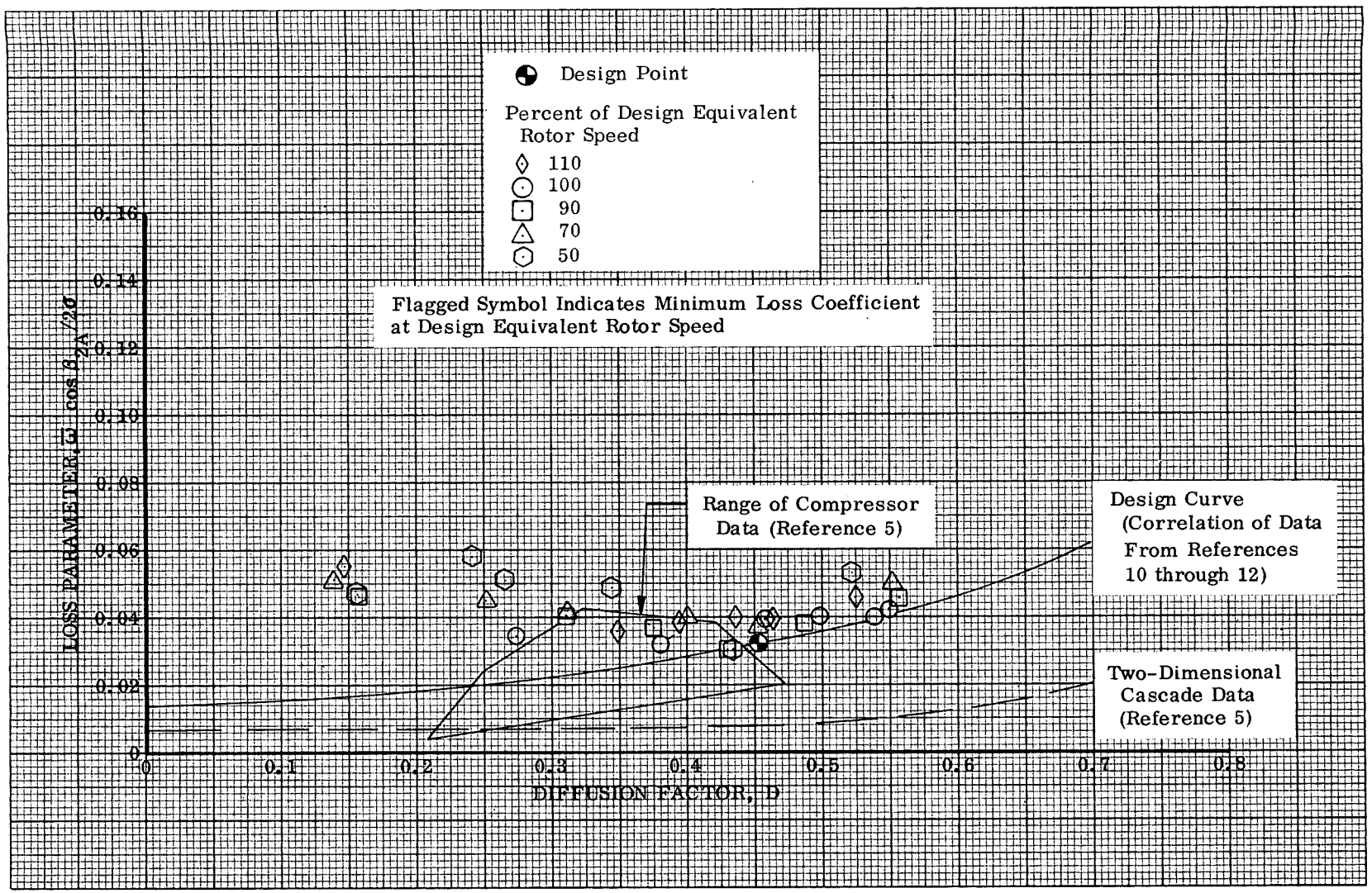


Figure 17a. Stator A Loss Parameter vs Diffusion Factor, 10% Span From Tip

DF 89310

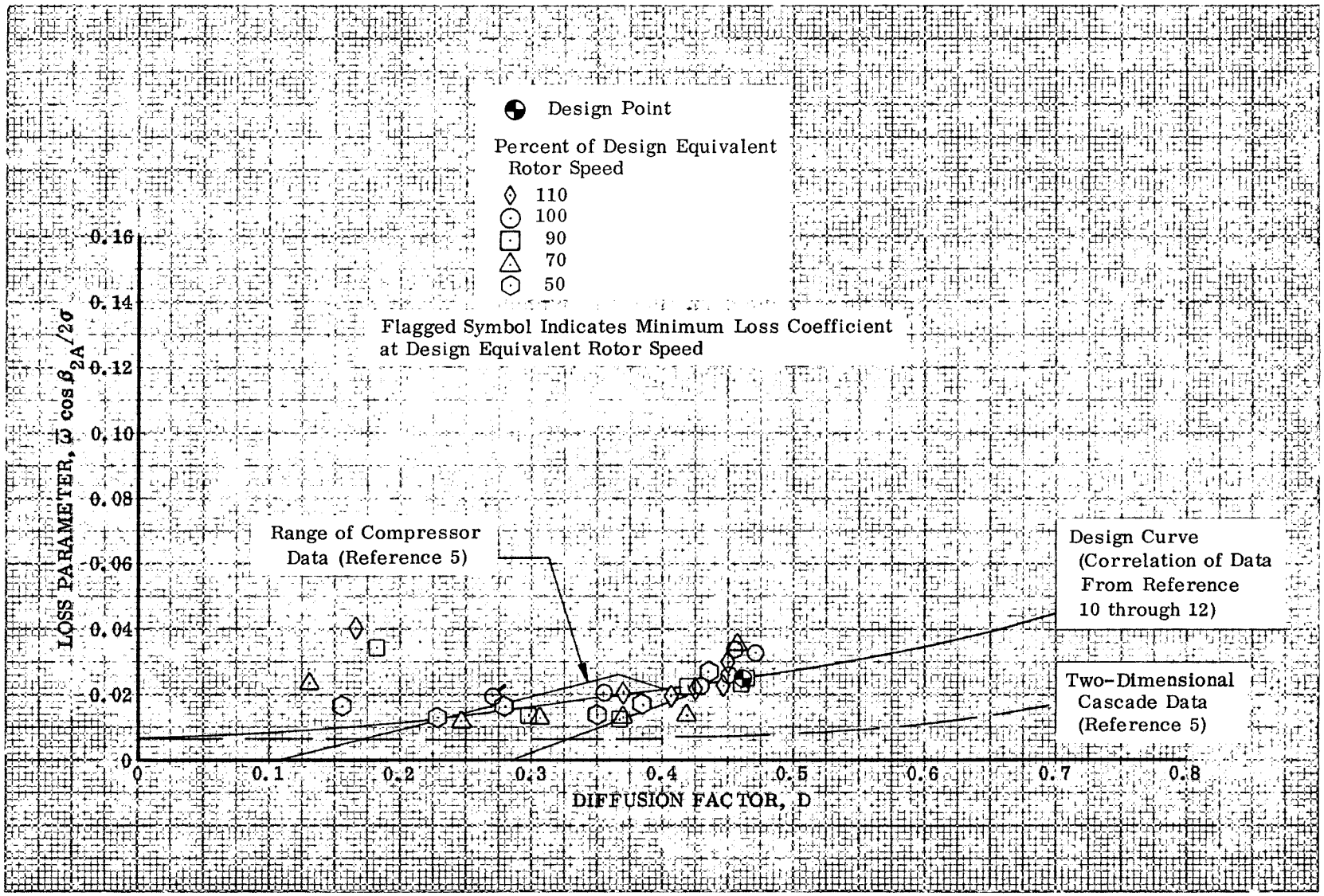


Figure 17b. Stator A Loss Parameter vs Diffusion Factor, 50% Span

DF 89311

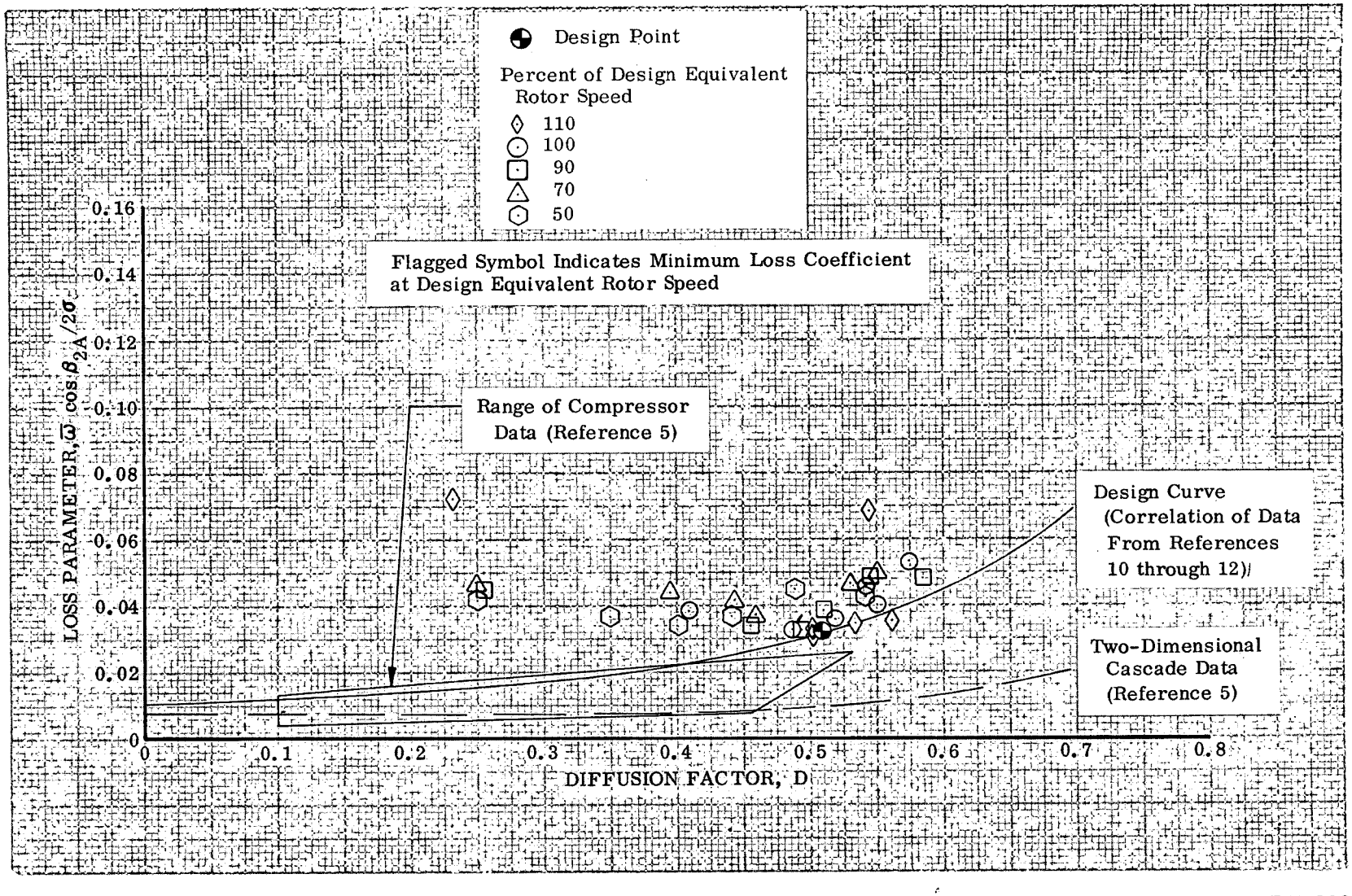


Figure 17c. Stator A Loss Parameter vs Diffusion Factor, 90% Span From Tip

DF 89312

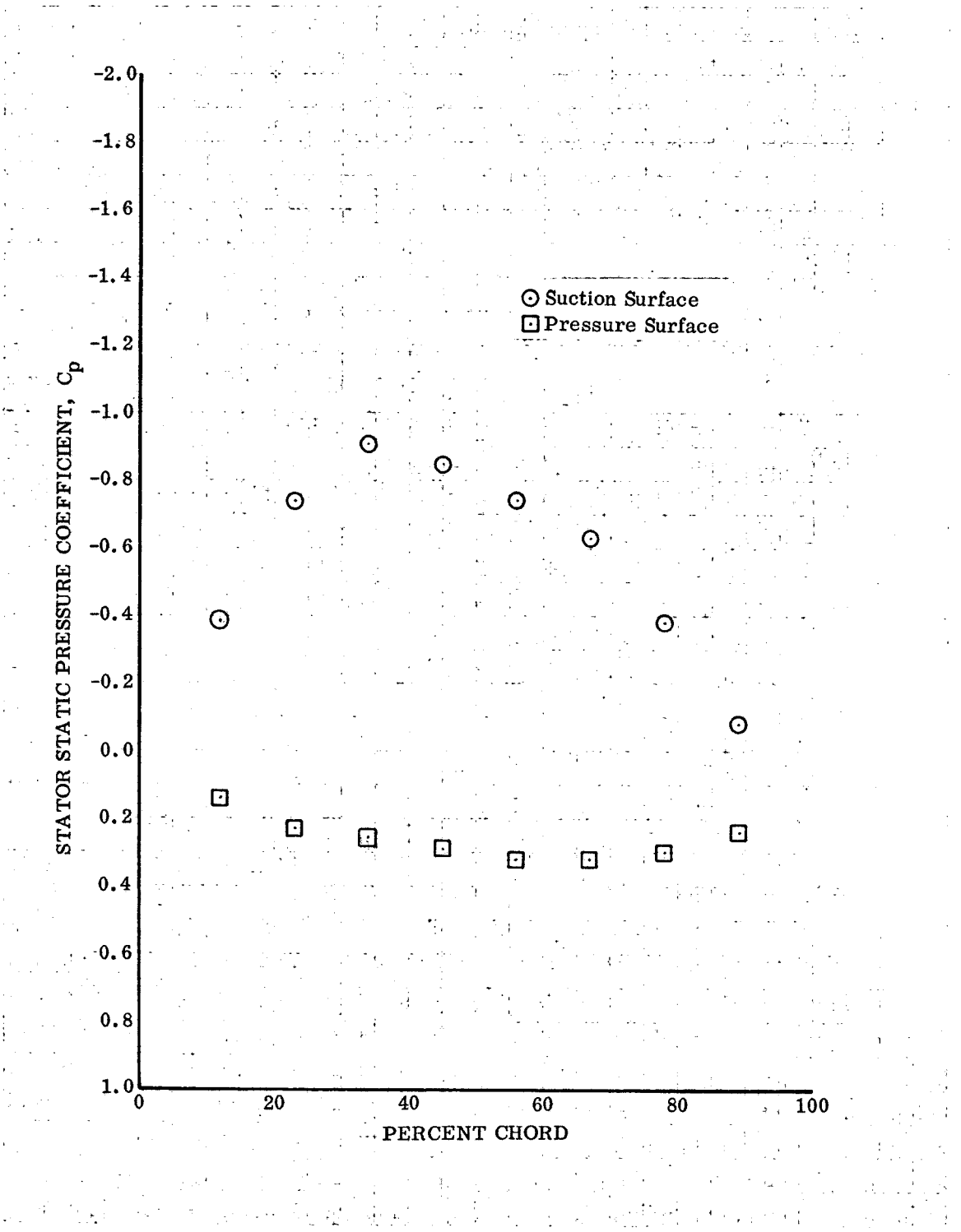


Figure 18a. Stator A Midspan Static Pressure Coefficient at Design Equivalent Rotor Speed, Corrected Weight Flow = 121.01 lb/sec

DF 89313

C2

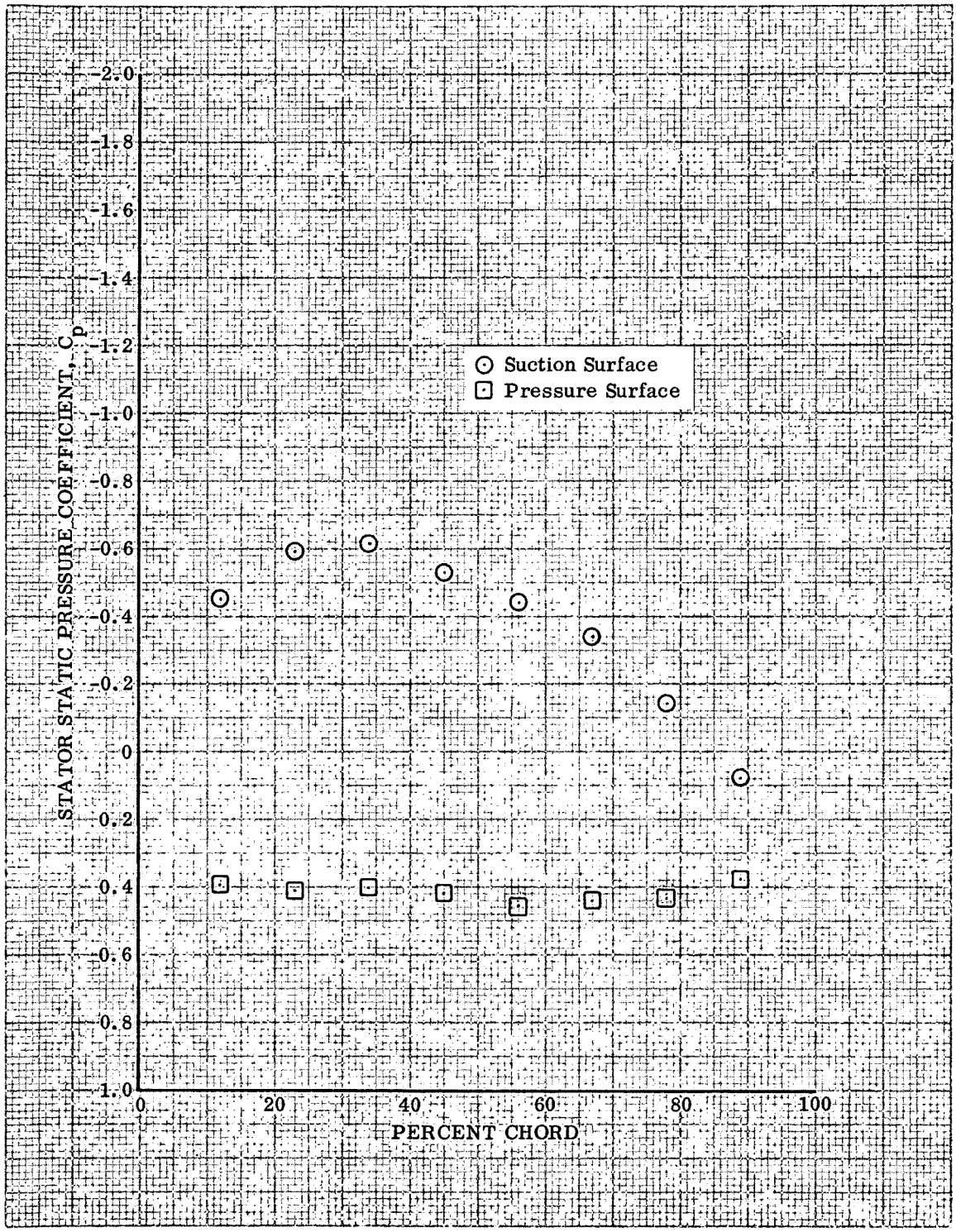


Figure 18b. Stator A Midspan Static Pressure Coefficient at Design Equivalent Rotor Speed, Corrected Weight Flow = 111.27 lb/sec DF 89314

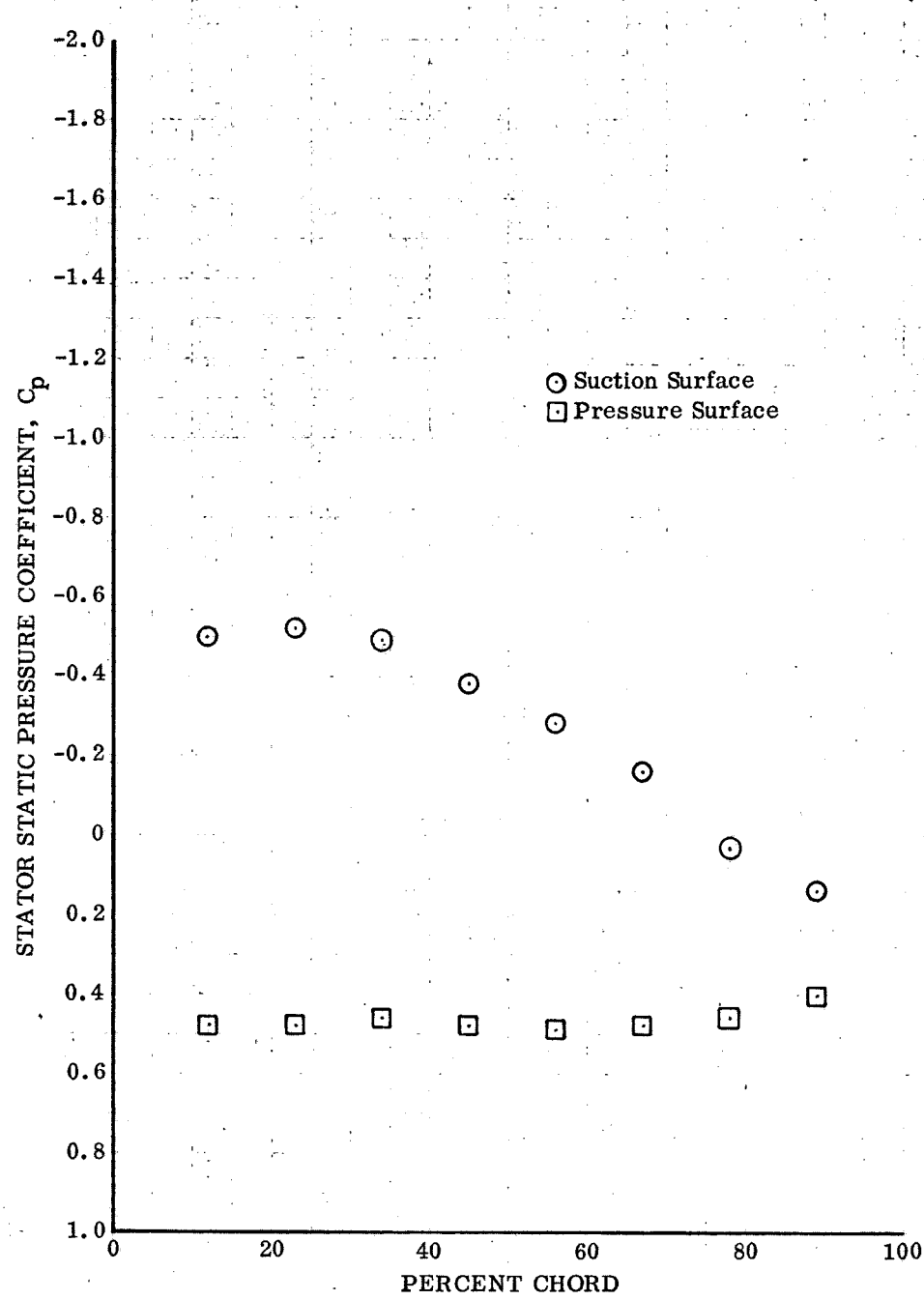


Figure 18c. Stator A Midspan Static Pressure Coefficient at Design Equivalent Rotor Speed, Corrected Weight Flow = 102.78 lb/sec

DF 89315

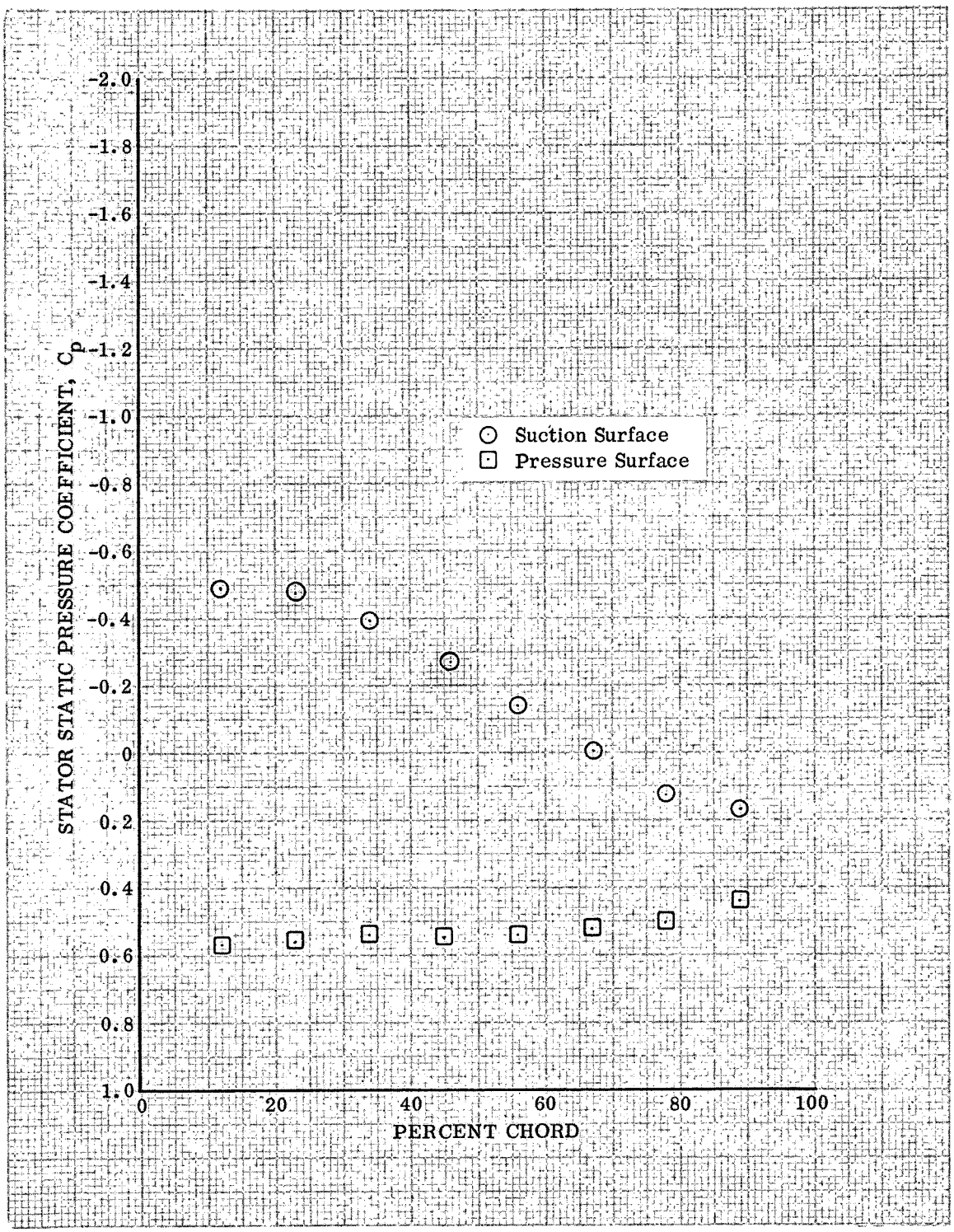


Figure 18d. Stator A Midspan Static Pressure Coefficient at Design Equivalent Rotor Speed, Corrected Weight Flow = 97.00 lb/sec

DF 89316

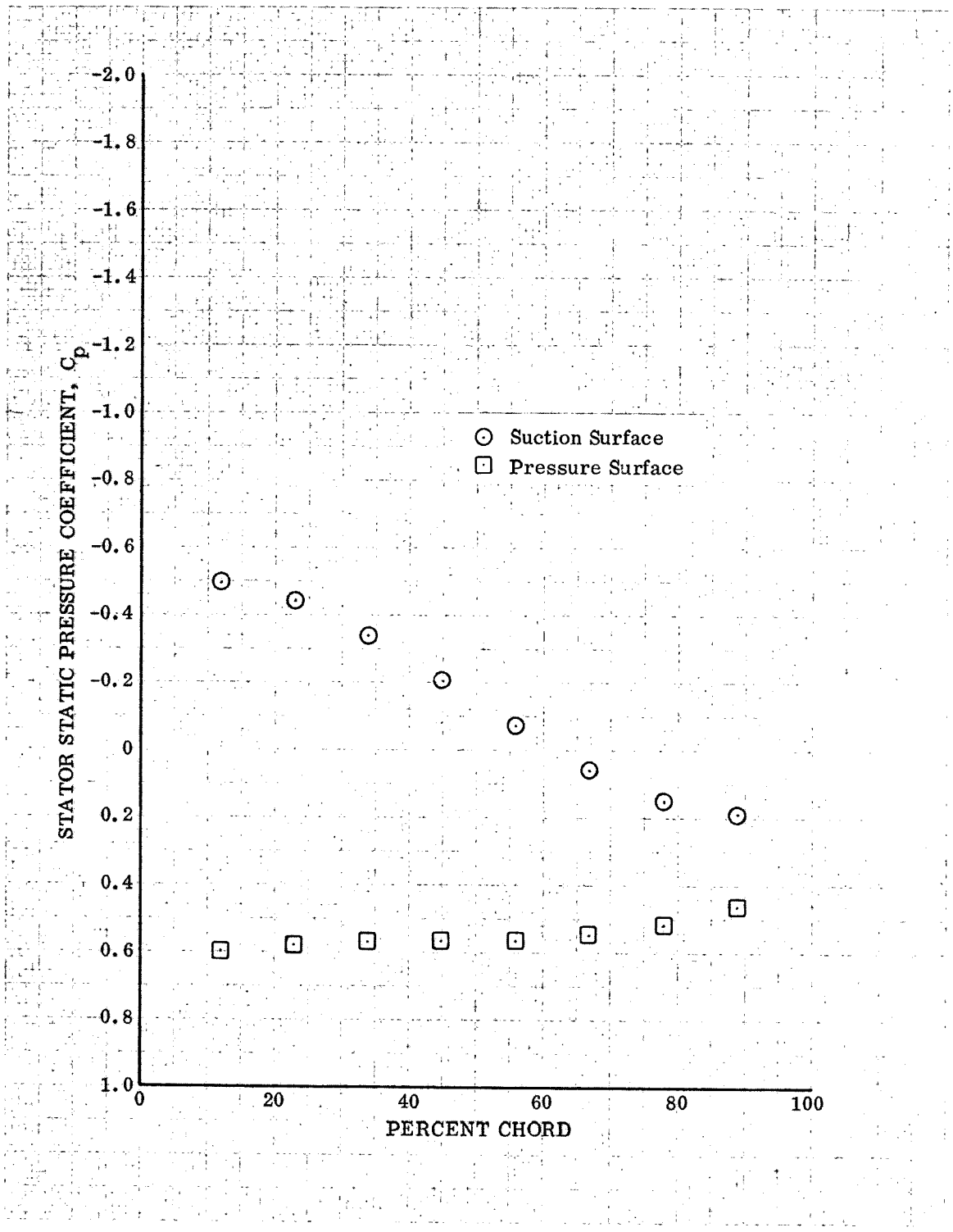


Figure 18e. Stator A Midspan Static Pressure Coefficient at Design Equivalent Rotor Speed, Corrected Weight Flow = 92.70 lb/sec

DF 89317

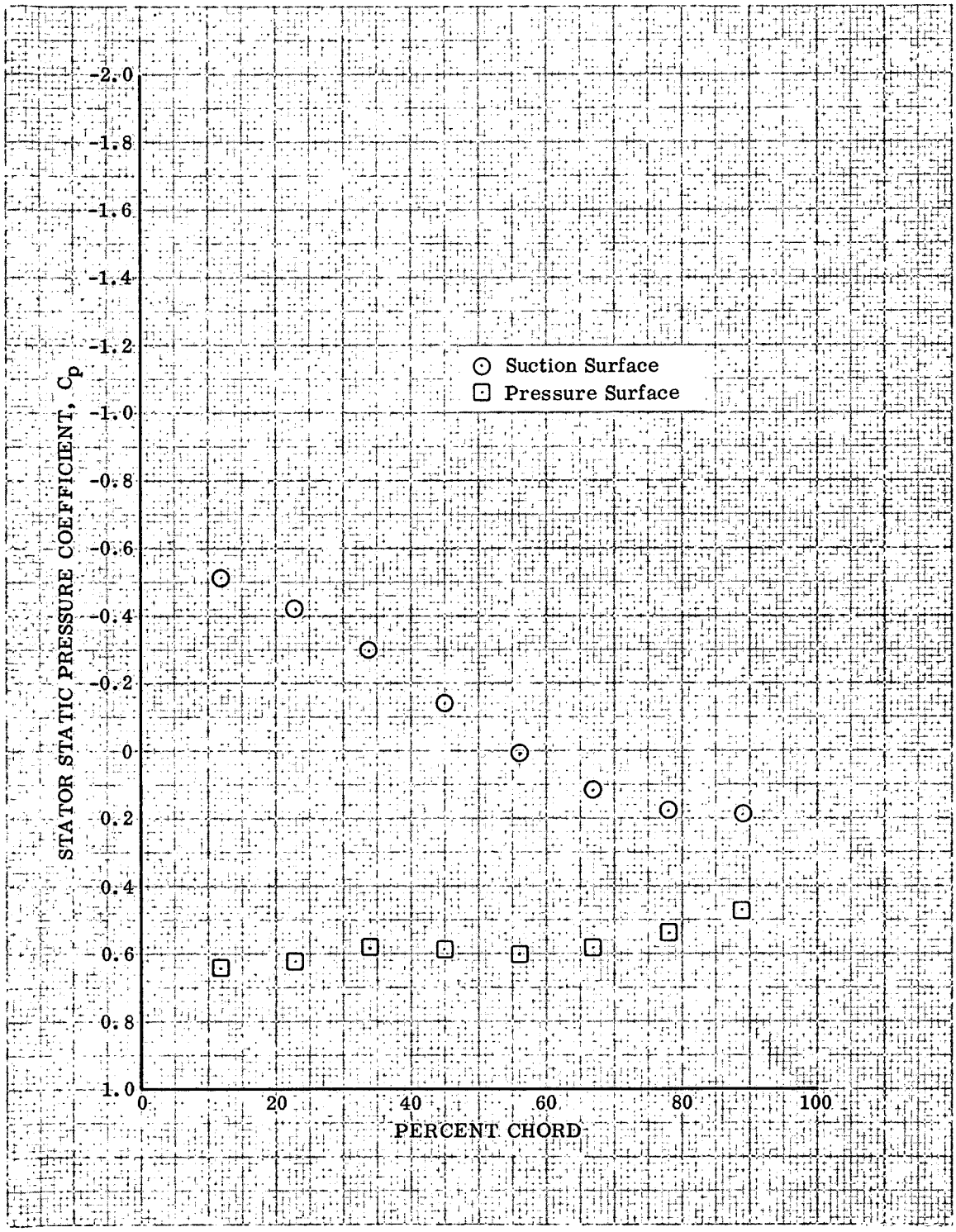


Figure 18f. Stator A Midspan Static Pressure Coefficient at Design Equivalent Rotor Speed, Corrected Weight Flow = 89.38 lb/sec

DF 89318

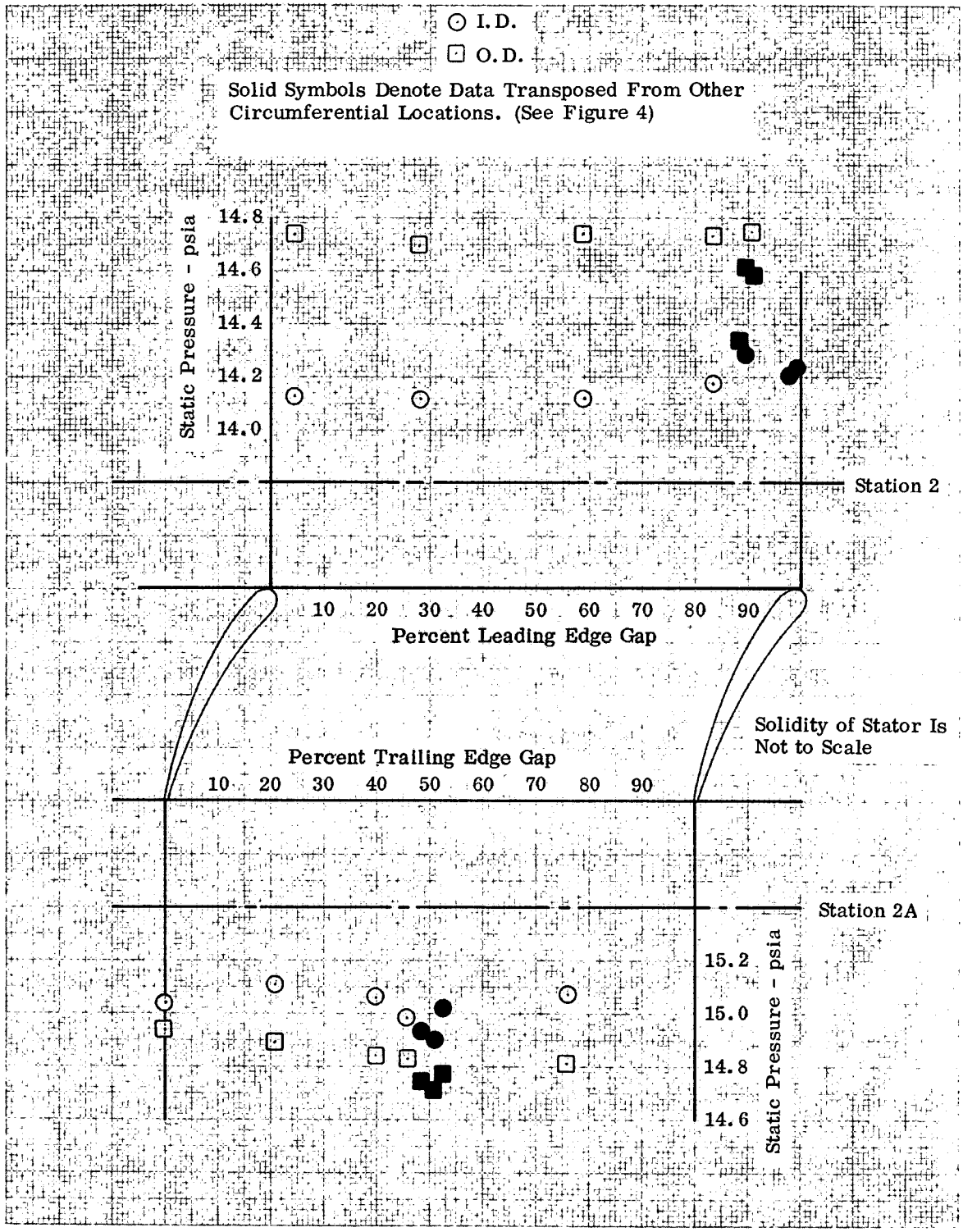


Figure 19a. Wall Static Pressure Distributions Upstream and Downstream of Stator A at Design Equivalent Rotor Speed, Corrected Weight Flow = 121.01 lb/sec

DF 89319

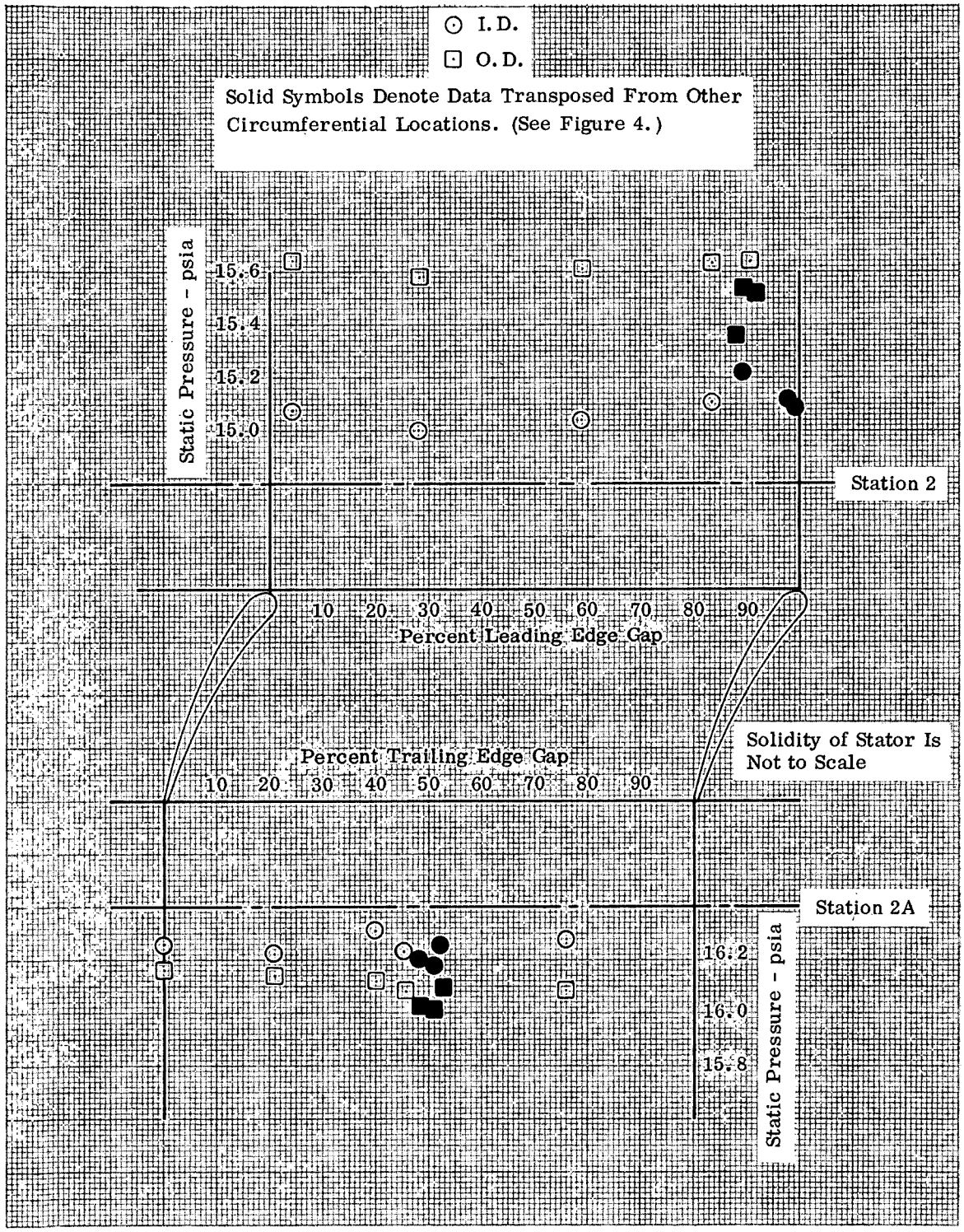


Figure 19b. Wall Static Pressure Distributions Upstream and Downstream of Stator A at Design Equivalent Rotor Speed, Corrected Weight Flow = 111.27 lb/sec

DF 89320

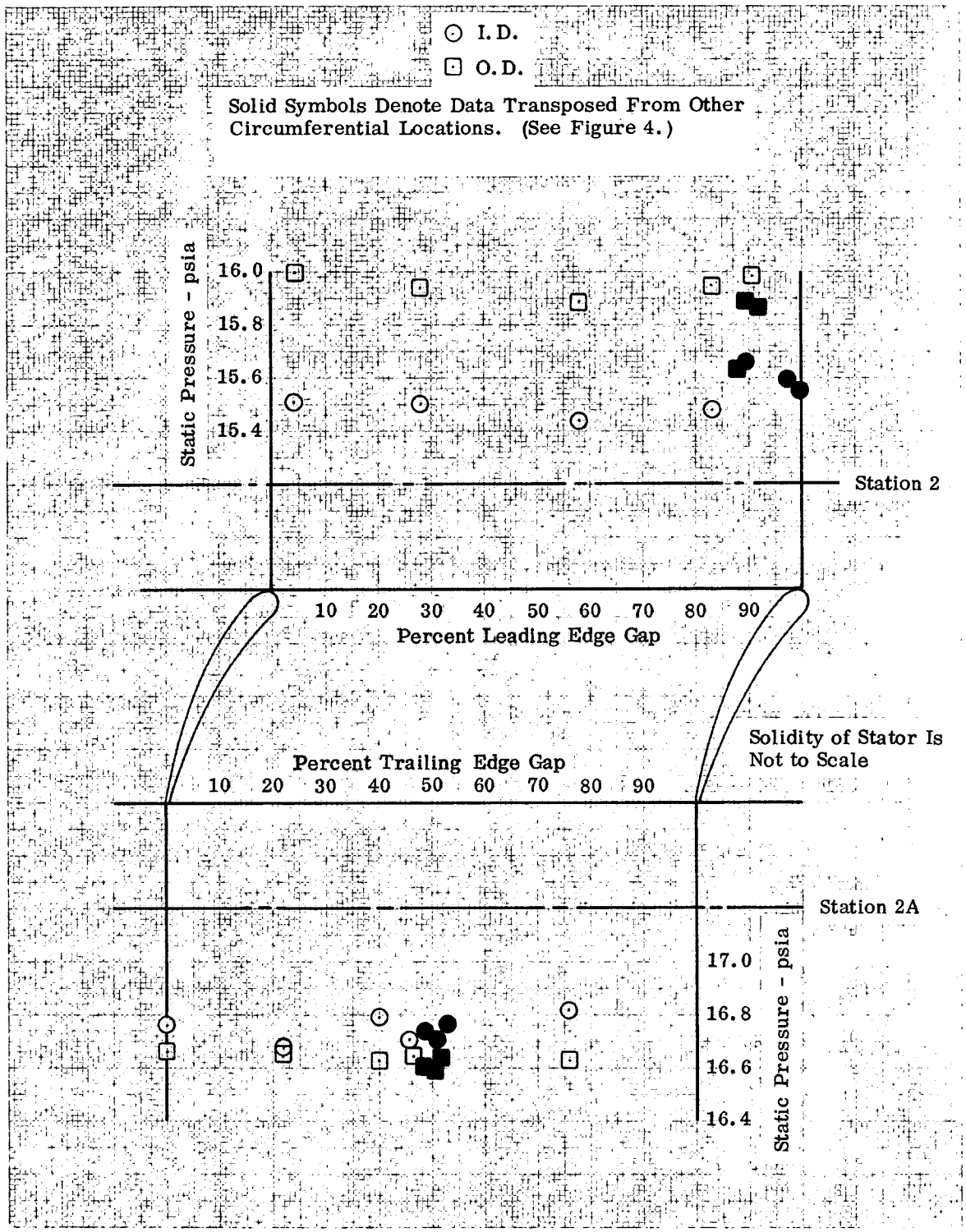


Figure 19c. Wall Static Pressure Distributions Upstream and Downstream of Stator A at Design Equivalent Rotor Speed, Corrected Weight Flow = 102.78 lb/sec

DF 89321

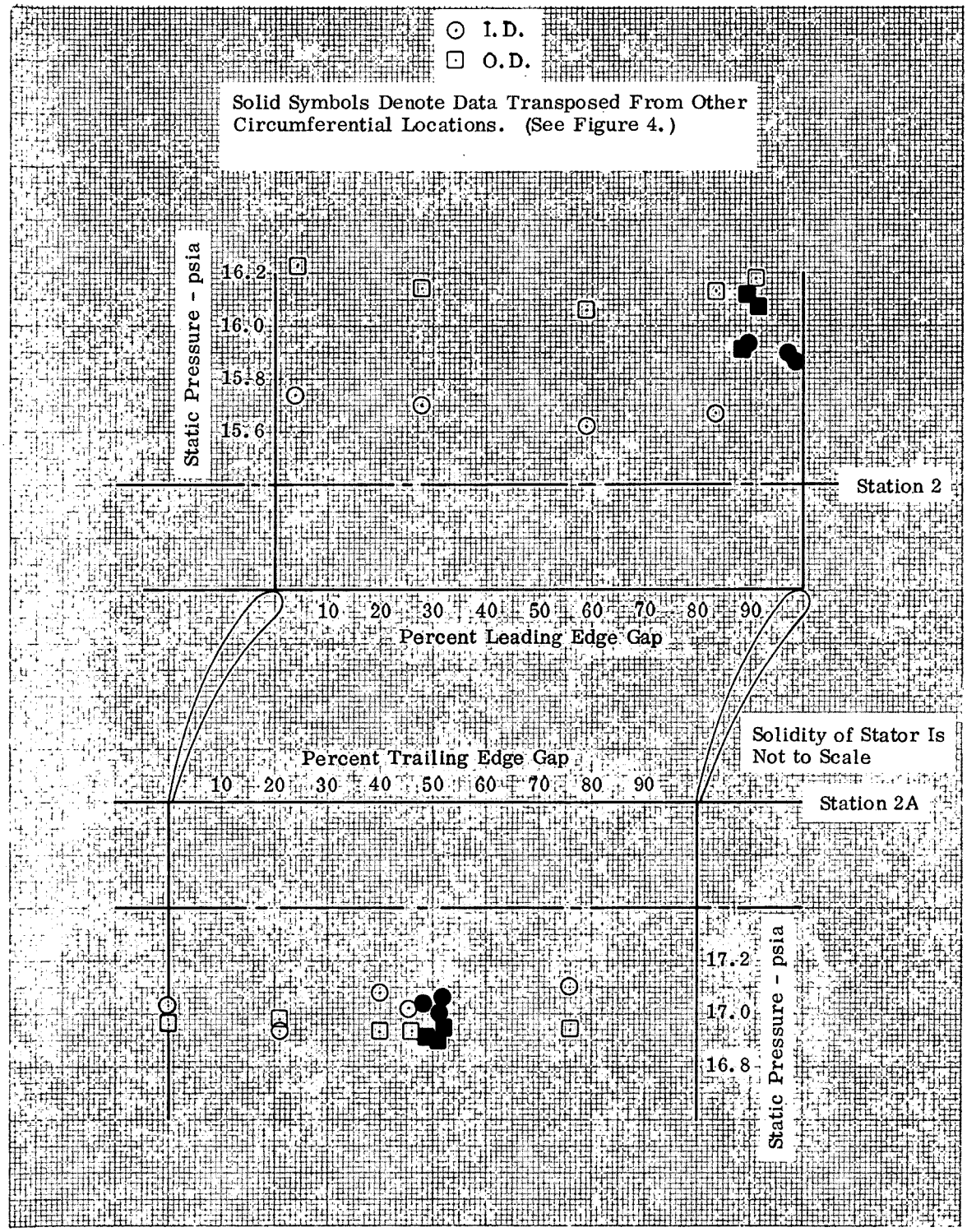


Figure 19d. Wall Static Pressure Distributions Upstream and Downstream of Stator A at Design Equivalent Rotor Speed, Corrected Weight Flow = 97.00 lb/sec

DF 89322

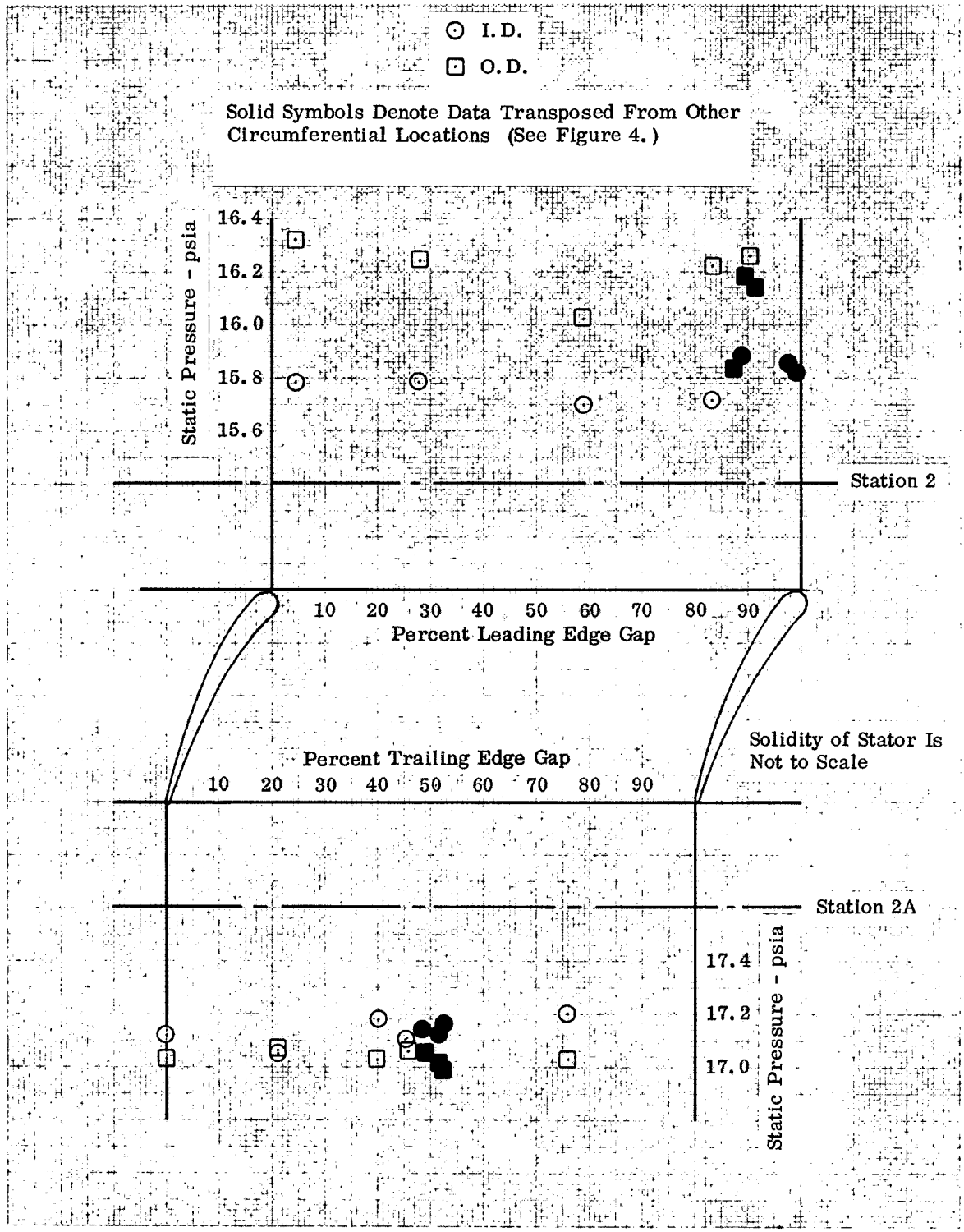


Figure 19e. Wall Static Pressure Distributions Upstream and Downstream of Stator A at Design Equivalent Rotor Speed, Corrected Weight Flow = 92.70 lb/sec

DF 89323

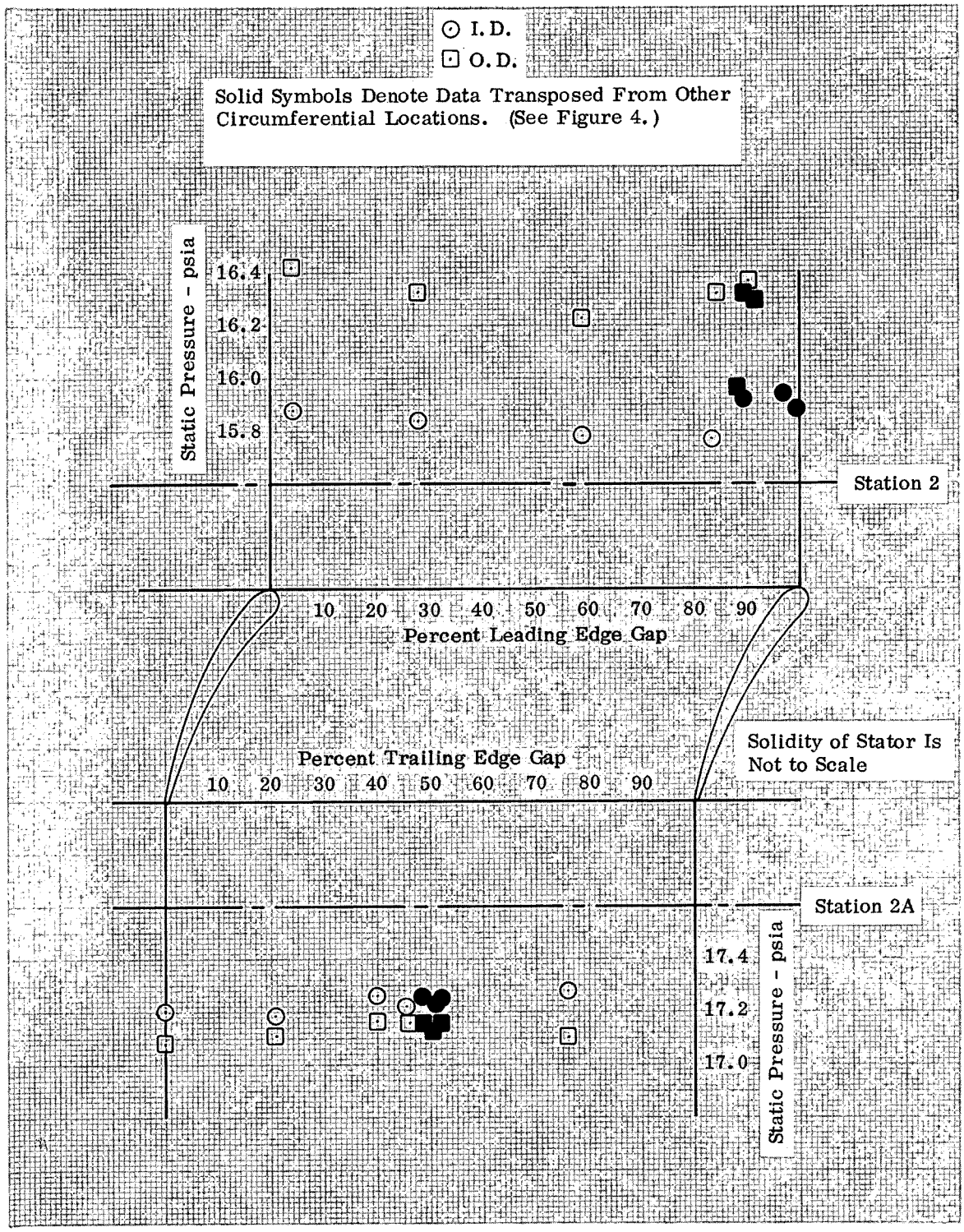


Figure 19f. Wall Static Pressure Distributions Upstream and Downstream of Stator A at Design Equivalent Rotor Speed, Corrected Weight Flow = 89.38 lb/sec

DF 89324

APPENDIX A

TABULATED OVERALL AND BLADE ELEMENT PERFORMANCE DATA

Rotor A and Stage A overall performance is tabulated in table A-1. Rotor A and Stator A blade element performance calculated from data at the instrumentation stations is tabulated in table A-2. Rotor A and Stator A blade element performance calculated from data that has been translated to the rotor and stator leading and trailing edges is tabulated in table A-3.

Table A-1. Overall Performance - Stage A

Corrected Weight Flow lb/sec	Rotor $\bar{P}_2/\bar{P}_1$	Rotor η_{ad}	Rotor η_p	Stage $\bar{P}_{2A}/\bar{P}_1$	Stage η_{ad}	Stage η_p
100% Design Equivalent Rotor Speed						
89.38	1.3058	0.8207	0.8273	1.2862	0.7718	0.7798
92.70	1.2989	0.8370	0.8429	1.2776	0.7815	0.7890
97.00	1.3026	0.8325	0.8386	1.2796	0.7736	0.7813
102.81	1.2923	0.8510	0.8563	1.2682	0.7855	0.7926
111.27	1.2806	0.8295	0.8354	1.2585	0.7685	0.7759
121.01	1.2489	0.7708	0.7779	1.2208	0.6884	0.6971
50% Design Equivalent Rotor Speed						
43.74	1.0708	0.7497	0.7521	1.0657	0.6964	0.6992
48.90	1.0681	0.8333	0.8349	1.0635	0.7770	0.7789
56.01	1.0649	0.7231	0.7256	1.0603	0.6725	0.6752
61.36	1.0632	0.8484	0.8497	1.0560	0.7651	0.7670
66.35	1.0601	0.6679	0.6707	1.0531	0.5905	0.5935
72.91	1.0546	0.6449	0.6475	1.0449	0.5317	0.5346
70% Design Equivalent Rotor Speed						
59.63	1.1453	0.7568	0.7614	1.1346	0.7029	0.7082
68.12	1.1395	0.8606	0.8632	1.1294	0.8004	0.8038
75.29	1.1355	0.7603	0.7646	1.1262	0.7097	0.7146
82.85	1.1302	0.7926	0.7962	1.1198	0.7309	0.7352
89.31	1.1260	0.8474	0.8499	1.1132	0.7639	0.7675
98.05	1.1046	0.7942	0.7971	1.0856	0.6533	0.6573
90% Design Equivalent Rotor Speed						
80.07	1.2464	0.8357	0.8407	1.2271	0.7741	0.7805
85.01	1.2375	0.7943	0.8004	1.2224	0.7465	0.7536
91.00	1.2323	0.8451	0.8496	1.2162	0.7896	0.7953
96.10	1.2235	0.8160	0.8212	1.2102	0.7699	0.7761
105.46	1.2167	0.8343	0.8389	1.1975	0.7641	0.7700
116.21	1.1687	0.7197	0.7259	1.1355	0.5839	0.5913
110% Design Equivalent Rotor Speed						
103.91	1.3650	0.8283	0.8357	1.3429	0.7823	0.7912
108.33	1.3624	0.8073	0.8155	1.3388	0.7590	0.7687
113.37	1.3620	0.8452	0.8518	1.3373	0.7923	0.8007
118.16	1.3493	0.8626	0.8684	1.3264	0.8105	0.8180
122.26	1.3355	0.8132	0.8207	1.3127	0.7622	0.7712
125.55	1.2255	0.7042	0.7126	1.1648	0.5240	0.5342

NOMENCLATURE USED FOR BLADE ELEMENT DATA TABULATION

Exit Percent Span From Tip	PCT SPAN
Exit Diameter	DIA
Absolute Flow Angle	BETA
Relative Flow Angle	BETA (PR)
Absolute Velocity	V
Axial Velocity	VZ
Absolute Tangential Velocity	V - THETA
Relative Velocity	V (PR)
Relative Tangential Velocity	V - THETA PR
Rotor Speed	U
Absolute Mach No.	M
Relative Mach No.	M (PR)
Relative Turning Angle	TURN (PR)
Loss Coefficient ($\bar{\omega}$)	UUBAR
Loss Parameter	LOSS PARA
Diffusion Factor	DFAC
Polytropic Efficiency	EFFP
Adiabatic Efficiency	EFF
Incidence	INCID
Deviation	DEVM
Total Pressure	P
Total Temperature	T
Stator Exit Average Freestream Total Pressure From Wake Rakes	P2 FS
Loss Coefficient Based on P2 FS ($\bar{\omega}_{fs}$)	UUBAR FS
Loss Parameter Based on UUBAR FS	LOSS PARA FS

Note: Where applicable the appropriate instrumentation station is noted.

Table A-2. Blade Element Performance

Stage A Rotor A - Stator A

PERCENT EQUIVALENT ROTOR SPEED = 99.72 EQUIVALENT ROTOR SPEED = 4198.27 CORRECTED WEIGHT FLOW = 111.27

INLET											
	PCT SPAN	96.54	91.52	86.39	70.99	50.10	29.08	13.68	8.55	3.53	PCT SPAN
	DIA	33.140	33.560	33.990	35.280	37.030	38.790	40.080	40.510	40.930	DIA
STATION 0	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
STATION 1	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	462.36	462.36	462.36	462.36	462.36	462.36	462.36	462.36	462.36	V 0
	V 1	424.24	470.14	480.25	488.37	490.55	486.45	479.56	470.65	459.32	V 1
	VZ 0	462.36	462.36	462.36	462.35	462.33	462.28	462.24	462.22	462.21	VZ 0
	VZ 1	424.22	470.13	480.25	488.35	490.42	486.11	479.02	470.05	458.67	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	M 0
	M 1	0.3856	0.4288	0.4384	0.4461	0.4482	0.4443	0.4377	0.4293	0.4186	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.2154	0.0284	0.0	0.0	0.0	0.0	0.0	0.0414	0.0923	UUBAR
	DFAC	0.082	-0.017	-0.039	-0.056	-0.061	-0.052	-0.037	-0.018	0.007	DFAC
	EFFP	-3.5786	0.5633	0.9999	1.0000	0.9998	0.9998	1.0001	0.4852	-0.1803	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.330	14.646	14.694	14.694	14.694	14.694	14.694	14.624	14.538	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.05	90.09	85.01	70.01	50.07	29.99	14.99	10.04	5.08	PCT SPAN
	DIA	33.230	33.610	34.000	35.150	36.680	38.220	39.370	39.750	40.130	DIA
STATION 1	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
STATION 2	BETA 2	46.810	44.760	42.620	38.460	35.810	35.120	36.620	38.730	42.710	BETA 2
	BETA(PR) 1	55.054	52.594	52.357	52.924	54.134	55.623	56.878	57.649	58.544	BETA(PR) 1
	BETA(PR) 2	19.736	23.060	25.214	28.168	30.883	32.472	34.424	34.852	38.283	BETA(PR) 2
	V 1	424.24	470.14	480.25	488.37	490.55	486.45	479.56	470.65	459.32	V 1
	V 2	624.57	611.76	608.46	618.46	628.24	639.68	630.12	624.11	585.32	V 2
	VZ 1	424.22	470.13	480.25	488.35	490.42	486.11	479.02	470.05	458.67	VZ 1
	VZ 2	427.47	434.39	447.74	484.21	509.19	522.59	504.85	485.96	429.30	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	455.36	430.76	412.00	384.61	367.38	367.56	375.21	389.75	396.28	V-THETA 2
	V(PR) 1	740.6	773.9	786.3	810.0	837.1	861.1	876.9	878.7	879.3	V(PR) 1
	V(PR) 2	454.1	472.1	494.9	549.4	593.7	620.2	613.2	593.4	548.1	V(PR) 2
	VTHETA PR1	-607.1	-614.8	-622.6	-646.3	-678.3	-710.6	-734.2	-742.1	-749.8	VTHETA PR1
	VTHETA PR2	-153.4	-184.9	-210.8	-259.3	-304.5	-332.6	-346.0	-338.4	-338.8	VTHETA PR2
	U 1	607.07	614.77	622.64	646.27	678.33	710.57	734.20	742.08	749.77	U 1
	U 2	608.72	615.68	622.83	643.89	671.92	700.13	721.20	728.16	735.12	U 2
	M 1	0.3856	0.4288	0.4384	0.4461	0.4482	0.4443	0.4377	0.4293	0.4186	M 1
	M 2	0.5506	0.5399	0.5379	0.5484	0.5572	0.5675	0.5572	0.5510	0.5145	M 2
	M(PR) 1	0.6732	0.7059	0.7178	0.7399	0.7648	0.7864	0.8004	0.8015	0.8013	M(PR) 1
	M(PR) 2	0.4003	0.4167	0.4375	0.4871	0.5266	0.5502	0.5422	0.5239	0.4817	M(PR) 2
	TURN(PR)	35.317	29.534	27.143	24.760	23.265	23.179	22.498	22.846	20.320	TURN(PR)
	UUBAR	0.1544	0.1963	0.1739	0.1087	0.0625	0.0455	0.0850	0.1136	0.1793	UUBAR
	LOSS PARA	0.0422	0.0530	0.0468	0.0295	0.0172	0.0129	0.0243	0.0326	0.0497	LOSS PARA
	DFAC	0.5656	0.5536	0.5264	0.4676	0.4313	0.4221	0.4477	0.4785	0.5344	DFAC
	EFFP	0.8067	0.7559	0.7767	0.8476	0.8797	0.9157	0.8682	0.8590	0.7928	EFFP
	EFF	0.7995	0.7479	0.7695	0.8425	0.8754	0.9125	0.8632	0.8537	0.7854	EFF
	INCID	3.212	0.315	-0.333	-1.131	-1.924	-2.425	-2.545	-2.206	-2.088	INCID
	DEVM	11.987	13.762	14.295	12.465	10.196	7.610	6.872	6.720	9.405	DEVM
	P 1	14.330	14.646	14.694	14.694	14.694	14.694	14.694	14.624	14.538	P 1
	P 2	18.520	18.405	18.400	18.565	18.800	19.100	19.085	19.055	18.635	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	568.030	565.480	563.440	561.240	561.920	562.930	565.310	566.430	567.250	T 2
STATOR A	PCT SPAN	95.10	90.20	85.15	70.17	50.00	29.97	14.85	9.94	5.04	PCT SPAN
	DIA	33.200	33.550	33.910	34.980	36.420	37.850	38.930	39.280	39.630	DIA
STATION 2	BETA 2	46.810	44.760	42.620	38.460	35.810	35.120	36.620	38.730	42.710	BETA 2
STATION 2A	BETA 2A	0.700	0.700	0.700	0.370	0.830	1.960	2.730	2.780	1.870	BETA 2A
	V 2	624.57	611.76	608.46	618.46	628.24	639.68	630.12	624.11	585.32	V 2
	V 2A	444.24	460.08	457.84	489.05	541.85	561.99	559.69	535.92	489.65	V 2A
	VZ 2	427.47	434.39	447.74	484.21	509.19	522.59	504.85	485.96	429.30	VZ 2
	VZ 2A	444.21	460.05	457.80	489.00	541.65	561.34	558.58	534.78	488.87	VZ 2A
	V-THETA 2	455.36	430.76	412.00	384.61	367.38	367.56	375.21	389.75	396.28	V-THETA 2
	V-THETA 2A	5.43	5.62	5.59	3.16	7.85	19.21	26.64	25.97	15.96	V-THETA 2A
	M 2	0.5506	0.5399	0.5379	0.5484	0.5572	0.5675	0.5572	0.5510	0.5145	M 2
	M 2A	0.3859	0.4010	0.3997	0.4288	0.4768	0.4949	0.4917	0.4694	0.4270	M 2A
	TURN(PR)	46.110	44.060	41.919	38.083	34.957	33.112	33.818	35.867	40.744	TURN(PR)
	UUBAR	0.1656	0.1012	0.1086	0.0723	-0.0106	0.0136	0.0441	0.1154	0.1364	UUBAR
	LOSS PARA	0.0557	0.0304	0.0374	0.0257	-0.0039	0.0052	0.0175	0.0401	0.0551	LOSS PARA
	DFAC	0.5314	0.4847	0.4777	0.4289	0.3502	0.3323	0.3325	0.3761	0.4276	DFAC
	EFFP	0.6969	0.7902	0.7742	0.8276	1.0366	0.9477	0.8153	0.6071	0.5869	EFFP
	INCID	-0.161	-1.441	-2.851	-5.216	-6.443	-7.282	-6.759	-5.209	-1.842	INCID
	DEVM	13.731	13.554	13.434	12.704	12.950	14.667	16.238	16.585	16.020	DEVM
	P 2	18.520	18.405	18.400	18.565	18.800	19.100	19.085	19.055	18.635	P 2
	P 2A	17.949	18.070	18.043	18.317	18.838	19.049	18.925	18.645	18.215	P 2A
	T 2	568.030	565.480	563.440	561.240	561.920	562.930	565.310	566.430	567.250	T 2
	T 2A	568.030	565.480	563.440	561.240	561.920	562.930	565.310	566.430	567.250	T 2A
	UUBAR FS	0.1003	0.0970	0.0884	0.0735	0.0554	0.0329	0.0570	0.0804	0.1488	UUBAR FS
	P2 FS	18.270	18.390	18.327	18.569	19.049	19.175	19.134	18.920	18.680	P2 FS
	LOSS PARA FS	0.0337	0.0330	0.0304	0.0261	0.0203	0.0125	0.0226	0.0321	0.0601	LOSS PARA FS

Table A-2. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 99.72 EQUIVALENT ROTOR SPEED = 4198.27 CORRECTED WEIGHT FLOW = 111.27

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
I.G.V.-L.E.	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
I.G.V.-T.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	462.37	462.37	462.37	462.37	462.37	462.37	462.37	462.37	462.37	V 0
	V 1	409.29	452.87	462.44	471.15	474.17	470.07	461.93	452.73	441.16	V 1
	VZ 0	462.37	462.37	462.37	462.36	462.33	462.28	462.24	462.22	462.21	VZ 0
	VZ 1	409.29	452.87	462.44	471.14	474.13	469.98	461.80	452.59	441.01	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	0.4215	M 0
	M 1	0.3716	0.4125	0.4215	0.4298	0.4326	0.4287	0.4210	0.4124	0.4015	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.2154	0.0284	0.0	0.0	0.0	0.0	0.0	0.0414	0.0923	UUBAR
	DFAC	0.115	0.021	-0.000	-0.019	-0.026	-0.017	0.001	0.021	0.046	DFAC
	EFFP	15.5725	2.8385	0.9625	0.9999	0.9999	0.9998	1.0000	14.7439	24.5990	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.330	14.646	14.694	14.694	14.694	14.694	14.694	14.624	14.538	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	47.030	45.016	42.801	38.606	35.932	35.335	36.984	39.183	43.280	BETA 2
	BETA(PR) 1	54.626	52.190	51.944	52.442	53.654	55.205	56.550	57.353	58.290	BETA(PR) 1
	BETA(PR) 2	19.893	23.275	25.378	28.334	31.063	32.756	34.876	35.401	38.972	BETA(PR) 2
	V 1	431.03	477.03	487.31	496.76	498.92	493.62	485.13	475.55	463.46	V 1
	V 2	622.29	608.95	606.28	616.29	626.07	635.86	624.28	617.49	578.56	V 2
	VZ 1	431.02	477.03	487.31	496.71	498.68	493.04	484.25	474.58	462.40	VZ 1
	VZ 2	424.16	430.47	444.84	481.53	506.65	518.09	497.79	477.73	420.41	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	455.33	430.71	411.93	384.48	367.19	367.30	374.89	389.39	395.89	V-THETA 2
	V(PR) 1	744.5	778.1	790.5	814.9	841.6	864.3	879.0	880.2	880.3	V(PR) 1
	V(PR) 2	451.1	468.6	492.4	547.2	591.8	616.9	607.9	587.3	541.9	V(PR) 2
	VTHETA PR1	-607.1	-614.7	-622.5	-646.0	-677.7	-709.5	-733.0	-740.7	-748.4	VTHETA PR1
	VTHETA PR2	-153.5	-185.2	-211.0	-259.7	-305.2	-333.3	-346.9	-339.5	-340.1	VTHETA PR2
	U 1	607.09	614.75	622.48	645.96	677.73	709.52	733.02	740.73	748.39	U 1
	U 2	608.82	615.88	622.94	644.13	672.37	700.62	721.83	728.91	735.99	U 2
	M 1	0.3920	0.4353	0.4451	0.4540	0.4561	0.4511	0.4430	0.4339	0.4225	M 1
	M 2	0.5484	0.5373	0.5358	0.5463	0.5552	0.5638	0.5517	0.5448	0.5082	M 2
	M(PR) 1	0.6771	0.7101	0.7220	0.7448	0.7694	0.7898	0.8027	0.8032	0.8024	M(PR) 1
	M(PR) 2	0.3976	0.4135	0.4351	0.4850	0.5248	0.5470	0.5372	0.5182	0.4760	M(PR) 2
	TURN(PR)	34.733	28.914	26.566	24.110	22.600	22.466	21.702	21.984	19.358	TURN(PR)
	UUBAR	0.1531	0.1946	0.1723	0.1076	0.0621	0.0452	0.0848	0.1135	0.1794	UUBAR
	LOSS PARA	0.0418	0.0525	0.0463	0.0291	0.0171	0.0128	0.0241	0.0324	0.0493	LOSS PARA
	DFAC	0.5720	0.5605	0.5321	0.4734	0.4366	0.4282	0.4551	0.4864	0.5420	DFAC
	EFFP	0.8067	0.7559	0.7767	0.8476	0.8797	0.9157	0.8682	0.8590	0.7928	EFFP
	EFF	0.7995	0.7479	0.7695	0.8425	0.8754	0.9125	0.8632	0.8537	0.7854	EFF
	INCID	2.784	-0.089	-0.746	-1.615	-2.409	-2.856	-2.892	-2.523	-2.365	INCID
	DEVM	12.144	13.977	14.458	12.631	10.375	7.892	7.321	7.266	10.090	DEVM
	P 1	14.330	14.646	14.694	14.694	14.694	14.694	14.694	14.624	14.538	P 1
	P 2	18.520	18.405	18.400	18.565	18.800	19.100	19.085	19.055	18.635	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	568.030	565.480	563.440	561.240	561.920	562.930	565.310	566.430	567.250	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	46.536	44.503	42.333	38.329	35.604	34.887	36.398	38.509	42.495	BETA 2
STATOR-T.E.	BETA 2A	0.700	0.700	0.700	0.370	0.830	1.961	2.731	2.781	1.871	BETA 2A
	V 2	627.46	614.67	611.99	620.61	631.94	644.11	634.25	627.99	588.57	V 2
	V 2A	444.27	460.10	457.85	489.05	541.90	561.99	559.69	535.92	489.66	V 2A
	VZ 2	431.63	438.39	452.40	486.78	513.54	527.78	509.72	490.58	433.25	VZ 2
	VZ 2A	444.23	460.06	457.81	488.99	541.62	561.19	558.36	534.53	488.63	VZ 2A
	V-THETA 2	455.41	430.85	412.13	384.83	367.71	368.01	375.76	390.36	396.94	V-THETA 2
	V-THETA 2A	5.43	5.62	5.59	3.16	7.85	19.21	26.64	25.97	15.96	V-THETA 2A
	M 2	0.5533	0.5426	0.5412	0.5504	0.5607	0.5716	0.5611	0.5546	0.5175	M 2
	M 2A	0.3859	0.4010	0.3997	0.4288	0.4769	0.4949	0.4917	0.4694	0.4270	M 2A
	TURN(PR)	45.836	43.803	41.632	37.953	34.753	32.885	33.603	35.655	40.540	TURN(PR)
	UUBAR	0.1642	0.1003	0.1074	0.0718	-0.0105	0.0134	0.0436	0.1141	0.1350	UUBAR
	LOSS PARA	0.0553	0.0341	0.0370	0.0255	-0.0039	0.0052	0.0173	0.0456	0.0545	LOSS PARA
	DFAC	0.5335	0.4871	0.4807	0.4309	0.3540	0.3370	0.3370	0.3801	0.4309	DFAC
	EFFP	0.7025	0.7947	0.7801	0.8308	1.0350	0.9507	0.8262	0.6252	0.6017	EFFP
	INCID	-0.435	-1.698	-3.137	-5.346	-6.647	-7.509	-6.973	-5.421	-2.046	INCID
	DEVM	13.731	13.554	13.434	12.704	12.950	14.667	16.238	16.585	16.020	DEVM
	P 2	18.520	18.405	18.400	18.565	18.800	19.100	19.085	19.055	18.635	P 2
	P 2A	17.949	18.070	18.043	18.317	18.838	19.049	18.925	18.645	18.215	P 2A
	T 2	568.030	565.480	563.440	561.240	561.920	562.930	565.310	566.430	567.250	T 2
	T 2A	568.030	565.480	563.440	561.240	561.920	562.930	565.310	566.430	567.250	T 2A
	UUBAR FS	0.0994	0.0962	0.0874	0.0731	0.0548	0.0325	0.0564	0.0795	0.1473	UUBAR FS
	P2 FS	18.270	18.390	18.327	18.569	19.049	19.175	19.134	18.920	18.680	P2 FS
	LOSS PARA FS	0.0334	0.0327	0.0301	0.0259	0.0203	0.0126	0.0223	0.0317	0.0594	LOSS PARA FS

Table A-3. Blade Element Performance

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 110.28 EQUIVALENT ROTOR SPEED = 4642.77 CORRECTED WEIGHT FLOW = 125.55

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	538.46	538.46	538.46	538.46	538.46	538.46	538.46	538.46	538.46	V 0
	V 1	523.02	555.60	558.05	560.62	557.96	553.65	544.01	527.51	491.93	V 1
	VZ 0	538.46	538.46	538.46	538.45	538.41	538.36	538.31	538.29	538.27	VZ 0
	VZ 1	523.02	555.60	558.05	560.61	557.92	553.54	543.86	527.35	491.76	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4940	0.4940	0.4940	0.4940	0.4940	0.4940	0.4940	0.4940	0.4940	M 0
	M 1	0.4791	0.5105	0.5128	0.5153	0.5128	0.5086	0.4993	0.4834	0.4495	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1267	0.0	0.0	0.0	0.0	0.0	0.0	0.0417	0.1812	UUBAR
	DFAC	0.029	-0.032	-0.036	-0.041	-0.036	-0.028	-0.010	0.020	0.086	DFAC
	EFFP	-0.9625	1.0001	1.0000	1.0000	0.9999	0.9998	0.9999	15.2586	-273.0835	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.408	14.694	14.694	14.694	14.694	14.694	14.694	14.600	14.285	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -I.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	38.873	34.604	31.599	30.010	28.635	26.447	25.527	26.690	31.008	BETA 2
	BETA(PR) 1	50.444	49.077	49.301	50.213	51.780	53.345	54.731	55.860	58.005	BETA(PR) 1
	BETA(PR) 2	22.034	23.566	22.974	26.999	31.895	35.478	37.479	39.228	47.474	BETA(PR) 2
	V 1	554.56	585.37	592.09	594.96	590.51	584.58	574.34	556.58	518.24	V 1
	V 2	714.22	734.78	778.37	756.84	725.61	716.16	712.55	685.67	562.92	V 2
	VZ 1	554.54	589.37	592.09	594.90	590.22	583.90	573.30	555.44	517.05	VZ 1
	VZ 2	556.04	604.80	662.96	655.27	636.44	640.26	641.53	611.07	481.22	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	448.24	417.28	407.84	378.47	347.50	318.49	306.36	307.20	289.24	V-THETA 2
	V(PR) 1	870.8	899.7	908.9	929.7	954.2	978.5	993.5	990.4	976.5	V(PR) 1
	V(PR) 2	599.9	659.8	720.1	735.6	750.1	787.2	809.8	790.3	713.1	V(PR) 2
	VTHETA PR1	-671.4	-679.8	-688.4	-714.4	-749.5	-784.6	-810.6	-819.2	-827.6	VTHETA PR1
	VTHETA PR2	-225.0	-263.8	-281.1	-333.9	-396.1	-456.3	-491.9	-498.9	-524.7	VTHETA PR2
	U 1	671.36	679.83	688.28	714.35	749.49	784.65	810.63	819.16	827.62	U 1
	U 2	673.28	681.09	688.90	712.33	743.56	774.80	798.26	806.08	813.92	U 2
	M 1	0.5095	0.5433	0.5459	0.5487	0.5444	0.5386	0.5286	0.5114	0.4746	M 1
	M 2	0.6326	0.6538	0.6978	0.6800	0.6511	0.6421	0.6389	0.6129	0.4982	M 2
	M(PR) 1	0.8000	0.8294	0.8372	0.8575	0.8797	0.9015	0.9144	0.9100	0.8942	M(PR) 1
	M(PR) 2	0.5313	0.5871	0.6456	0.6608	0.6730	0.7057	0.7261	0.7065	0.6311	M(PR) 2
	TURN(PR)	28.409	25.511	26.327	23.217	19.893	17.886	17.280	16.666	10.573	TURN(PR)
	UUBAR	0.3762	0.3085	0.1939	0.1655	0.1735	0.1493	0.1415	0.1818	0.3049	UUBAR
	LOSS PARA	0.1012	0.0830	0.0531	0.0453	0.0474	0.0408	0.0389	0.0493	0.0729	LOSS PARA
	DFAC	0.4608	0.4030	0.3405	0.3338	0.3306	0.3042	0.2909	0.3097	0.3736	DFAC
	EFFP	0.5295	0.5582	0.7138	0.7803	0.7601	0.7495	0.7584	0.7031	0.4781	EFFP
	EFF	0.5170	0.5464	0.7044	0.7732	0.7529	0.7422	0.7514	0.6950	0.4691	EFF
	INCID	-1.398	-3.291	-3.389	-3.843	-4.284	-4.717	-4.712	-4.016	-7.650	INCID
	DEVM	14.284	14.268	12.055	11.296	11.206	10.611	9.923	11.090	18.590	DEVM
	P 1	14.408	14.694	14.694	14.694	14.694	14.694	14.694	14.600	14.285	P 1
	P 2	17.330	17.705	18.455	18.405	18.080	18.005	18.000	17.625	16.130	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	573.050	570.630	568.240	563.280	560.750	560.480	559.910	559.950	557.750	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-I.E.	BETA 2	38.438	34.159	31.156	29.738	28.327	26.071	25.074	24.207	30.512	BETA 2
STATOR-T.E.	BETA 2A	1.580	1.480	1.230	-0.290	-0.700	0.280	1.331	1.161	-0.020	BETA 2A
	V 2	721.17	743.41	788.69	763.82	733.82	727.03	726.05	698.89	572.48	V 2
	V 2A	657.53	706.61	712.03	760.71	744.39	750.41	747.32	713.50	653.68	V 2A
	VZ 2	566.88	615.16	674.91	663.12	645.56	652.20	656.31	625.67	492.09	VZ 2
	VZ 2A	657.28	706.37	711.85	760.61	744.03	749.77	746.18	712.34	652.65	VZ 2A
	V-THETA 2	448.32	417.42	408.04	378.81	347.99	319.10	307.08	307.96	290.00	V-THETA 2
	V-THETA 2A	18.13	18.25	15.28	-3.85	-9.09	3.67	17.33	14.43	-0.23	V-THETA 2A
	M 2	0.6392	0.6621	0.7080	0.6868	0.6591	0.6526	0.6520	0.6257	0.5071	M 2
	M 2A	0.5788	0.6267	0.6333	0.6838	0.6694	0.6755	0.6728	0.6398	0.5836	M 2A
	TURN(PR)	36.857	32.679	29.926	30.022	29.009	25.755	23.692	24.986	30.456	TURN(PR)
	UUBAR	0.2204	0.1576	0.2644	0.1479	0.1489	0.1250	0.1559	0.2048	0.0377	UUBAR
	LOSS PARA	0.0742	0.0536	0.0910	0.0490	0.0551	0.0481	0.0618	0.0819	0.0152	LOSS PARA
	DFAC	0.2892	0.2324	0.2688	0.1824	0.1663	0.1356	0.1298	0.1481	0.0639	DFAC
	EFFP	-0.1358	-0.3888	-0.2151	-13.1623	5.3471	2.6168	3.2270	5.1977	1.1105	EFFP
	INCID	-8.534	-12.042	-14.314	-13.937	-13.921	-16.319	-18.283	-17.709	-14.018	INCID
	DEVM	14.611	14.334	13.964	12.044	11.420	12.988	14.839	14.967	14.132	DEVM
	P 2	17.330	17.705	18.455	18.405	18.080	18.005	18.000	17.625	16.130	P 2
	P 2A	16.412	16.994	17.068	17.718	17.399	17.445	17.303	16.788	16.032	P 2A
	T 2	573.050	570.630	568.240	563.280	560.750	560.480	559.910	559.950	557.750	T 2
	T 2A	573.053	570.630	568.240	563.280	560.750	560.480	559.910	559.950	557.750	T 2A
	UUBAR FS	0.2183	0.2128	0.1882	0.1167	0.1084	0.1209	0.1103	0.1366	0.2124	UUBAR FS
	P2 FS	17.319	18.021	17.962	18.285	17.872	17.984	17.770	17.302	16.706	P2 FS
	LOSS PARA FS	0.0734	0.0723	0.0647	0.0414	0.0401	0.0465	0.0437	0.0546	0.0856	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 109.97 EQUIVALENT ROTOR SPEED = 4629.71 CORRECTED WEIGHT FLOW = 122.26

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.93	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	520.27	520.27	520.27	520.27	520.27	520.27	520.27	520.27	520.27	V 0
	V 1	503.00	524.32	526.66	531.86	538.82	531.48	519.32	506.98	484.94	V 1
	VZ 0	520.27	520.27	520.27	520.26	520.23	520.17	520.13	520.11	520.09	VZ 0
	VZ 1	503.00	524.32	526.66	531.85	538.78	531.38	519.18	506.82	484.77	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4765	0.4765	0.4765	0.4765	0.4765	0.4765	0.4765	0.4765	0.4765	M 0
	M 1	0.4600	0.4804	0.4826	0.4876	0.4943	0.4872	0.4756	0.4638	0.4428	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.0766	0.0	0.0	0.0	0.0	0.0	0.0	0.0525	0.1423	UUBAR
	DFAC	0.033	-0.008	-0.012	-0.022	-0.036	-0.022	0.002	0.026	0.068	DFAC
	EFFP	-14.2183	0.9999	0.9997	0.9998	0.9999	0.9997	0.9995	18.8650	234.0489	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.532	14.694	14.694	14.694	14.694	14.694	14.694	14.583	14.393	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	47.823	44.880	41.636	37.454	35.480	35.117	36.398	39.851	43.039	BETA 2
	BETA(PR) 1	51.498	50.705	50.925	51.677	52.712	54.428	55.951	56.871	58.310	BETA(PR) 1
	BETA(PR) 2	22.888	25.014	27.045	28.990	29.621	32.791	34.719	37.215	41.567	BETA(PR) 2
	V 1	532.57	554.78	557.36	563.09	569.38	560.24	547.23	534.19	510.69	V 1
	V 2	655.32	655.41	656.79	677.91	711.03	701.83	692.76	658.02	611.09	V 2
	VZ 1	532.55	554.78	557.35	563.03	569.10	559.59	545.24	533.09	509.52	VZ 1
	VZ 2	439.99	464.41	490.87	538.08	578.67	573.38	556.60	504.23	445.80	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	485.64	462.47	436.37	412.19	412.46	403.23	410.33	420.87	416.29	V-THETA 2
	V(PR) 1	855.5	876.0	884.2	908.0	939.6	962.3	976.2	976.0	970.5	V(PR) 1
	V(PR) 2	477.6	512.5	551.1	615.3	666.1	683.0	678.4	634.4	597.0	V(PR) 2
	VTHETA PR1	-669.5	-677.9	-686.4	-712.3	-747.4	-782.4	-808.3	-816.9	-825.3	VTHETA PR1
	VTHETA PR2	-185.7	-216.7	-250.6	-298.1	-329.0	-369.4	-385.7	-382.9	-395.3	VTHETA PR2
	U 1	669.48	677.92	686.45	712.34	747.38	782.44	808.35	816.86	825.30	U 1
	U 2	671.39	679.17	686.96	710.33	741.47	772.62	796.01	803.81	811.63	U 2
	M 1	0.4883	0.5097	0.5122	0.5177	0.5238	0.5150	0.5024	0.4898	0.4673	M 1
	M 2	0.5748	0.5764	0.5788	0.6000	0.6309	0.6210	0.6110	0.5776	0.5336	M 2
	M(PR) 1	0.7843	0.8048	0.8126	0.8249	0.8644	0.8846	0.8962	0.8950	0.8881	M(PR) 1
	M(PR) 2	0.4199	0.4507	0.4857	0.5445	0.5910	0.6043	0.5984	0.5569	0.5213	M(PR) 2
	TURN(PR)	28.610	25.690	23.881	22.691	23.099	21.654	21.259	19.689	16.784	TURN(PR)
	UUBAR	0.2659	0.2463	0.1968	0.1155	0.0558	0.0601	0.0905	0.1525	0.1907	UUBAR
	LOSS PARA	0.0711	0.0656	0.0521	0.0311	0.0156	0.0170	0.0258	0.0425	0.0594	LOSS PARA
	DFAC	0.6068	0.5702	0.5234	0.4618	0.4317	0.4302	0.4495	0.4997	0.5352	DFAC
	EFFP	0.6861	0.6971	0.7308	0.8264	0.9142	0.8928	0.8637	0.8055	0.7505	EFFP
	EFF	0.6746	0.6964	0.7211	0.8196	0.9104	0.8880	0.8576	0.7972	0.7405	EFF
	INCID	-0.343	-1.573	-1.765	-2.379	-3.351	-3.633	-3.491	-3.005	-2.345	INCID
	DEVM	15.138	15.716	16.126	13.286	8.934	7.927	7.165	9.078	12.684	DEVM
	P 1	14.532	14.694	14.694	14.694	14.694	14.694	14.694	14.583	14.393	P 1
	P 2	18.750	18.800	18.855	19.265	19.950	20.015	20.055	19.610	19.040	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	576.770	573.820	571.810	569.620	570.720	572.620	574.910	576.160	577.000	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	47.283	44.326	41.152	37.158	35.099	34.613	35.749	39.115	42.227	BETA 2
STATOR-T.E.	BETA 2A	-0.190	0.170	0.440	0.520	1.420	2.201	2.641	2.791	0.550	BETA 2A
	V 2	661.11	662.09	663.44	683.14	718.72	712.01	705.12	669.88	622.07	V 2
	V 2A	464.18	485.31	483.86	533.27	600.92	626.97	622.56	595.05	558.53	V 2A
	VZ 2	448.48	473.64	499.54	544.37	587.72	585.35	571.35	518.89	459.87	VZ 2
	VZ 2A	464.17	485.30	483.83	533.18	600.49	625.99	621.12	593.51	557.63	VZ 2A
	V-THETA 2	485.72	462.62	436.58	412.57	413.05	404.01	411.29	421.92	417.38	V-THETA 2
	V-THETA 2A	-1.54	1.44	3.72	4.84	14.89	24.05	28.65	28.83	5.36	V-THETA 2A
	M 2	0.5802	0.5827	0.5851	0.6049	0.6383	0.6307	0.6228	0.5887	0.5437	M 2
	M 2A	0.4006	0.4206	0.4200	0.4656	0.5272	0.5505	0.5452	0.5192	0.4854	M 2A
	TURN(PR)	47.472	44.156	40.711	36.632	33.659	32.371	33.045	36.261	41.591	TURN(PR)
	UUBAR	0.1334	0.1007	0.1139	0.0884	0.0577	0.0083	0.0503	0.0410	0.0058	UUBAR
	LOSS PARA	0.0449	0.0343	0.0392	0.0314	0.0214	0.0032	0.0199	0.0164	0.0023	LOSS PARA
	DFAC	0.5461	0.5043	0.4955	0.4319	0.3697	0.3259	0.3334	0.3478	0.3710	DFAC
	EFFP	0.7652	0.8069	0.7842	0.8018	0.8357	0.9685	0.8039	0.8307	0.9737	EFFP
	INCID	0.311	-1.875	-4.318	-6.517	-7.151	-7.783	-7.622	-4.815	-2.314	INCID
	DEVM	12.841	13.024	13.174	12.954	13.540	14.907	16.148	16.585	14.701	DEVM
	P 2	18.750	18.800	18.855	19.265	19.950	20.015	20.055	19.610	19.040	P 2
	P 2A	18.240	18.411	18.411	18.892	19.674	19.976	19.823	19.442	19.020	P 2A
	T 2	576.770	573.920	571.810	569.620	570.720	572.620	574.910	576.160	577.000	T 2
	T 2A	576.770	573.820	571.810	569.620	570.720	572.620	574.910	576.160	577.000	T 2A
	UUBAR FS	0.0980	0.0972	0.0988	0.0690	0.0576	0.0535	0.0594	0.0908	0.1375	UUBAR FS
	P2 FS	18.600	18.784	18.790	19.177	19.950	20.240	20.100	19.835	19.570	P2 FS
	LOSS PARA FS	0.0329	0.0331	0.0340	0.0245	0.0213	0.0206	0.0235	0.0363	0.0545	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 109.59 EQUIVALENT ROTOR SPEED = 4613.73 CORRECTED WEIGHT FLOW = 118.16

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	498.11	498.11	498.11	498.11	498.11	498.11	498.11	498.11	498.11	V 0
	V 1	456.59	490.36	495.08	507.00	510.13	508.08	498.44	486.91	466.67	V 1
	VZ 0	498.10	498.11	498.11	498.10	498.07	498.02	497.97	497.95	497.93	VZ 0
	VZ 1	456.59	490.36	495.08	506.99	510.09	507.98	498.30	486.76	466.51	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4553	0.4553	0.4553	0.4553	0.4553	0.4553	0.4553	0.4553	0.4553	M 0
	M 1	0.4160	0.4480	0.4524	0.4638	0.4668	0.4648	0.4557	0.4447	0.4255	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1304	0.0	0.0	0.0	0.0	0.0	0.0	0.0411	0.1278	UUBAR
	DFAC	0.083	0.016	0.006	-0.018	-0.024	-0.020	-0.001	0.022	0.063	DFAC
	EFFP	4.0753	0.9999	0.9998	1.0001	0.9998	0.9995	0.9929	6.5371	29.2157	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.440	14.694	14.694	14.694	14.694	14.694	14.694	14.614	14.445	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -I.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	48.482	46.946	44.508	40.305	37.829	36.559	38.787	42.127	46.008	BETA 2
	BETA(PR) 1	54.157	52.540	52.611	52.958	54.173	55.589	56.973	57.862	59.228	BETA(PR) 1
	BETA(PR) 2	21.897	24.624	26.755	29.116	31.777	33.718	35.478	37.465	41.513	BETA(PR) 2
	V 1	481.95	517.66	522.81	535.81	537.97	534.75	524.63	512.44	490.85	V 1
	V 2	659.07	648.54	645.52	660.67	670.52	681.15	672.28	647.56	607.26	V 2
	VZ 1	481.93	517.65	522.81	535.76	537.71	534.13	523.68	511.39	489.73	VZ 1
	VZ 2	436.87	442.75	460.35	503.77	529.32	546.68	523.14	479.44	421.06	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	493.47	473.89	452.51	427.30	411.02	405.25	420.42	433.61	436.14	V-THETA 2
	V(PR) 1	823.0	851.1	861.0	889.4	918.8	945.5	961.3	961.9	957.8	V(PR) 1
	V(PR) 2	470.8	487.0	515.6	576.7	623.0	657.8	643.6	605.2	563.4	V(PR) 2
	VTHETA PR1	-667.2	-675.6	-684.1	-709.9	-744.8	-779.7	-805.6	-814.0	-822.4	VTHETA PR1
	VTHETA PR2	-175.6	-202.9	-232.1	-280.6	-327.9	-364.7	-372.8	-367.4	-372.7	VTHETA PR2
	U 1	667.17	675.58	684.08	709.89	744.80	779.74	805.56	814.04	822.45	U 1
	U 2	669.07	676.83	684.59	707.87	738.91	769.95	793.26	801.04	808.82	U 2
	M 1	0.4400	0.4740	0.4789	0.4914	0.4935	0.4904	0.4807	0.4690	0.4484	M 1
	M 2	0.5786	0.5705	0.5686	0.5840	0.5937	0.6025	0.5926	0.5682	0.5303	M 2
	M(PP) 1	0.7514	0.7793	0.7887	0.8157	0.8428	0.8670	0.8808	0.8804	0.8750	M(PR) 1
	M(PR) 2	0.4134	0.4285	0.4541	0.5098	0.5517	0.5819	0.5673	0.5310	0.4920	M(PR) 2
	TURN(PR)	32.260	27.915	25.957	23.845	22.404	21.888	21.523	20.431	17.758	TURN(PR)
	UUBAR	0.1894	0.2103	0.1738	0.1085	0.0683	0.0395	0.0882	0.1483	0.1948	UUBAR
	LOSS PARA	0.0510	0.0561	0.0461	0.0292	0.0187	0.0110	0.0249	0.0412	0.0516	LOSS PARA
	DFAC	0.6023	0.5914	0.5575	0.4991	0.4652	0.4474	0.4809	0.5273	0.5714	DFAC
	EFFP	0.7929	0.7800	0.8062	0.8799	0.9387	0.9563	0.9150	0.8489	0.7986	EFFP
	EFF	0.7841	0.7714	0.7987	0.8749	0.9361	0.9543	0.9111	0.8421	0.7901	EFF
	INCID	2.315	0.261	-0.079	-1.099	-1.891	-2.473	-2.469	-2.013	-1.426	INCID
	DEVM	14.147	15.326	15.835	13.412	11.089	8.854	7.923	9.328	12.629	DEVM
	P 1	14.440	14.694	14.694	14.694	14.694	14.694	14.694	14.614	14.445	P 1
	P 2	19.320	19.265	19.275	19.540	19.830	20.205	20.235	19.900	19.400	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	576.080	572.800	571.060	569.000	568.250	570.480	573.200	575.500	576.420	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-I.E.	BETA 2	47.934	46.359	43.985	39.988	37.448	36.051	38.108	41.341	45.116	BETA 2
STATOR-T.E.	BETA 2A	1.070	1.130	0.950	0.580	0.790	2.271	3.051	3.031	1.331	BETA 2A
	V 2	664.84	655.06	651.92	665.61	677.25	690.67	683.85	659.10	618.12	V 2
	V 2A	468.67	483.26	477.40	503.84	551.62	588.94	588.85	562.81	517.65	V 2A
	VZ 2	445.44	452.09	469.06	509.91	537.41	557.81	537.27	494.08	435.53	VZ 2
	VZ 2A	468.59	483.16	477.33	503.75	551.34	587.98	587.27	561.24	516.69	VZ 2A
	V-THETA 2	493.56	474.05	452.73	427.69	411.60	406.03	421.40	434.69	437.29	V-THETA 2
	V-THETA 2A	8.75	9.53	7.92	5.10	7.60	23.31	31.30	29.72	12.00	V-THETA 2A
	M 2	0.5841	0.5766	0.5746	0.5887	0.6001	0.6116	0.6036	0.5790	0.5403	M 2
	M 2A	0.4048	0.4191	0.4145	0.4391	0.4830	0.5163	0.5149	0.4902	0.4486	M 2A
	TURN(PR)	46.864	45.228	43.034	39.402	36.637	33.738	34.993	38.236	43.700	TURN(PR)
	UUBAR	0.1180	0.0718	0.0893	0.0918	0.0378	0.0282	0.0510	0.0581	0.0644	UUBAR
	LOSS PARA	0.0397	0.0244	0.0307	0.0326	0.0140	0.0108	0.0202	0.0232	0.0260	LOSS PARA
	DFAC	0.5407	0.5038	0.5028	0.4691	0.4071	0.3617	0.3663	0.3933	0.4419	DFAC
	EFFP	0.7915	0.8604	0.8289	0.8102	0.9022	0.9108	0.8288	0.8479	0.8072	EFFP
	INCID	0.963	0.158	-1.486	-3.687	-4.803	-6.347	-5.263	-2.590	0.574	INCID
	DEVM	14.101	13.984	13.684	12.914	12.910	14.977	16.557	16.835	15.481	DEVM
	P 2	19.320	19.265	19.275	19.540	19.830	20.205	20.235	19.900	19.400	P 2
	P 2A	18.850	18.986	18.930	19.165	19.668	20.078	20.010	19.665	19.175	P 2A
	T 2	576.080	572.800	571.060	569.000	568.250	570.480	573.200	575.500	576.420	T 2
	T 2A	576.080	572.800	571.060	569.000	568.250	570.480	573.200	575.050	576.420	T 2A
	UUBAR FS	0.0917	0.0893	0.0904	0.0643	0.0332	0.0398	0.0647	0.0950	0.1451	UUBAR FS
	P2 FS	19.205	19.340	19.280	19.420	19.900	20.260	20.300	20.065	19.730	P2 FS
	LOSS PARA FS	0.0308	0.0303	0.0310	0.0228	0.0197	0.0152	0.0256	0.0379	0.0585	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 110.27 EQUIVALENT ROTOR SPEED = 4642.19 CORRECTED WEIGHT FLOW = 113.37

INLET	PCT SPAN	96.61	91.52	86.39	78.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.005	35.323	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	473.09	473.09	473.09	473.09	473.09	473.09	473.07	473.09	473.09	V 0
	V 1	427.27	469.99	473.98	484.41	489.20	485.70	473.48	464.34	423.88	V 1
	VZ 0	473.09	473.09	473.09	473.08	473.05	473.00	472.96	472.94	472.92	VZ 0
	VZ 1	427.27	469.99	473.98	484.40	489.16	485.61	473.35	464.20	423.73	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4316	0.4316	0.4316	0.4316	0.4316	0.4316	0.4316	0.4316	0.4316	M 0
	M 1	0.3885	0.4287	0.4324	0.4423	0.4469	0.4435	0.4320	0.4233	0.3853	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1863	0.0	0.0	0.0	0.0	0.0	0.0	0.0295	0.2028	UUBAR
	DFAC	0.097	0.007	-0.002	-0.024	-0.034	-0.027	-0.001	0.018	0.104	DFAC
	EFFP	18.3456	0.9992	0.9982	0.9999	1.0000	1.0000	1.0067	3.8799	26.8743	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.365	14.694	14.694	14.694	14.694	14.694	14.694	14.642	14.336	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	76.91	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.005	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR-L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR-T.E.	BETA 2	49.883	48.928	47.054	42.959	40.650	38.695	40.827	44.670	49.766	BETA 2
	BETA(PR) 1	56.144	53.910	54.014	54.410	55.502	56.977	58.500	59.265	61.789	BETA(PR) 1
	BETA(PR) 2	28.455	23.839	26.420	30.012	33.261	33.807	36.288	38.586	43.944	BETA(PR) 2
	V 1	450.36	495.50	499.83	511.22	515.25	510.54	497.60	488.00	444.94	V 1
	V 2	669.78	652.18	643.46	645949	649.34	675.71	661.04	635.42	588.98	V 2
	VZ 1	450.34	495.50	499.83	511.17	515.00	509.94	496.69	487.00	443.92	VZ 1
	VZ 2	431.53	428.49	438.39	473.17	496.81	526.79	499.40	451.17	379.87	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	512.24	491.67	471.01	439.93	417.61	421.95	431.48	445.99	448.98	V-THETA 2
	V(PR) 1	808.4	841.2	850.5	876.4	909.4	936.0	951.1	953.4	939.6	V(PR) 1
	V(PR) 2	460.6	468.5	489.5	546.5	594.5	634.8	620.7	578.3	527.7	V(PR) 2
	VTHETA PR1	-671.3	-679.7	-688.3	-714.3	-749.4	-784.5	-810.5	-819.1	-827.5	VTHETA PR1
	VTHETA PR2	-161.6	-189.3	-217.8	-273.3	-325.9	-357.7	-366.7	-360.0	-364.8	VTHETA PR2
	U 1	671.28	679.75	688.23	714.26	749.39	784.55	810.53	819.06	827.52	U 1
	U 2	673.19	681.00	688.81	712.24	743.47	774.70	798.16	805.98	813.81	U 2
	M 1	0.4101	0.4529	0.4573	0.4678	0.4717	0.4672	0.4548	0.4457	0.4050	M 1
	M 2	0.5868	0.5723	0.5650	0.5683	0.5718	0.5960	0.5805	0.5557	0.5122	M 2
	M(PR) 1	0.7362	0.7688	0.7777	0.8038	0.8326	0.8566	0.8694	0.8708	0.8553	M(PR) 1
	M(PR) 2	0.4035	0.4111	0.4298	0.4811	0.5235	0.5599	0.5451	0.5057	0.4588	M(PR) 2
	TURN(PR)	35.688	30.071	27.594	24.402	22.251	23.188	22.242	20.715	17.991	TURN(PR)
	UUBAR	0.1417	0.1970	0.1779	0.1217	0.0868	0.0513	0.1011	0.1682	0.2086	UUBAR
	LOSS PARA	0.0386	0.0529	0.0474	0.0324	0.0234	0.0143	0.0283	0.0460	0.0532	LOSS PARA
	DFAC	0.6145	0.6149	0.5892	0.5513	0.4935	0.4724	0.5034	0.5559	0.6059	DFAC
	EFFP	0.8324	0.7948	0.8018	0.8561	0.8806	0.9462	0.8902	0.8309	0.7879	EFFP
	EFF	0.8245	0.7862	0.7935	0.8530	0.8754	0.9437	0.8851	0.8232	0.7786	EFF
	INCID	4.302	1.632	1.324	0.354	-0.561	-1.084	-0.940	-0.609	1.138	INCID
	DEVM	12.706	14.541	15.500	14.308	12.572	8.942	8.732	10.448	14.960	DEVM
	P 1	14.365	14.694	14.694	14.694	14.694	14.694	14.694	14.642	14.336	P 1
	P 2	19.840	19.660	19.560	19.665	19.835	20.425	20.365	20.035	19.440	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	579.500	575.930	574.360	571.680	571.730	572.930	575.980	577.760	579.270	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	78.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	49.304	48.297	46.487	42.516	39.650	38.154	40.117	43.841	48.783	BETA 2
STATOR-T.E.	BETA 2A	1.670	1.470	1.220	0.820	1.010	2.771	3.882	4.062	2.952	BETA 2A
	V 2	675.73	658.76	649.80	650.17	655.69	685.03	672.16	646.41	599.24	V 2
	V 2A	458.35	470.17	463.75	481.48	523.60	558.25	553.91	529.30	493.04	V 2A
	VZ 2	440.61	438.25	447.42	479.17	504.52	538.14	513.29	469.57	394.32	VZ 2
	VZ 2A	458.16	470.01	463.65	481.38	523.31	557.13	551.95	527.23	491.62	VZ 2A
	V-THETA 2	512.32	491.83	471.24	439.33	418.20	422.77	432.49	447.10	450.16	V-THETA 2
	V-THETA 2A	13.36	12.06	9.87	6.89	9.32	26.96	37.45	37.44	25.35	V-THETA 2A
	M 2	0.5924	0.5784	0.5709	0.5726	0.5778	0.6048	0.5910	0.5659	0.5216	M 2
	M 2A	0.3944	0.4062	0.4012	0.4179	0.4605	0.4870	0.4816	0.4586	0.4254	M 2A
	TURN(PR)	47.634	46.827	45.265	41.690	38.619	35.340	36.171	39.706	45.750	TURN(PR)
	UUBAR	0.1605	0.0978	0.0905	0.0806	0.0647	0.0666	0.0779	0.0810	0.0328	UUBAR
	LOSS PARA	0.0540	0.0333	0.0311	0.0286	0.0018	0.0256	0.0308	0.0323	0.0132	LOSS PARA
	DFAC	0.5704	0.5344	0.5309	0.4963	0.4255	0.4086	0.4102	0.4362	0.4652	DFAC
	EFFP	0.7349	0.8228	0.8497	0.8414	0.9882	0.8270	0.7869	0.7818	0.9086	EFFP
	INCID	2.333	2.096	1.015	-1.159	-2.602	-4.244	-3.256	-0.091	4.242	INCID
	DEVM	14.701	14.324	13.954	13.154	13.130	15.476	17.387	17.864	17.099	DEVM
	P 2	19.840	19.660	19.560	19.665	19.835	20.425	20.365	20.035	19.440	P 2
	P 2A	19.167	19.270	19.209	19.349	19.816	20.127	20.031	19.718	19.332	P 2A
	T 2	579.500	575.930	574.360	571.680	571.730	572.930	575.980	577.760	579.270	T 2
	T 2A	579.500	575.930	574.060	571.680	571.730	572.930	575.980	577.760	579.270	T 2A
	UUBAR FS	0.1015	0.1034	0.0986	0.0614	0.0564	0.0603	0.0832	0.1005	0.1329	UUBAR FS
	P2 FS	19.565	19.685	19.595	19.584	20.055	20.395	20.389	20.119	19.820	P2 FS
	LOSS PARA FS	0.0341	0.0352	0.0338	0.0217	0.0216	0.0231	0.0328	0.0400	0.0534	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 109.78 EQUIVALENT ROTOR SPEED = 4621.68 CORRECTED WEIGHT FLOW = 108.33

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.005	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	447.60	447.60	447.60	447.60	447.60	447.60	447.60	447.60	447.60	V 0
	V 1	405.81	444.70	446.59	456.16	461.73	455.93	443.75	433.65	399.28	V 1
	VZ 0	447.60	447.60	447.60	447.59	447.56	447.52	447.48	447.46	447.44	VZ 0
	VZ 1	405.81	444.70	446.59	456.15	461.69	455.85	443.63	433.51	399.14	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4075	0.4075	0.4075	0.4075	0.4075	0.4075	0.4075	0.4075	0.4075	M 0
	M 1	0.3684	0.4048	0.4066	0.4156	0.4209	0.4154	0.4039	0.3944	0.3623	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1826	0.0	0.0	0.0	0.0	0.0	0.0	0.0447	0.2065	UUBAR
	DFAC	0.093	0.006	0.002	-0.019	-0.032	-0.019	0.009	0.031	0.108	DFAC
	EFFP	29.5010	1.0002	0.9983	0.9999	0.9997	0.9998	0.9993	3.1209	21.6882	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.404	14.694	14.694	14.694	14.694	14.694	14.694	14.623	14.366	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.005	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	51.293	50.763	49.235	44.317	41.867	40.846	44.055	48.184	52.196	BETA 2
	BETA(PR) 1	57.407	55.322	55.540	55.955	56.961	58.540	60.057	60.885	63.111	BETA(PR) 1
	BETA(PR) 2	18.719	23.453	26.533	29.548	32.686	35.226	38.165	40.483	43.962	BETA(PR) 2
	V 1	427.30	468.22	470.25	480.52	485.48	478.46	465.67	455.09	418.73	V 1
	V 2	675.46	646.36	632.98	642.24	646.63	649.82	631.49	611.34	587.36	V 2
	VZ 1	427.29	468.21	470.25	480.47	485.24	477.90	464.82	454.16	417.77	VZ 1
	VZ 2	422.39	408.84	413.30	459.46	481.31	491.05	453.17	407.04	359.55	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	527.10	500.63	479.41	448.63	431.36	424.55	438.47	454.99	463.47	V-THETA 2
	V(PR) 1	793.2	822.9	831.1	853.2	890.1	916.0	931.7	933.8	924.2	V(PR) 1
	V(PR) 2	446.0	445.7	462.0	528.2	572.2	601.9	577.4	536.1	500.4	V(PR) 2
	VTHETA PR1	-668.3	-676.7	-685.3	-711.1	-746.1	-781.1	-806.9	-815.4	-823.9	VTHETA PR1
	VTHETA PR2	-143.1	-177.4	-206.4	-260.5	-308.8	-346.7	-356.2	-347.4	-346.8	VTHETA PR2
	U 1	668.32	676.74	685.25	711.11	746.08	781.08	806.95	815.44	823.86	U 1
	U 2	670.22	677.99	685.77	709.09	740.18	771.28	794.63	802.42	810.22	U 2
	M 1	0.3885	0.4270	0.4289	0.4386	0.4433	0.4367	0.4246	0.4146	0.3805	M 1
	M 2	0.5909	0.5655	0.5539	0.5541	0.5678	0.5703	0.5516	0.5321	0.5092	M 2
	M(PR) 1	0.7212	0.7505	0.7580	0.7834	0.8128	0.8360	0.8495	0.8507	0.8397	M(PR) 1
	M(PR) 2	0.3901	0.3899	0.4042	0.4639	0.5025	0.5282	0.5044	0.4666	0.4338	M(PR) 2
	TURN(PR)	38.688	31.869	29.007	26.410	24.285	23.334	21.925	20.441	19.198	TURN(PR)
	UUBAR	0.1290	0.1915	0.1813	0.1102	0.0895	0.0828	0.1505	0.2088	0.2284	UUBAR
	LOSS PARA	0.0355	0.0516	0.0482	0.0295	0.0242	0.0227	0.0410	0.0556	0.0581	LOSS PARA
	DFAC	0.6310	0.6373	0.6157	0.5451	0.5124	0.4977	0.5421	0.5951	0.6343	DFAC
	EFFP	0.8362	0.7848	0.7825	0.8550	0.8638	0.8748	0.8154	0.7737	0.7610	EFFP
	EFF	0.8262	0.7755	0.7734	0.8487	0.8577	0.8691	0.8071	0.7637	0.7503	EFF
	INCID	5.565	3.044	2.853	1.398	0.898	0.480	0.618	1.013	2.462	INCID
	DEVM	10.969	14.155	15.614	13.945	11.997	10.360	10.608	12.344	15.078	DEVM
	P 1	14.404	14.694	14.694	14.694	14.694	14.694	14.694	14.623	14.366	P 1
	P 2	20.165	19.830	19.665	19.885	20.015	20.205	20.075	19.835	19.565	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	581.890	578.510	576.930	573.880	574.530	575.560	578.630	580.510	582.480	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	50.675	50.108	48.634	43.968	41.452	40.288	43.307	47.288	51.132	BETA 2
STATOR-T.E.	BETA 2A	1.525	1.300	0.951	1.570	1.966	3.076	3.822	3.777	3.572	BETA 2A
	V 2	681.51	652.71	639.13	646.87	652.81	658.45	641.58	621.54	597.55	V 2
	V 2A	444.37	453.59	450.24	464.87	515.16	531.30	520.37	503.83	474.20	V 2A
	VZ 2	431.88	418.60	422.35	465.52	489.07	501.79	466.26	421.07	374.52	VZ 2
	VZ 2A	444.22	453.48	450.17	464.64	514.65	530.09	518.57	502.03	472.54	VZ 2A
	V-THETA 2	527.19	500.79	479.64	449.04	431.97	425.37	439.50	456.12	464.69	V-THETA 2
	V-THETA 2A	11.83	10.29	7.46	12.74	17.66	28.49	34.64	33.14	29.50	V-THETA 2A
	M 2	0.5965	0.5714	0.5595	0.5684	0.5736	0.5783	0.5610	0.5415	0.5185	M 2
	M 2A	0.3812	0.3906	0.3881	0.4022	0.4471	0.4613	0.4502	0.4346	0.4074	M 2A
	TURN(PR)	49.150	48.808	47.683	42.392	39.466	37.169	39.421	43.439	47.481	TURN(PR)
	UUBAR	0.2041	0.1209	0.0921	0.1168	0.0290	0.0354	0.0451	0.0388	0.0519	UUBAR
	LOSS PARA	0.0687	0.0411	0.0317	0.0415	0.0107	0.0136	0.0178	0.0155	0.0209	LOSS PARA
	DFAC	0.6027	0.5610	0.5501	0.5215	0.4466	0.4263	0.4405	0.4633	0.5023	DFAC
	EFFP	0.6820	0.7909	0.8362	0.7841	0.9323	0.9108	0.8832	0.8991	0.8735	EFFP
	INCID	3.704	3.907	3.163	0.292	-0.799	-2.111	-0.066	3.356	6.593	INCID
	DEVM	14.556	14.154	13.684	13.904	14.085	15.781	17.327	17.579	17.718	DEVM
	P 2	20.165	19.830	19.665	19.885	20.015	20.205	20.075	19.835	19.565	P 2
	P 2A	19.285	19.354	19.318	19.428	19.899	20.060	19.901	19.696	19.395	P 2A
	T 2	581.890	578.510	576.930	573.880	574.530	575.560	578.630	580.510	582.480	T 2
	T 2A	581.890	578.510	576.930	573.880	574.530	575.560	578.630	580.510	582.480	T 2A
	UUBAR FS	0.1293	0.1037	0.0957	0.0876	0.0629	0.0716	0.0992	0.1002	0.1102	UUBAR FS
	P2 FS	19.795	19.755	19.680	19.760	20.160	20.365	20.307	20.080	19.780	P2 FS
	LOSS PARA FS	0.0435	0.0352	0.0329	0.0311	0.0232	0.0275	0.0391	0.0400	0.0443	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES
PERCENT EQUIVALENT ROTOR SPEED = 109.92 EQUIVALENT ROTOR SPEED = 4627.58 CORRECTED WEIGHT FLOW = 103.91

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.133	33.570	34.005	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	425.91	425.91	425.91	425.91	425.91	425.91	425.91	425.91	425.91	V 0
	V 1	388.04	422.62	428.41	437.14	440.76	434.18	423.32	410.52	375.40	V 1
	VZ 0	425.91	425.91	425.91	425.90	425.87	425.83	425.79	425.78	425.76	VZ 0
	VZ 1	388.04	422.62	428.41	437.13	440.72	434.10	423.20	410.39	375.27	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3872	0.3872	0.3872	0.3872	0.3872	0.3872	0.3872	0.3872	0.3872	M 0
	M 1	0.3519	0.3841	0.3895	0.3977	0.4011	0.3949	0.3848	0.3728	0.3401	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1815	0.0	0.0	0.0	0.0	0.0	0.0	0.0540	0.2210	UUBAR
	DFAC	0.089	0.008	-0.005	-0.026	-0.035	-0.019	0.006	0.036	0.119	DFAC
	EFFP	-87.5760	0.9992	1.0008	0.9996	1.0000	1.0001	0.9997	3.5146	16.8584	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.432	14.694	14.694	14.694	14.694	14.694	14.694	14.616	14.375	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.005	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	52.521	51.916	50.317	45.729	43.389	42.704	47.884	52.697	57.562	BETA 2
	BETA(PR) 1	58.609	56.736	55.700	57.133	58.224	59.830	61.264	62.254	64.560	BETA(PR) 1
	BETA(PR) 2	16.972	24.824	28.070	30.760	33.822	36.319	39.820	41.696	44.184	BETA(PR) 2
	V 1	468.33	444.50	450.71	460.08	462.98	455.16	443.81	430.38	393.31	V 1
	V 2	695.28	633.27	618.54	627.55	631.65	634.47	612.36	602.39	594.80	V 2
	VZ 1	468.32	444.49	450.71	460.04	462.75	454.63	443.01	429.49	392.41	VZ 1
	VZ 2	416.97	391.48	394.95	438.01	458.82	465.79	410.16	364.64	318.72	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	543.82	497.77	476.02	449.30	433.72	429.87	453.67	478.61	501.49	V-THETA 2
	V(PR) 1	783.9	810.4	820.9	847.7	878.9	904.9	921.8	923.0	913.9	V(PR) 1
	V(PP) 2	436.0	431.3	447.5	509.8	552.6	578.8	534.9	489.2	445.3	V(PR) 2
	VTHETA PR1	-669.2	-677.6	-686.1	-712.0	-747.0	-782.1	-808.0	-816.5	-824.9	VTHETA PR1
	VTHETA PR2	-127.3	-181.1	-210.5	-269.7	-307.4	-342.4	-342.0	-324.8	-309.8	VTHETA PR2
	U 1	669.17	677.61	686.13	712.02	747.04	782.08	807.98	816.48	824.92	U 1
	U 2	671.07	678.86	686.65	710.00	741.13	772.26	795.65	803.44	811.25	U 2
	M 1	0.3708	0.4046	0.4105	0.4193	0.4220	0.4147	0.4040	0.3914	0.3568	M 1
	M 2	0.6007	0.5540	0.5414	0.5513	0.5547	0.5567	0.5344	0.5242	0.5161	M 2
	M(PR) 1	0.7118	0.7377	0.7475	0.7726	0.8011	0.8244	0.8391	0.8393	0.8290	M(PR) 1
	M(PR) 2	0.3821	0.3773	0.3913	0.4478	0.4853	0.5078	0.4668	0.4257	0.3863	M(PR) 2
	TURN(PR)	41.636	31.912	28.633	26.376	24.411	23.533	21.479	20.600	20.426	TURN(PR)
	UUBAR	0.1231	0.1887	0.1773	0.1189	0.0981	0.0984	0.1997	0.2579	0.2836	UUBAR
	LOSS PARA	0.0342	0.0503	0.0464	0.0314	0.0262	0.0267	0.0532	0.0674	0.0719	LOSS PARA
	DFAC	0.6456	0.6483	0.6271	0.5614	0.5294	0.5190	0.5890	0.6500	0.7051	DFAC
	EFFP	0.8886	0.8851	0.8883	0.8789	0.8952	0.8949	0.8118	0.7851	0.7913	EFFP
	EFF	0.8829	0.7766	0.8003	0.8736	0.8852	0.8900	0.8035	0.7756	0.7817	EFF
	INCID	6.767	4.458	4.010	3.077	2.161	1.771	1.827	2.384	3.913	INCID
	DEVM	9.223	15.526	17.150	15.356	13.134	11.452	12.262	13.556	15.300	DEVM
	P 1	14.432	14.694	14.694	14.694	14.694	14.694	14.694	14.616	14.375	P 1
	P 2	20.510	19.855	19.685	19.865	20.015	20.195	19.960	19.855	19.800	P 2
	T 1	516.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	580.760	577.180	575.180	572.120	572.790	574.130	577.740	579.870	582.270	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	51.863	51.149	49.705	45.371	42.962	42.131	47.057	51.666	56.261	BETA 2
STATOR-T.E.	BETA 2A	0.940	1.515	1.095	1.885	2.880	3.076	3.351	3.682	3.412	BETA 2A
	V 2	691.53	639.38	624.42	631.98	637.57	642.62	621.89	612.31	605.22	V 2
	V 2A	452.47	457.17	449.92	458.21	502.65	508.72	484.83	471.78	458.60	V 2A
	VZ 2	427.05	401.08	403.82	443.93	466.38	476.15	423.20	379.39	335.83	VZ 2
	VZ 2A	452.40	457.01	449.83	457.91	501.82	507.56	483.39	470.14	457.07	VZ 2A
	V-THETA 2	543.91	497.94	476.25	449.71	434.33	430.70	454.73	479.80	502.81	V-THETA 2
	V-THETA 2A	7.42	12.09	9.60	15.07	25.25	27.28	28.31	30.25	27.25	V-THETA 2A
	M 2	0.6066	0.5597	0.5468	0.5554	0.5603	0.5643	0.5432	0.5333	0.5256	M 2
	M 2A	0.3888	0.3942	0.3884	0.3969	0.4366	0.4415	0.4186	0.4062	0.3937	M 2A
	TURN(PP)	50.923	49.634	48.609	43.480	40.061	39.012	43.640	47.913	52.774	TURN(PR)
	UUBAR	0.2194	0.0794	0.0511	0.0850	0.0089	0.0456	0.0686	0.0770	0.1021	UUBAR
	LOSS PARA	0.0738	0.0270	0.0175	0.0302	0.0033	0.0175	0.0272	0.0307	0.0412	LOSS PARA
	DFAC	0.6070	0.5438	0.5375	0.5199	0.4590	0.4513	0.4937	0.5249	0.5614	DFAC
	EFFP	0.6571	0.8548	0.9043	0.8396	0.9793	0.8917	0.8433	0.8295	0.7828	EFFP
	INCID	4.892	4.948	4.235	1.696	0.710	-0.264	3.684	7.735	11.726	INCID
	DEVM	13.971	14.369	13.829	14.219	14.999	15.782	16.857	17.484	17.558	DEVM
	P 2	20.510	19.855	19.685	19.865	20.015	20.195	19.960	19.855	19.800	P 2
	P 2A	19.520	19.553	19.503	19.546	19.981	20.016	19.711	19.586	19.453	P 2A
	T 2	580.760	577.180	575.180	572.120	572.790	574.130	577.740	579.870	582.270	T 2
	T 2A	580.760	577.180	575.180	572.120	572.790	574.130	577.740	579.870	582.270	T 2A
	UUBAR FS	0.1344	0.2011	0.1270	0.0910	0.0817	0.0929	0.1241	0.1149	0.1047	UUBAR FS
	P2 FS	20.067	20.435	20.000	19.889	20.319	20.400	20.190	20.005	19.810	P2 FS
	LOSS PARA FS	0.0452	0.0683	0.0437	0.0323	0.0302	0.0356	0.0492	0.0458	0.0422	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 99.97 EQUIVALENT ROTOR SPEED = 4208.61 CORRECTED WEIGHT FLOW = 121.01

INLET GUIDE VANE	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
I.G.V.-L.E.	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
I.G.V.-T.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	513.42	513.42	513.42	513.42	513.42	513.42	513.42	513.42	513.42	V 0
	V 1	474.01	520.24	523.15	527.42	520.05	518.21	511.56	499.08	465.53	V 1
	VZ 0	513.42	513.42	513.42	513.41	513.38	513.33	513.28	513.26	513.25	VZ 0
	VZ 1	474.01	520.24	523.15	527.41	520.00	518.11	511.42	498.92	465.37	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4699	0.4699	0.4699	0.4699	0.4699	0.4699	0.4699	0.4699	0.4699	M 0
	M 1	0.4325	0.4765	0.4792	0.4833	0.4763	0.4745	0.4682	0.4563	0.4244	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1842	0.0	0.0	0.0	0.0	0.0	0.0	0.0451	0.1798	UUBAR
	DFAC	0.377	-0.013	-0.019	-0.027	-0.013	-0.009	0.004	0.028	0.093	DFAC
	EFFP	-6.5941	0.9999	0.9996	0.9999	0.9997	1.0007	0.9984	3.9376	15.0880	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.314	14.694	14.694	14.694	14.694	14.694	14.694	14.601	14.323	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	43.944	39.272	34.962	32.525	32.267	31.314	31.657	33.729	38.472	BETA 2
	BETA(PR) 1	50.545	48.239	48.427	49.241	51.086	52.534	53.796	54.763	56.930	BETA(PR) 1
	BETA(PR) 2	23.064	23.516	23.443	24.838	28.345	31.783	33.966	36.492	41.653	BETA(PR) 2
	V 1	500.89	550.26	553.49	558.19	548.75	545.75	538.87	525.62	489.63	V 1
	V 2	610.00	636.58	672.64	695.98	681.24	670.39	660.22	625.63	560.78	V 2
	VZ 1	500.88	550.25	553.49	558.14	548.48	545.11	537.89	524.54	488.51	VZ 1
	VZ 2	439.21	492.81	551.24	586.72	575.68	571.96	560.84	519.19	438.09	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	423.31	402.95	385.44	374.14	363.47	347.95	345.80	346.63	348.12	V-THETA 2
	V(PR) 1	788.2	826.2	834.1	854.9	873.3	896.5	911.2	909.8	895.9	V(PR) 1
	V(PR) 2	477.4	537.4	600.8	646.7	654.5	673.8	677.5	647.1	587.5	V(PR) 2
	VTHETA PR1	-608.6	-616.3	-624.0	-647.6	-679.4	-711.3	-734.8	-742.6	-750.2	VTHETA PR1
	VTHETA PR2	-187.0	-214.4	-239.0	-271.6	-310.6	-354.4	-377.8	-384.1	-389.7	VTHETA PR2
	U 1	608.58	616.26	624.01	647.55	679.40	711.27	734.83	742.56	750.23	U 1
	U 2	610.32	617.40	624.48	645.72	674.03	702.35	723.61	730.70	737.80	U 2
	M 1	0.4580	0.5053	0.5084	0.5130	0.5039	0.5010	0.4943	0.4816	0.4473	M 1
	M 2	0.5381	0.5636	0.5985	0.6222	0.6076	0.5969	0.5869	0.5541	0.4934	M 2
	M(PR) 1	0.7207	0.7587	0.7662	0.7857	0.8019	0.8230	0.8359	0.8336	0.8184	M(PR) 1
	M(PR) 2	0.4211	0.4758	0.5346	0.5781	0.5838	0.5999	0.6023	0.5731	0.5169	M(PR) 2
	TURN(PR)	27.481	24.722	24.985	24.405	22.747	20.766	19.855	18.301	15.317	TURN(PR)
	UUBAR	0.3153	0.2853	0.1725	0.0815	0.0881	0.0830	0.1047	0.1596	0.2253	UUBAR
	LOSS PARA	0.0842	0.0768	0.0470	0.0227	0.0249	0.0237	0.0301	0.0449	0.0595	LOSS PARA
	DFAC	0.5505	0.4929	0.4170	0.3780	0.3839	0.3781	0.3870	0.4210	0.4804	DFAC
	EFFP	0.5964	0.5832	0.7029	0.8499	0.8366	0.8249	0.8059	0.7398	0.6603	EFFP
	EFF	0.5859	0.5728	0.6943	0.8448	0.8311	0.8190	0.7993	0.7318	0.6509	EFF
	INCID	-1.297	-4.040	-4.263	-4.815	-4.978	-5.528	-5.648	-5.115	-3.726	INCID
	DEVM	15.314	14.218	12.524	9.135	7.659	6.920	6.413	8.356	12.770	DEVM
	P 1	14.314	14.694	14.694	14.694	14.694	14.694	14.694	14.601	14.323	P 1
	P 2	17.165	17.480	18.000	18.560	18.565	18.565	18.510	18.065	17.370	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	565.860	564.750	563.300	561.070	561.820	562.460	562.950	563.150	563.850	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	43.507	38.834	34.566	32.266	31.947	30.901	31.140	33.165	37.827	BETA 2
STATOR-T.E.	BETA 2A	-0.220	0.050	0.490	1.170	0.960	1.140	1.141	1.121	0.961	BETA 2A
	V 2	614.99	642.82	679.70	701.58	688.27	679.65	671.46	636.43	570.22	V 2
	V 2A	482.29	516.99	525.78	606.16	633.75	630.02	621.13	598.73	562.52	V 2A
	VZ 2	446.05	500.73	559.71	593.15	583.70	582.48	573.68	531.73	449.54	VZ 2
	VZ 2A	482.29	516.98	525.76	605.97	633.40	629.37	620.23	597.78	561.56	VZ 2A
	V-THETA 2	423.38	403.09	385.63	374.48	363.99	348.62	346.61	347.49	349.04	V-THETA 2
	V-THETA 2A	-1.85	0.45	4.50	12.38	10.62	12.53	12.35	11.69	9.41	V-THETA 2A
	M 2	0.5427	0.5694	0.6053	0.6276	0.6143	0.6057	0.5976	0.5643	0.5021	M 2
	M 2A	0.4209	0.4528	0.4615	0.5369	0.5624	0.5586	0.5500	0.5289	0.4950	M 2A
	TURN(PR)	43.726	38.784	34.076	31.090	30.967	29.720	29.939	31.974	36.783	TURN(PR)
	UUBAR	0.0733	0.0727	0.1771	0.0834	0.0122	0.0400	0.0811	0.0479	-0.0546	UUBAR
	LOSS PARA	0.0237	0.0248	0.0610	0.0296	0.0045	0.0154	0.0321	0.0191	-0.0220	LOSS PARA
	DFAC	0.4487	0.4091	0.4196	0.3198	0.2700	0.2643	0.2733	0.2715	0.2553	DFAC
	EFFP	0.8364	0.8175	0.6098	0.7162	0.9311	0.7547	0.5109	0.6339	2.8180	EFFP
	INCID	-3.465	-7.367	-10.904	-11.409	-10.303	-11.493	-12.226	-10.761	-6.712	INCID
	DEVM	12.811	12.904	13.224	13.504	13.080	13.847	14.649	14.927	15.111	DEVM
	P 2	17.165	17.480	18.000	18.560	18.565	18.565	18.510	18.065	17.370	P 2
	P 2A	16.946	17.229	17.301	18.199	18.514	18.402	18.188	17.897	17.520	P 2A
	T 2	565.860	564.750	563.300	561.070	561.820	562.460	562.950	563.150	563.850	T 2
	T 2A	565.860	564.750	563.300	561.070	561.820	562.460	562.950	563.150	563.850	T 2A
	UUBAR FS	0.0949	0.1101	0.1007	0.0834	0.0541	0.0751	0.0764	0.0843	0.1619	UUBAR FS
	P2 FS	17.250	17.625	17.665	18.560	18.750	18.720	18.490	18.205	18.080	P2 FS
	LOSS PARA FS	0.0319	0.0375	0.0346	0.0296	0.0199	0.0289	0.0302	0.0336	0.0652	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 99.68 EQUIVALENT ROTOR SPEED = 4196.37 CORRECTED WEIGHT FLOW = 102.81

INLET											
	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
I.G.V.-L.E.	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
I.G.V.-T.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	420.60	420.60	420.60	420.60	420.60	420.60	420.60	420.60	420.60	V 0
	V 1	355.30	410.97	417.34	425.92	430.01	427.70	418.61	411.48	394.69	V 1
	VZ 0	420.60	420.60	420.60	420.59	420.57	420.52	420.48	420.47	420.45	VZ 0
	VZ 1	355.30	410.97	417.34	425.92	429.97	427.63	418.49	411.35	394.55	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3822	0.3822	0.3822	0.3822	0.3822	0.3822	0.3822	0.3822	0.3822	M 0
	M 1	0.3215	0.3732	0.3792	0.3872	0.3910	0.3889	0.3804	0.3737	0.3580	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.2903	0.0149	0.0	0.0	0.0	0.0	0.0	0.0234	0.1001	UUBAR
	DFAC	0.155	0.023	0.008	-0.013	-0.022	-0.017	0.005	0.022	0.062	DFAC
	EFFP	31.1193	1.4476	1.0005	0.9995	0.9997	0.9996	1.0003	2.0511	4.7815	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.285	14.673	14.694	14.694	14.694	14.694	14.694	14.661	14.553	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	49.366	48.464	46.309	42.914	40.215	39.557	40.601	44.273	48.483	BETA 2
	BETA(PR) 1	58.396	54.890	54.805	55.245	56.332	57.736	59.130	59.824	61.103	BETA(PR) 1
	BETA(PR) 2	19.195	22.784	25.739	28.260	31.578	35.954	36.913	37.533	40.525	BETA(PR) 2
	V 1	373.39	432.01	438.83	448.04	451.46	448.24	438.78	431.40	413.84	V 1
	V 2	617.43	599.38	589.60	599.23	603.03	586.15	591.81	584.67	560.15	V 2
	VZ 1	373.37	432.01	438.83	447.99	451.24	447.72	437.99	430.52	412.89	VZ 1
	VZ 2	402.08	397.44	407.28	438.81	460.26	451.42	448.61	417.96	370.71	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	468.56	448.66	426.32	407.97	389.16	372.88	384.52	407.48	418.76	V-THETA 2
	V(PR) 1	712.5	751.1	761.4	785.9	814.1	839.0	854.0	856.9	854.9	V(PR) 1
	V(PR) 2	425.8	431.1	452.1	498.3	540.6	558.3	562.1	528.1	488.7	V(PR) 2
	VTHETA PR1	-606.8	-614.5	-622.2	-645.7	-677.4	-709.2	-732.7	-740.4	-748.0	VTHETA PR1
	VTHETA PR2	-140.0	-166.9	-196.3	-235.9	-282.9	-327.4	-337.0	-321.1	-316.9	VTHETA PR2
	U 1	606.81	614.47	622.19	645.67	677.42	709.20	732.69	740.40	748.05	U 1
	U 2	608.54	615.60	622.66	643.84	672.07	700.30	721.51	728.58	735.66	U 2
	M 1	0.3383	0.3929	0.3993	0.4080	0.4112	0.4081	0.3993	0.3923	0.3759	M 1
	M 2	0.5436	0.5283	0.5200	0.5301	0.5335	0.5174	0.5214	0.5140	0.4905	M 2
	M(PR) 1	0.6455	0.6831	0.6928	0.7156	0.7414	0.7639	0.7771	0.7793	0.7765	M(PR) 1
	M(PR) 2	0.3748	0.3800	0.3988	0.4408	0.4783	0.4929	0.4952	0.4643	0.4279	M(PR) 2
	TURN(PR)	39.200	32.106	29.067	26.989	24.763	21.802	22.248	22.327	20.622	TURN(PR)
	UUBAR	0.0832	0.1737	0.1555	0.1093	0.0750	0.0835	0.1021	0.1624	0.2120	UUBAR
	LOSS PARA	0.0228	0.0470	0.0416	0.0296	0.0206	0.0227	0.0283	0.0451	0.0570	LOSS PARA
	DFAC	0.5937	0.6017	0.5726	0.5254	0.4891	0.4829	0.4967	0.5488	0.6001	DFAC
	EFFP	0.8860	0.8235	0.8276	0.9001	0.9228	0.8934	0.8776	0.8439	0.7954	EFFP
	EFF	0.8813	0.8172	0.8216	0.8965	0.9199	0.8895	0.8729	0.8380	0.7878	EFF
	INCID	6.554	2.612	2.115	1.189	0.269	-0.324	-0.310	-0.050	0.451	INCID
	DEVM	11.446	13.486	14.819	12.556	10.890	11.088	9.357	9.396	11.642	DEVM
	P 1	14.285	14.673	14.694	14.694	14.694	14.694	14.694	14.661	14.553	P 1
	P 2	19.005	18.830	18.725	18.890	19.035	18.950	19.135	19.070	18.820	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	568.720	565.590	563.980	561.750	561.980	562.660	565.270	566.990	568.890	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	48.834	47.894	45.793	42.601	39.847	39.077	39.970	43.511	47.572	BETA 2
STATOR-T.E.	BETA 2A	0.700	2.205	2.125	1.675	1.575	2.216	3.236	3.467	3.547	BETA 2A
	V 2	622.52	604.95	595.02	603.33	608.50	593.24	600.84	594.17	569.62	V 2
	V 2A	425.28	438.06	433.17	447.92	487.46	507.37	497.06	475.33	441.57	V 2A
	VZ 2	409.77	405.61	414.88	444.05	466.97	460.08	459.81	430.29	383.77	VZ 2
	VZ 2A	425.25	437.74	432.86	447.68	487.08	506.57	495.64	473.79	440.03	VZ 2A
	V-THETA 2	468.64	448.81	426.52	408.34	389.71	373.60	385.42	408.49	419.87	V-THETA 2
	V-THETA 2A	5.20	16.85	16.06	13.09	13.39	19.60	28.03	28.70	27.27	V-THETA 2A
	M 2	0.5483	0.5335	0.5250	0.5339	0.5386	0.5240	0.5298	0.5228	0.4992	M 2
	M 2A	0.3687	0.3812	0.3774	0.3914	0.4271	0.4449	0.4345	0.4142	0.3832	M 2A
	TURN(PR)	48.134	45.689	43.668	40.920	38.251	36.818	36.669	39.972	43.944	TURN(PR)
	UUBAR	0.1808	0.1146	0.1023	0.1149	0.0507	-0.0309	0.0709	0.1206	0.1477	UUBAR
	LOSS PARA	0.0609	0.0390	0.0352	0.0408	0.0188	-0.0119	0.0280	0.0482	0.0595	LOSS PARA
	DFAC	0.5676	0.5191	0.5097	0.4909	0.4287	0.3756	0.4098	0.4572	0.5048	DFAC
	EFFP	0.6924	0.7820	0.8027	0.7684	0.8732	1.1027	0.7981	0.6963	0.6608	EFFP
	INCID	1.863	1.693	0.323	-1.075	-2.405	-3.321	-3.403	-0.421	3.031	INCID
	DEVM	13.731	15.059	14.859	14.009	13.695	14.922	16.742	17.270	17.693	DEVM
	P 2	19.005	18.830	18.725	18.890	19.035	18.950	19.135	19.070	18.820	P 2
	P 2A	18.370	18.450	18.397	18.507	18.862	19.050	18.899	18.679	18.385	P 2A
	T 2	568.720	565.590	563.980	561.750	561.980	562.660	565.270	566.990	568.890	T 2
	T 2A	568.720	565.590	563.980	561.750	561.980	562.660	565.270	566.990	568.890	T 2A
	UUBAR FS	0.1084	0.1051	0.0895	0.0644	0.0617	0.0498	0.0900	0.0983	0.1208	UUBAR FS
	P2 FS	18.720	18.795	18.680	18.709	19.075	19.224	19.205	18.990	18.730	P2 FS
	LOSS PARA FS	0.0365	0.0357	0.0307	0.0228	0.0228	0.0191	0.0355	0.0392	0.0486	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 99.80 EQUIVALENT ROTOR SPEED = 4201.45 CORRECTED WEIGHT FLOW = 97.00

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	393.07	393.07	393.07	393.07	393.07	393.07	393.07	393.07	393.07	V 0
	V 1	357.69	390.79	393.08	399.93	434.08	398.27	388.61	386.45	345.36	V 1
	VZ 0	393.07	393.07	393.07	393.06	393.04	393.00	392.96	392.94	392.93	VZ 0
	VZ 1	357.69	390.79	393.08	399.92	434.05	398.19	388.51	386.33	345.24	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3565	0.3565	0.3565	0.3565	0.3565	0.3565	0.3565	0.3565	0.3565	M 0
	M 1	0.3237	0.3544	0.3565	0.3629	0.3948	0.3614	0.3524	0.3504	0.3124	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1691	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2136	UUBAR
	DFAC	0.090	0.006	-0.000	-0.017	-0.104	-0.013	0.011	0.017	0.121	DFAC
	EFFP	16.2612	1.0002	1.1667	0.9999	0.9999	1.0004	0.9995	1.0002	9.6296	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.485	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.430	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	52.163	51.107	49.619	45.678	42.945	42.102	46.013	50.005	54.961	BETA 2
	BETA(PR) 1	58.253	56.287	56.460	56.975	56.109	59.609	61.027	61.410	64.288	BETA(PR) 1
	BETA(PR) 2	17.228	22.959	26.064	28.089	32.265	34.311	37.043	39.427	43.618	BETA(PR) 2
	V 1	375.93	410.51	412.94	420.25	455.83	416.93	406.92	404.83	361.47	V 1
	V 2	621.73	590.19	577.97	592.37	588.75	596.43	581.64	564.22	539.89	V 2
	VZ 1	375.92	410.50	412.94	420.21	455.60	416.45	406.18	404.00	360.64	VZ 1
	VZ 2	381.39	370.56	374.45	413.84	430.77	442.08	403.40	362.16	309.60	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	491.01	459.36	440.27	423.75	400.93	399.47	417.92	431.69	441.53	V-THETA 2
	V(PR) 1	714.4	739.6	747.4	771.0	817.2	823.4	838.9	844.6	831.6	V(PR) 1
	V(PR) 2	399.3	402.4	416.8	469.2	509.8	535.9	506.3	469.7	428.5	V(PR) 2
	VTHETA PR1	-607.5	-615.2	-622.9	-646.5	-678.2	-710.1	-733.6	-741.3	-749.0	VTHETA PR1
	VTHETA PR2	-118.3	-157.0	-183.1	-220.9	-272.0	-301.7	-304.5	-297.8	-295.0	VTHETA PR2
	U 1	607.55	615.21	622.95	646.45	678.24	710.06	733.57	741.29	748.95	U 1
	U 2	609.28	616.35	623.42	644.62	672.88	701.15	722.38	729.46	736.55	U 2
	M 1	0.3406	0.3728	0.3751	0.3819	0.4153	0.3788	0.3694	0.3675	0.3272	M 1
	M 2	0.5464	0.5185	0.5081	0.5227	0.5193	0.5260	0.5107	0.4937	0.4706	M 2
	M(PR) 1	0.6473	0.6716	0.6788	0.7007	0.7445	0.7481	0.7616	0.7667	0.7529	M(PR) 1
	M(PR) 2	0.3509	0.3535	0.3664	0.4140	0.4496	0.4726	0.4445	0.4111	0.3735	M(PR) 2
	TURN(PR)	41.024	33.327	30.397	28.888	23.854	25.318	24.017	22.022	20.720	TURN(PR)
	UUBAR	0.1440	0.1972	0.1870	0.1232	0.0921	0.0905	0.1671	0.2277	0.2488	UUBAR
	LOSS PARA	0.0399	0.0533	0.0499	0.0334	0.0251	0.0251	0.0462	0.0616	0.0637	LOSS PARA
	DFAC	0.6409	0.6385	0.6174	0.5603	0.5334	0.5112	0.5678	0.6213	0.6709	DFAC
	EFFP	0.8443	0.7859	0.7934	0.8879	0.8950	0.9150	0.8449	0.7881	0.7759	EFFP
	EFF	0.8379	0.7781	0.7861	0.8837	0.8910	0.9116	0.8389	0.7802	0.7673	EFF
	INCID	6.411	4.008	3.770	2.918	0.046	1.549	1.589	1.539	3.641	INCID
	DEVM	9.479	13.661	15.145	12.386	11.576	9.445	9.487	11.288	14.734	DEVM
	P 1	14.485	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.430	P 1
	P 2	19.250	18.890	18.760	19.040	19.090	19.300	19.220	19.060	18.820	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	571.100	568.300	566.400	563.800	563.900	564.800	568.000	570.000	572.000	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	51.573	50.491	49.051	45.338	42.549	41.570	45.268	49.117	53.856	BETA 2
STATOR-T.E.	BETA 2A	2.900	2.770	2.630	2.620	2.780	3.201	3.721	3.742	3.592	BETA 2A
	V 2	626.88	595.60	583.20	596.38	593.98	603.74	590.38	573.07	548.78	V 2
	V 2A	411.48	422.03	417.04	426.02	467.15	480.11	465.20	450.03	429.82	V 2A
	VZ 2	389.62	378.92	382.22	419.17	437.40	451.27	415.00	374.64	323.34	VZ 2
	VZ 2A	410.95	421.53	416.60	425.52	466.41	478.96	463.64	448.44	428.30	VZ 2A
	V-THETA 2	491.10	459.52	440.48	424.14	401.50	400.24	418.90	432.76	442.69	V-THETA 2
	V-THETA 2A	20.82	20.39	19.14	19.47	22.65	26.78	30.16	29.33	26.88	V-THETA 2A
	M 2	0.5512	0.5235	0.5129	0.5264	0.5241	0.5328	0.5188	0.5019	0.4787	M 2
	M 2A	0.3557	0.3660	0.3621	0.3710	0.4080	0.4193	0.4046	0.3904	0.3717	M 2A
	TURN(PR)	48.673	47.721	46.420	42.712	39.748	38.326	41.481	45.303	50.187	TURN(PR)
	UUBAR	0.1894	0.0839	0.0568	0.1221	0.0338	0.0619	0.1009	0.1029	0.0878	UUBAR
	LOSS PARA	0.0637	0.0285	0.0195	0.0433	0.0125	0.0238	0.0399	0.0411	0.0354	LOSS PARA
	DFAC	0.5963	0.5426	0.5338	0.5273	0.4505	0.4441	0.4745	0.4980	0.5246	DFAC
	EFFP	0.6977	0.8472	0.8914	0.7735	0.9204	0.8487	0.7523	0.7550	0.7912	EFFP
	INCID	4.602	4.290	3.580	1.662	0.297	-0.829	1.894	5.186	9.319	INCID
	DEVM	15.931	15.624	15.364	14.954	14.899	15.906	17.227	17.544	17.738	DEVM
	P 2	19.250	18.890	18.760	19.040	19.090	19.300	19.220	19.060	18.820	P 2
	P 2A	18.570	18.620	18.585	18.640	18.980	19.090	18.895	18.750	18.580	P 2A
	T 2	571.100	568.300	566.400	563.800	563.900	564.800	568.000	570.000	572.000	T 2
	T 2A	571.100	568.300	566.450	563.800	563.900	564.800	568.100	570.000	572.000	T 2A
	UUBAR FS	0.1332	0.1349	0.1162	0.0836	0.0715	0.0660	0.1043	0.1003	0.1108	UUBAR FS
	P2 FS	19.017	19.080	18.967	18.902	19.222	19.315	19.232	19.055	18.890	P2 FS
	LOSS PARA FS	0.0447	0.0458	0.0398	0.0296	0.0264	0.0253	0.0412	0.0400	0.0445	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 98.97 EQUIVALENT ROTOR SPEED = 4166.62 CORRECTED WEIGHT FLOW = 92.70

INLET GUIDE VANE	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
I.G.V.-L.E.	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
I.G.V.-T.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	373.26	373.26	373.26	373.26	373.26	373.26	373.26	373.26	373.26	V 0
	V 1	333.70	375.40	377.61	383.09	387.70	379.72	372.17	369.18	322.24	V 1
	VZ 0	373.26	373.26	373.26	373.26	373.23	373.20	373.16	373.15	373.13	VZ 0
	VZ 1	333.70	375.40	377.61	383.08	387.67	379.65	372.07	369.07	322.13	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3382	0.3382	0.3382	0.3382	0.3382	0.3382	0.3382	0.3382	0.3382	M 0
	M 1	0.3016	0.3431	0.3422	0.3473	0.3515	0.3441	0.3371	0.3344	0.2911	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.7093	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2451	UUBAR
	DFAC	0.106	-0.006	-0.012	-0.026	-0.039	-0.017	0.003	0.011	0.137	DFAC
	EFFP	-800.5999	0.9982	0.9999	0.9996	0.9997	0.9993	1.0011	1.0001	13.4932	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.460	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.420	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	55.674	53.407	51.660	46.996	44.340	43.578	49.923	54.187	58.563	BETA 2
	BETA(PR) 1	59.818	57.142	57.312	57.896	58.873	60.602	61.883	62.318	65.642	BETA(PR) 1
	BETA(PR) 2	23.286	24.702	26.124	27.060	32.408	35.140	37.412	39.577	41.687	BETA(PR) 2
	V 1	350.43	394.07	396.42	402.26	406.38	397.22	389.44	386.46	337.04	V 1
	V 2	555.47	567.48	567.96	592.14	579.04	580.38	570.30	559.39	554.87	V 2
	VZ 1	350.42	394.07	396.42	402.22	406.18	396.76	388.73	385.67	336.27	VZ 1
	VZ 2	318.87	338.29	352.32	403.82	413.95	420.04	366.74	326.97	289.12	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	466.99	455.63	445.47	432.99	404.52	399.69	435.87	453.14	472.97	V-THETA 2
	V(PR) 1	697.0	726.3	734.0	756.8	785.9	808.5	825.2	830.5	815.6	V(PR) 1
	V(PR) 2	347.1	372.4	392.4	453.5	490.6	514.3	462.5	425.0	387.9	V(PR) 2
	VTHETA PR1	-602.5	-610.1	-617.8	-641.1	-672.6	-704.2	-727.5	-735.1	-742.7	VTHETA PR1
	VTHETA PR2	-137.2	-155.6	-172.8	-206.3	-262.8	-295.6	-280.5	-270.3	-257.5	VTHETA PR2
	U 1	602.51	610.11	617.78	641.09	672.62	704.18	727.49	735.15	742.74	U 1
	U 2	604.23	611.24	618.25	639.28	667.30	695.34	716.39	723.41	730.44	U 2
	M 1	0.3170	0.3575	0.3597	0.3651	0.3689	0.3604	0.3532	0.3504	0.3047	M 1
	M 2	0.4947	0.4979	0.4992	0.5229	0.5107	0.5112	0.5063	0.4894	0.4843	M 2
	M(PR) 1	0.6306	0.6589	0.6660	0.6869	0.7134	0.7335	0.7483	0.7530	0.7374	M(PR) 1
	M(PR) 2	0.3037	0.3267	0.3449	0.4035	0.4327	0.4530	0.4058	0.3718	0.3386	M(PR) 2
	TURN(PR)	36.531	32.440	31.189	30.839	26.475	25.483	24.505	22.781	24.006	TURN(PR)
	UUBAR	0.1979	0.2177	0.1960	0.1245	0.1003	0.1045	0.2175	0.2794	0.2865	UUBAR
	LOSS PARA	0.0528	0.0581	0.0523	0.0341	0.0272	0.0287	0.0599	0.0754	0.0756	LOSS PARA
	DFAC	0.6968	0.6717	0.6458	0.5765	0.5406	0.5290	0.6211	0.6777	0.7277	DFAC
	EFFP	0.7668	0.7733	0.8079	0.9223	0.9125	0.9010	0.8329	0.7856	0.8098	EFFP
	EFF	0.7582	0.7654	0.8011	0.9194	0.9092	0.8972	0.8266	0.7776	0.8022	EFF
	INCID	7.976	4.864	4.622	3.840	2.811	2.543	2.445	2.448	4.996	INCID
	DEVM	15.537	15.404	15.204	11.356	11.720	10.274	9.855	11.439	12.803	DEVM
	P 1	14.460	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.420	P 1
	P 2	18.660	18.730	18.765	19.130	19.085	19.190	19.135	19.020	19.020	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	570.400	567.360	565.560	562.870	562.950	564.520	567.880	569.740	571.930	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	55.048	52.764	51.060	46.640	43.931	43.033	49.085	53.151	57.279	BETA 2
STATOR-T.E.	BETA 2A	1.170	1.350	1.310	1.520	2.330	2.221	2.701	3.271	3.522	BETA 2A
	V 2	569.85	572.48	573.01	596.15	584.12	587.34	578.75	568.23	564.17	V 2
	V 2A	404.92	408.98	406.07	418.25	452.69	460.11	438.80	429.03	412.23	V 2A
	VZ 2	325.46	346.40	360.14	409.26	420.50	428.95	378.66	340.44	304.69	VZ 2
	VZ 2A	404.84	408.87	405.96	418.25	452.14	459.38	437.77	427.73	410.81	VZ 2A
	V-THETA 2	467.07	455.78	445.69	433.38	405.09	400.47	436.89	454.26	474.22	V-THETA 2
	V-THETA 2A	8.27	9.64	9.28	11.19	18.40	17.81	20.65	24.45	25.28	V-THETA 2A
	M 2	0.4987	0.5025	0.5039	0.5266	0.5154	0.5176	0.5081	0.4975	0.4928	M 2
	M 2A	0.3501	0.3547	0.3526	0.3644	0.3953	0.4014	0.3811	0.3717	0.3561	M 2A
	TURN(PR)	53.878	51.414	49.749	45.114	41.579	40.768	46.318	49.809	53.683	TURN(PR)
	UUBAR	0.0144	0.0239	0.0489	0.1375	0.0323	0.0502	0.1058	0.1021	0.1478	UUBAR
	LOSS PARA	0.0048	0.0081	0.0168	0.0488	0.0119	0.0193	0.0419	0.0408	0.0596	LOSS PARA
	DFAC	0.5606	0.5511	0.5537	0.5507	0.4710	0.4686	0.5284	0.5493	0.5925	DFAC
	EFFP	0.9736	0.9556	0.9106	0.7535	0.9271	0.8825	0.7732	0.7829	0.7081	EFFP
	INCID	8.077	6.563	5.589	2.964	1.679	0.634	5.712	9.222	12.745	INCID
	DEVM	14.201	14.204	14.044	13.854	14.449	14.927	16.208	17.075	17.668	DEVM
	P 2	18.660	18.730	18.765	19.130	19.085	19.190	19.135	19.020	19.020	P 2
	P 2A	18.618	18.659	18.619	18.677	18.983	19.029	18.808	18.718	18.590	P 2A
	T 2	570.400	567.360	565.560	562.870	562.950	564.520	567.880	569.740	571.930	T 2
	T 2A	570.400	567.360	565.560	562.870	562.950	564.520	567.880	569.740	571.930	T 2A
	UUBAR FS	0.1186	0.1176	0.1161	0.0876	0.0904	0.0691	0.1108	0.1050	0.1267	UUBAR FS
	P2 FS	19.005	19.045	18.992	18.950	19.287	19.225	19.152	19.030	18.950	P2 FS
	LOSS PARA FS	0.0395	0.0398	0.0398	0.0310	0.0333	0.0265	0.0438	0.0419	0.0511	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A
CALCULATIONS USING TRANSLATED VALUES
PERCENT EQUIVALENT ROTOR SPEED = 99.85 EQUIVALENT ROTOR SPEED = 4203.71 CORRECTED WEIGHT FLOW = 89.38

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	358.25	358.25	358.25	358.25	358.25	358.25	358.25	358.25	358.25	V 0
	V 1	336.86	359.90	362.36	370.40	371.89	364.43	351.68	348.60	308.53	V 1
	VZ 0	358.25	358.25	358.25	358.25	358.22	358.19	358.15	358.14	358.13	VZ 0
	VZ 1	336.86	359.90	362.36	370.40	371.86	364.37	351.58	348.49	308.42	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3243	0.3243	0.3243	0.3243	0.3243	0.3243	0.3243	0.3243	0.3243	M 0
	M 1	0.3045	0.3258	0.3281	0.3355	0.3369	0.3300	0.3182	0.3153	0.2785	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1201	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2219	UUBAR
	DFAC	0.060	-0.005	-0.011	-0.034	-0.038	-0.017	0.018	0.027	0.139	DFAC
	EFFP	203.6475	0.9974	0.9995	0.9994	0.9994	0.9992	1.0007	1.0005	5.8249	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.570	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.465	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	54.080	53.585	51.882	48.145	45.561	45.422	53.071	56.964	60.877	BETA 2
	BETA(PR) 1	59.801	58.474	58.617	58.995	60.155	61.822	63.429	63.865	66.755	BETA(PR) 1
	BETA(PR) 2	16.672	22.327	27.659	26.757	33.657	36.561	39.831	41.562	43.529	BETA(PR) 2
	V 1	353.78	377.59	380.20	388.75	389.55	381.03	367.74	364.67	322.62	V 1
	V 2	618.56	588.13	561.81	556.56	570.70	565.35	556.31	552.72	552.11	V 2
	VZ 1	353.77	377.58	380.20	388.71	389.36	380.59	367.08	363.92	321.88	VZ 1
	VZ 2	362.88	349.14	346.75	398.01	399.41	399.28	333.91	301.04	268.48	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	500.93	473.29	442.00	444.29	407.31	405.21	444.25	462.53	481.91	V-THETA 2
	V(PR) 1	703.3	722.1	730.1	754.6	782.5	806.2	820.9	826.5	815.9	V(PR) 1
	V(PR) 2	378.8	377.4	391.5	445.8	480.1	497.8	435.5	403.1	371.0	V(PR) 2
	VTHETA PR1	-667.9	-615.5	-623.3	-646.8	-678.6	-710.4	-734.0	-741.7	-749.4	VTHETA PR1
	VTHETA PR2	-108.7	-143.4	-181.8	-200.7	-265.9	-296.3	-278.5	-266.9	-255.0	VTHETA PR2
	U 1	607.87	615.54	623.28	646.80	678.61	710.44	733.97	741.69	749.36	U 1
	U 2	609.61	616.68	623.75	644.97	673.24	701.53	722.77	729.85	736.94	U 2
	M 1	0.3201	0.3422	0.3446	0.3525	0.3533	0.3454	0.3330	0.3302	0.2914	M 1
	M 2	0.5433	0.5165	0.4931	0.5264	0.5021	0.5000	0.4864	0.4823	0.4810	M 2
	M(PR) 1	0.6364	0.6544	0.6617	0.6843	0.7056	0.7307	0.7435	0.7484	0.7370	M(PR) 1
	M(PR) 2	0.3327	0.3314	0.3437	0.3934	0.4225	0.4371	0.3808	0.3517	0.3232	M(PR) 2
	TURN(PR)	43.128	36.147	30.958	32.241	26.505	25.264	23.635	22.346	23.279	TURN(PR)
	UUBAR	0.1521	0.1908	0.1819	0.1262	0.1132	0.1291	0.2613	0.3115	0.3140	UUBAR
	LOSS PARA	0.0423	0.0518	0.0479	0.0347	0.0303	0.0348	0.0695	0.0816	0.0805	LOSS PARA
	DFAC	0.6685	0.6700	0.6437	0.5901	0.5532	0.5503	0.6556	0.7068	0.7523	DFAC
	EFFP	0.8568	0.8238	0.8081	0.9320	0.8818	0.8584	0.7820	0.7524	0.7865	EFFP
	EFF	0.8508	0.8171	0.8012	0.9293	0.8774	0.8530	0.7739	0.7432	0.7780	EFF
	INCID	7.560	6.196	5.927	4.938	4.092	3.764	3.994	3.996	6.111	INCID
	DEVM	8.923	13.030	16.740	11.054	12.568	11.714	12.273	13.423	14.645	DEVM
	P 1	14.570	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.465	P 1
	P 2	19.470	19.140	18.850	19.320	19.100	19.170	19.040	19.020	19.090	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	571.350	568.500	566.450	564.100	564.700	566.700	570.200	572.100	573.700	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	53.451	52.914	51.273	47.772	45.133	44.850	52.157	55.840	59.481	BETA 2
STATOR-T.E.	BETA 2A	1.420	1.550	1.690	2.240	3.290	2.751	3.201	3.581	3.802	BETA 2A
	V 2	623.66	593.50	566.85	600.61	575.72	576.13	564.40	561.32	561.32	V 2
	V 2A	409.36	410.31	412.25	423.20	455.11	452.37	439.32	434.91	428.92	V 2A
	VZ 2	371.40	357.89	354.62	403.62	405.59	408.12	345.94	314.91	284.83	VZ 2
	VZ 2A	409.23	410.16	412.06	422.83	454.18	451.47	438.09	433.45	427.30	VZ 2A
	V-THETA 2	501.01	473.45	442.21	444.70	407.89	405.99	445.29	464.07	483.18	V-THETA 2
	V-THETA 2A	10.14	11.10	12.16	16.54	26.11	21.69	24.50	27.13	28.39	V-THETA 2A
	M 2	0.5480	0.5214	0.4978	0.5302	0.5068	0.5062	0.4938	0.4901	0.4894	M 2
	M 2A	0.3537	0.3555	0.3579	0.3684	0.3968	0.3937	0.3807	0.3762	0.3703	M 2A
	TURN(PR)	52.031	51.364	49.582	45.526	41.822	42.055	48.852	52.191	55.609	TURN(PR)
	UUBAR	0.1561	0.1143	0.0273	0.1441	0.0130	0.0553	0.0616	0.0729	0.1127	UUBAR
	LOSS PARA	0.0660	0.0389	0.0094	0.0511	0.0048	0.0213	0.0244	0.0291	0.0454	LOSS PARA
	DFAC	0.6067	0.5740	0.5341	0.5492	0.4559	0.4729	0.5188	0.5384	0.5650	DFAC
	EFFP	0.6866	0.8007	0.9474	0.7398	0.9666	0.8772	0.8574	0.8332	0.7515	EFFP
	INCID	6.480	6.713	5.802	4.097	2.881	2.451	8.786	11.913	14.951	INCID
	DEVM	14.451	14.404	14.424	14.574	15.409	15.456	16.707	17.384	17.948	DEVM
	P 2	19.470	19.140	18.850	19.320	19.100	19.170	19.040	19.020	19.090	P 2
	P 2A	18.765	18.770	18.770	18.835	19.060	19.000	18.860	18.810	18.765	P 2A
	T 2	571.350	568.500	566.450	564.100	564.700	566.700	570.200	572.100	573.700	T 2
	T 2A	571.350	568.500	566.450	564.100	564.700	566.600	570.200	572.100	573.700	T 2A
	UUBAR FS	0.1031	0.1572	0.1348	0.1110	0.0927	0.1062	0.1016	0.1002	0.1017	UUBAR FS
	P2 FS	19.097	19.305	19.215	19.194	19.369	19.345	19.170	19.107	19.055	P2 FS
	LOSS PARA FS	0.0346	0.0535	0.0464	0.0393	0.0342	0.0409	0.0402	0.0399	0.0409	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 89.60 EQUIVALENT ROTOR SPEED = 3771.97 CORRECTED WEIGHT FLOW = 116.21

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	487.79	487.79	487.79	487.79	487.79	487.79	487.79	487.79	487.79	V 0
	V 1	465.85	498.77	500.61	502.36	498.46	487.60	484.62	483.78	454.64	V 1
	VZ 0	487.79	487.79	487.79	487.79	487.75	487.71	487.66	487.64	487.63	VZ 0
	VZ 1	465.85	498.77	500.61	502.35	498.42	487.51	484.49	483.63	454.48	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.4455	0.4455	0.4455	0.4455	0.4455	0.4455	0.4455	0.4455	0.4455	M 0
	M 1	0.4247	0.4560	0.4577	0.4594	0.4557	0.4453	0.4425	0.4417	0.4142	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1410	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1304	UUBAR
	DFAC	0.045	-0.023	-0.026	-0.030	-0.022	0.000	0.007	0.008	0.068	DFAC
	EFFP	-2.0568	0.9998	0.9997	0.9997	0.9996	1.0069	0.9999	1.0002	12.5146	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.430	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.450	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	38.505	34.580	30.427	28.007	28.143	26.802	25.532	26.117	28.969	BETA 2
	BETA(PR) 1	47.949	46.353	46.602	47.560	49.231	51.230	52.314	52.644	54.657	BETA(PR) 1
	BETA(PR) 2	21.745	22.085	21.276	24.110	27.956	31.961	34.544	36.499	41.564	BETA(PR) 2
	V 1	492.01	526.83	528.84	530.74	525.29	512.59	509.69	509.06	477.94	V 1
	V 2	585.21	613.72	664.56	669.40	643.32	625.52	617.76	594.39	526.19	V 2
	VZ 1	491.99	526.83	528.84	530.69	525.03	511.99	508.77	508.02	476.84	VZ 1
	VZ 2	457.96	505.29	573.02	590.90	566.88	557.50	556.16	532.34	459.11	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	364.34	348.32	336.56	314.28	303.23	281.64	265.66	260.99	254.16	V-THETA 2
	V(PR) 1	734.6	763.3	769.7	786.5	804.2	818.0	832.8	837.9	824.9	V(PR) 1
	V(PR) 2	493.0	545.3	614.9	647.5	642.2	658.0	676.5	663.6	614.8	V(PR) 2
	VTHETA PR1	-545.4	-552.3	-559.3	-580.4	-608.9	-637.5	-658.6	-665.5	-672.4	VTHETA PR1
	VTHETA PR2	-182.7	-205.0	-223.1	-264.4	-300.9	-347.8	-382.9	-393.9	-407.1	VTHETA PR2
	U 1	545.44	552.32	559.27	580.37	608.91	637.48	658.59	665.52	672.39	U 1
	U 2	547.00	553.34	559.69	578.73	604.10	629.48	648.54	654.89	661.26	U 2
	M 1	0.4495	0.4828	0.4847	0.4865	0.4813	0.4692	0.4664	0.4658	0.4362	M 1
	M 2	0.5195	0.5468	0.5960	0.6024	0.5776	0.5609	0.5536	0.5313	0.4676	M 2
	M(PR) 1	0.6711	0.6995	0.7055	0.7210	0.7368	0.7487	0.7620	0.7666	0.7529	M(PR) 1
	M(PR) 2	0.4377	0.4859	0.5515	0.5827	0.5766	0.5900	0.6062	0.5931	0.5464	M(PR) 2
	TURN(PR)	26.204	24.268	25.326	23.453	21.281	19.284	17.794	16.174	13.132	TURN(PR)
	UUBAR	0.3684	0.3233	0.1649	0.0782	0.1130	0.1088	0.0900	0.1406	0.2156	UUBAR
	LOSS PARA	0.0994	0.0880	0.0457	0.0220	0.0321	0.0310	0.0257	0.0396	0.0570	LOSS PARA
	DFAC	0.4730	0.4197	0.3311	0.2994	0.3222	0.3106	0.2974	0.3162	0.3627	DFAC
	EFFP	0.4676	0.4794	0.6806	0.8243	0.7887	0.7716	0.7752	0.6781	0.5536	EFFP
	EFF	0.4588	0.4709	0.6733	0.8199	0.7837	0.7664	0.7700	0.6716	0.5463	EFF
	INCID	-3.893	-5.925	-6.088	-6.497	-6.833	-6.833	-7.131	-7.235	-6.001	INCID
	DEVM	13.995	12.787	10.357	8.407	7.270	7.098	6.991	8.363	12.680	DEVM
	P 1	14.430	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.450	P 1
	P 2	16.200	16.490	17.200	17.510	17.330	17.230	17.230	16.910	16.190	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	556.700	555.600	554.150	551.200	550.650	550.200	550.050	550.325	550.050	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	38.153	34.221	30.096	27.801	27.888	26.483	25.157	25.717	28.528	BETA 2
STATOR-T.E.	BETA 2A	0.750	1.300	1.540	1.170	0.880	0.950	0.861	0.720	0.470	BETA 2A
	V 2	589.87	619.57	671.50	674.59	649.60	633.61	627.66	604.29	534.84	V 2
	V 2A	541.40	575.97	580.37	642.17	640.65	636.64	632.83	612.23	571.96	V 2A
	VZ 2	463.85	512.31	580.96	596.62	573.81	566.38	566.99	543.22	468.80	VZ 2
	VZ 2A	541.35	575.82	580.15	641.96	640.31	636.01	631.96	611.32	571.04	VZ 2A
	V-THETA 2	364.40	348.43	336.72	314.57	303.67	282.18	266.28	261.64	254.83	V-THETA 2
	V-THETA 2A	7.09	13.07	15.60	13.11	9.84	10.55	9.49	7.69	4.69	V-THETA 2A
	M 2	0.5238	0.5524	0.6027	0.6074	0.5837	0.5686	0.5630	0.5406	0.4756	M 2
	M 2A	0.4787	0.5114	0.5162	0.5762	0.5751	0.5715	0.5679	0.5482	0.5103	M 2A
	TURN(PR)	37.403	32.920	28.555	26.625	26.990	25.497	24.244	24.937	27.986	TURN(PR)
	UUBAR	0.0543	0.0389	0.2057	0.0893	0.0644	0.0648	0.1094	0.0967	0.0021	UUBAR
	LOSS PARA	0.0183	0.0132	0.0708	0.0317	0.0238	0.0250	0.0434	0.0387	0.0009	LOSS PARA
	DFAC	0.2862	0.2548	0.3005	0.2072	0.1818	0.1610	0.1548	0.1559	0.1205	DFAC
	EFFP	0.6914	0.7472	0.2816	0.1757	-1.0485	6.9174	6.8272	4.2456	1.0135	EFFP
	INCID	-8.818	-11.980	-15.374	-15.873	-14.360	-15.907	-18.201	-18.198	-15.999	INCID
	DEVM	13.781	14.154	14.274	13.504	13.000	13.658	14.369	14.527	14.622	DEVM
	P 2	16.200	16.490	17.200	17.510	17.330	17.230	17.230	16.910	16.190	P 2
	P 2A	16.050	16.370	16.430	17.165	17.100	17.010	16.865	16.615	16.185	P 2A
	T 2	556.700	555.600	554.150	551.200	550.650	550.200	550.050	550.325	550.050	T 2
	T 2A	556.700	555.600	554.150	551.200	550.650	550.200	550.050	550.325	550.050	T 2A
	UUBAR FS	0.0988	0.1336	0.1254	0.1060	0.0948	0.0904	0.0914	0.1178	0.1931	UUBAR FS
	P2 FS	16.336	16.823	16.856	17.582	17.450	17.325	17.164	16.983	16.740	P2 FS
	LOSS PARA FS	0.0332	0.0453	0.0431	0.0376	0.0350	0.0348	0.0362	0.0471	0.0827	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 89.35 EQUIVALENT ROTOR SPEED = 3761.53 CORRECTED WEIGHT FLOW = 105.46

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	433.45	433.45	433.45	433.45	433.45	433.45	433.45	433.45	433.45	V 0
	V 1	400.11	434.00	436.63	441.83	442.69	439.19	425.82	420.94	383.48	V 1
	VZ 0	433.45	433.45	433.45	433.44	433.41	433.37	433.33	433.32	433.30	VZ 0
	VZ 1	400.11	434.00	436.63	441.82	442.65	439.11	425.70	420.81	383.35	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3943	0.3943	0.3943	0.3943	0.3943	0.3943	0.3943	0.3943	0.3943	M 0
	M 1	0.3631	0.3948	0.3972	0.4021	0.4029	0.3996	0.3871	0.3825	0.3476	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1628	0.0	0.0	0.0	0.0	0.0	0.0362	0.0529	0.2271	UUBAR
	DFAC	0.077	-0.001	-0.007	-0.019	-0.021	-0.013	0.018	0.029	0.115	DFAC
	EFFP	-25.9942	0.9932	1.0000	0.9996	0.9991	0.9989	33.2534	7.8153	106.6880	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.451	14.694	14.694	14.694	14.694	14.694	14.640	14.615	14.355	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	42.679	41.355	38.028	35.262	33.536	32.991	34.227	36.741	39.899	BETA 2
	BETA(PR) 1	52.246	50.335	50.513	51.215	52.566	54.112	55.840	56.421	59.121	BETA(PR) 1
	BETA(PR) 2	20.892	22.880	25.327	26.988	28.841	31.936	34.008	35.961	41.424	BETA(PR) 2
	V 1	421.24	456.71	459.53	465.13	465.05	460.52	446.48	441.50	401.89	V 1
	V 2	564.29	564.52	564.44	581.20	595.95	588.92	578.38	554.78	501.23	V 2
	VZ 1	421.22	456.70	459.53	465.08	464.82	459.98	445.67	440.60	400.97	VZ 1
	VZ 2	408.11	423.74	444.61	474.49	496.45	493.31	477.29	443.67	383.73	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	389.71	372.99	347.72	335.48	329.04	320.25	324.70	331.19	320.83	V-THETA 2
	V(PR) 1	688.0	715.5	722.6	742.5	764.9	785.0	794.2	797.1	781.7	V(PR) 1
	V(PR) 2	436.8	459.9	491.9	532.6	567.1	582.1	576.9	549.3	512.8	V(PR) 2
	VTHETA PR1	-543.9	-550.8	-557.7	-578.8	-607.2	-635.7	-656.8	-663.7	-670.5	VTHETA PR1
	VTHETA PR2	-155.8	-178.8	-210.4	-241.6	-273.4	-307.5	-322.0	-321.9	-338.6	VTHETA PR2
	U 1	543.93	550.79	557.72	578.76	607.23	635.71	656.76	663.68	670.53	U 1
	U 2	545.48	551.81	558.14	577.12	602.43	627.74	646.74	653.08	659.43	U 2
	M 1	0.3828	0.4161	0.4188	0.4241	0.4240	0.4197	0.4065	0.4018	0.3647	M 1
	M 2	0.4993	0.5008	0.5014	0.5180	0.5312	0.5245	0.5139	0.4915	0.4422	M 2
	M(PR) 1	0.6252	0.6519	0.6586	0.6769	0.6973	0.7154	0.7230	0.7255	0.7095	M(PR) 1
	M(PR) 2	0.3865	0.4080	0.4370	0.4747	0.5055	0.5184	0.5125	0.4866	0.4524	M(PR) 2
	TURN(PR)	31.353	27.455	25.187	24.230	23.733	22.192	21.857	20.491	17.740	TURN(PR)
	UUBAR	0.1857	0.1998	0.1409	0.0791	0.0411	0.0411	0.0660	0.1245	0.1486	UUBAR
	LOSS PARA	0.0504	0.0541	0.0378	0.0217	0.0116	0.0117	0.0190	0.0353	0.0394	LOSS PARA
	DFAC	0.5297	0.5105	0.4624	0.4215	0.3964	0.3947	0.4142	0.4552	0.4879	DFAC
	EFFP	0.7277	0.7216	0.7615	0.8705	0.8995	0.9082	0.8793	0.8124	0.7730	EFFP
	EFF	0.7204	0.7147	0.7555	0.8669	0.8965	0.9055	0.8757	0.8071	0.7669	EFF
	INCID	0.404	-1.943	-2.177	-2.841	-3.497	-3.950	-3.603	-3.455	-1.533	INCID
	DEVM	13.143	13.582	14.407	11.285	8.154	7.072	6.455	7.825	12.541	DEVM
	P 1	14.451	14.694	14.694	14.694	14.694	14.694	14.640	14.615	14.355	P 1
	P 2	17.415	17.465	17.505	17.765	18.025	18.070	18.035	17.800	17.295	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	558.120	555.420	553.910	552.040	553.480	553.570	555.070	555.940	555.680	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	43.271	40.925	37.649	35.028	33.247	32.608	33.730	36.174	39.262	BETA 2
STATOR-T.E.	BETA 2A	-0.060	-0.090	0.000	0.280	0.720	1.220	2.211	2.081	1.281	BETA 2A
	V 2	568.64	569.58	569.55	585.10	601.33	596.11	587.11	563.52	509.22	V 2
	V 2A	418.58	437.72	439.73	484.92	542.26	543.72	541.51	514.22	481.47	V 2A
	VZ 2	414.04	430.35	450.96	479.05	502.63	501.57	487.45	454.08	393.55	VZ 2
	VZ 2A	418.58	437.72	439.73	484.86	542.00	543.14	540.43	513.16	480.60	VZ 2A
	V-THETA 2	389.77	373.11	347.89	335.79	329.51	320.87	325.46	332.02	321.68	V-THETA 2
	V-THETA 2A	-0.44	-0.69	0.00	2.37	6.81	11.57	20.86	18.65	10.74	V-THETA 2A
	M 2	0.5033	0.5055	0.5062	0.5217	0.5362	0.5313	0.5220	0.4996	0.4495	M 2
	M 2A	0.3663	0.3845	0.3868	0.4287	0.4810	0.4823	0.4796	0.4540	0.4241	M 2A
	TURN(PR)	43.331	41.015	37.648	34.742	32.507	31.346	31.458	34.021	37.898	TURN(PR)
	UUBAR	0.1880	0.1474	0.1538	0.1024	0.0106	0.0335	0.0481	0.0735	0.0125	UUBAR
	LOSS PARA	0.0633	0.0502	0.0529	0.0364	0.0039	0.0129	0.0190	0.0294	0.0050	LOSS PARA
	DFAC	0.4950	0.4550	0.4384	0.3741	0.2976	0.2886	0.2845	0.3112	0.3024	DFAC
	EFFP	0.6226	0.6706	0.6515	0.7043	0.9495	0.8220	0.7115	0.6021	0.8918	EFFP
	INCID	-3.700	-5.276	-7.822	-8.647	-9.003	-9.787	-9.638	-7.755	-5.278	INCID
	DEVM	12.971	12.764	12.734	12.614	12.840	13.927	15.718	15.886	15.431	DEVM
	P 2	17.415	17.465	17.505	17.765	18.025	18.070	18.035	17.800	17.295	P 2
	P 2A	16.895	17.053	17.073	17.457	17.991	17.964	17.888	17.595	17.267	P 2A
	T 2	558.120	555.420	553.910	552.040	553.480	553.570	555.070	555.940	555.680	T 2
	T 2A	558.120	555.420	553.910	552.040	553.480	553.570	555.070	555.940	555.680	T 2A
	UUBAR FS	0.0956	0.0990	0.0984	0.0683	0.0383	0.0631	0.0542	0.0992	0.1476	UUBAR FS
	P2 FS	17.132	17.314	17.332	17.655	18.117	18.170	18.055	17.880	17.650	P2 FS
	LOSS PARA FS	0.0321	0.0337	0.0338	0.0242	0.0140	0.0242	0.0214	0.0396	0.0590	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 89.41 EQUIVALENT ROTOR SPEED = 3764.17 CORRECTED WEIGHT FLOW = 96.10

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	388.89	388.89	388.89	388.89	388.89	388.89	388.89	388.89	388.89	V 0
	V 1	362.00	393.23	395.20	399.48	402.49	395.22	383.96	376.27	345.27	V 1
	VZ 0	388.89	388.89	388.89	388.88	388.86	388.82	388.78	388.77	388.75	VZ 0
	VZ 1	362.00	393.23	395.20	399.48	402.46	395.15	383.86	376.15	345.15	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3527	0.3527	0.3527	0.3527	0.3527	0.3527	0.3527	0.3527	0.3527	M 0
	M 1	0.3277	0.3567	0.3585	0.3625	0.3653	0.3585	0.3481	0.3409	0.3123	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1702	0.0	0.0	0.0	0.0	0.0	0.0182	0.0553	0.2115	UUBAR
	DFAC	0.069	-0.011	-0.016	-0.027	-0.035	-0.016	0.013	0.032	0.112	DFAC
	EFFP	-4.6152	0.9995	0.9990	1.0000	0.9995	0.9992	3.1683	5.6454	22.7413	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.488	14.694	14.694	14.694	14.694	14.694	14.672	14.627	14.438	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	47.394	45.604	43.119	39.904	37.493	36.818	38.329	41.361	45.743	BETA 2
	BETA(PR) 1	55.045	53.149	53.353	54.069	55.227	56.994	58.598	59.375	61.750	BETA(PR) 1
	BETA(PR) 2	18.695	21.595	24.697	30.791	31.908	33.449	36.087	38.252	43.419	BETA(PR) 2
	V 1	380.52	413.10	415.21	419.77	422.11	413.71	401.94	393.97	361.37	V 1
	V 2	565.61	556.96	548.02	525.75	547.01	557.50	543.91	522.70	480.19	V 2
	VZ 1	380.50	413.10	415.20	419.73	421.90	413.22	401.21	393.16	360.54	VZ 1
	VZ 2	382.89	389.66	400.02	403.26	433.78	445.77	425.94	391.62	334.53	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	416.30	397.96	374.57	337.23	332.76	333.70	336.74	344.79	343.33	V-THETA 2
	V(PR) 1	664.1	688.8	695.6	715.3	739.9	758.8	770.4	772.2	762.1	V(PR) 1
	V(PR) 2	404.2	419.1	440.3	469.5	511.3	534.9	528.0	499.7	461.4	V(PR) 2
	VTHETA PR1	-544.3	-551.2	-558.1	-579.2	-607.7	-636.2	-657.2	-664.1	-671.0	VTHETA PR1
	VTHETA PR2	-129.6	-154.2	-184.0	-240.3	-270.1	-294.5	-310.5	-308.7	-316.6	VTHETA PR2
	U 1	544.32	551.18	558.11	579.17	607.65	636.16	657.23	664.14	671.00	U 1
	U 2	545.87	552.20	558.53	577.53	602.85	628.18	647.20	653.54	659.89	U 2
	M 1	0.3449	0.3752	0.3772	0.3814	0.3836	0.3758	0.3648	0.3574	0.3271	M 1
	M 2	0.4996	0.4928	0.4852	0.4654	0.4849	0.4945	0.4809	0.4609	0.4220	M 2
	M(PR) 1	0.6019	0.6256	0.6319	0.6500	0.6724	0.6893	0.6992	0.7005	0.6899	M(PR) 1
	M(PR) 2	0.3570	0.3708	0.3899	0.4156	0.4533	0.4745	0.4668	0.4406	0.4055	M(PR) 2
	TURN(PR)	36.349	31.554	28.656	23.281	23.328	23.563	22.541	21.159	18.377	TURN(PR)
	UUBAR	0.1308	0.1649	0.1363	0.1146	0.0665	0.0652	0.0937	0.1447	0.1811	UUBAR
	LOSS PARA	0.0360	0.0450	0.0368	0.0303	0.0182	0.0183	0.0262	0.0398	0.0465	LOSS PARA
	DFAC	0.5736	0.5615	0.5271	0.4884	0.4531	0.4419	0.4649	0.5080	0.5525	DFAC
	EFFP	0.8067	0.7926	0.8038	0.7920	0.8592	0.8926	0.8396	0.7929	0.7604	EFFP
	EFF	0.8006	0.7866	0.7983	0.7865	0.8551	0.8893	0.8347	0.7868	0.7537	EFF
	INCID	3.203	0.871	0.663	0.012	-0.836	-1.067	-0.843	-0.498	1.099	INCID
	DEVM	10.945	12.297	13.778	15.087	11.220	8.584	8.531	10.114	14.535	DEVM
	P 1	14.488	14.694	14.694	14.694	14.694	14.694	14.672	14.627	14.438	P 1
	P 2	18.000	17.935	17.850	17.650	17.960	18.125	18.100	17.915	17.540	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	560.150	557.340	555.840	554.160	554.500	554.740	557.120	558.020	558.050	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	46.929	45.107	42.680	39.649	37.184	36.400	37.782	40.725	44.989	BETA 2
STATOR-T.E.	BETA 2A	1.830	1.840	1.580	0.820	1.290	1.450	2.741	3.632	3.552	BETA 2A
	V 2	569.98	561.94	552.83	529.05	551.65	564.01	551.76	530.62	487.66	V 2
	V 2A	398.98	416.23	412.05	431.44	468.27	484.71	483.39	458.90	423.40	V 2A
	VZ 2	389.24	396.61	406.41	407.30	439.28	453.49	435.42	401.50	344.37	VZ 2
	VZ 2A	398.78	416.01	411.89	431.35	467.97	484.15	482.24	457.34	421.92	VZ 2A
	V-THETA 2	416.38	398.10	374.75	337.53	333.23	334.34	337.53	345.64	344.23	V-THETA 2
	V-THETA 2A	12.74	13.36	11.36	6.17	10.54	12.26	23.09	29.03	26.19	V-THETA 2A
	M 2	0.5036	0.4975	0.4897	0.4684	0.4892	0.5006	0.4881	0.4682	0.4288	M 2
	M 2A	0.3481	0.3644	0.3612	0.3792	0.4125	0.4274	0.4253	0.4027	0.3706	M 2A
	TURN(PR)	45.099	43.267	41.099	38.823	35.873	34.907	34.977	37.021	41.355	TURN(PR)
	UUBAR	0.1985	0.1362	0.1230	-0.0024	0.0011	0.0133	0.0276	0.0508	0.0216	UUBAR
	LOSS PARA	0.0668	0.0463	0.0423	-0.0009	0.0004	0.0051	0.0109	0.0203	0.0087	LOSS PARA
	DFAC	0.5385	0.4925	0.4811	0.4075	0.3684	0.3615	0.3511	0.3753	0.3968	DFAC
	EFFP	0.6413	0.7231	0.7457	1.0067	0.9965	0.9540	0.8924	0.8150	0.9185	EFFP
	INCID	-0.042	-1.094	-2.791	-4.026	-5.068	-5.997	-5.589	-3.207	0.447	INCID
	DEVM	14.861	14.694	14.314	13.154	13.410	14.157	16.248	17.434	17.698	DEVM
	P 2	18.000	17.935	17.850	17.650	17.960	18.125	18.100	17.915	17.540	P 2
	P 2A	17.432	17.555	17.518	17.656	17.957	18.087	18.025	17.788	17.495	P 2A
	T 2	560.150	557.340	555.840	554.160	554.500	554.740	557.120	558.020	558.050	T 2
	T 2A	560.150	557.340	555.840	554.160	554.500	554.740	557.120	558.020	558.050	T 2A
	UUBAR FS	0.1019	0.0965	0.0996	0.0631	0.0357	0.0402	0.0570	0.0926	0.1301	UUBAR FS
	P2 FS	17.692	17.812	17.779	17.822	18.057	18.205	18.185	18.030	17.800	P2 FS
	LOSS PARA FS	0.0342	0.0328	0.0342	0.0236	0.0129	0.0154	0.0225	0.0370	0.0524	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 89.23 EQUIVALENT ROTOR SPEED = 3756.64 CORRECTED WEIGHT FLOW = 91.00

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	365.55	365.55	365.55	365.55	365.55	365.55	365.55	365.55	365.55	V 0
	V 1	336.96	368.21	367.89	373.45	376.54	371.59	362.14	352.54	321.92	V 1
	VZ 0	365.55	365.55	365.55	365.54	365.52	365.48	365.44	365.43	365.42	VZ 0
	VZ 1	336.96	368.21	367.89	373.45	376.51	371.52	362.04	352.43	321.81	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3310	0.3310	0.3310	0.3310	0.3310	0.3310	0.3310	0.3310	0.3310	M 0
	M 1	0.3046	0.3335	0.3332	0.3383	0.3412	0.3366	0.3279	0.3190	0.2908	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1798	0.0	0.0	0.0	0.0	0.0	0.0	0.0438	0.2133	UUBAR
	DFAC	0.078	-0.007	-0.006	-0.022	-0.030	-0.017	0.009	0.036	0.119	DFAC
	EFFP	-6.7133	0.9991	0.9989	0.9991	0.9991	1.0002	1.0005	2.4870	11.7089	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.501	14.694	14.694	14.694	14.694	14.694	14.694	14.647	14.465	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	49.277	48.076	46.154	42.872	40.414	39.562	41.634	45.746	49.888	BETA 2
	BETA(PR) 1	56.918	54.913	55.272	55.858	56.969	58.560	60.037	60.955	63.360	BETA(PR) 1
	BETA(PR) 2	18.588	23.097	26.155	26.901	31.566	35.094	36.962	39.148	43.294	BETA(PR) 2
	V 1	353.89	386.42	386.08	392.00	394.49	388.61	378.81	368.84	336.70	V 1
	V 2	557.44	535.57	525.18	547.86	539.33	532.50	527.32	508.62	480.79	V 2
	VZ 1	353.88	386.42	386.08	391.96	394.29	388.15	378.12	368.08	335.93	VZ 1
	VZ 2	363.68	357.84	363.80	401.46	410.43	410.07	393.50	354.39	309.31	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	422.47	398.48	378.76	372.70	349.48	338.78	349.79	363.74	367.16	V-THETA 2
	V(PR) 1	648.3	672.2	677.7	698.4	723.5	744.4	757.4	758.5	749.5	V(PR) 1
	V(PR) 2	383.7	389.0	405.3	450.3	482.0	501.8	493.4	457.8	425.8	V(PR) 2
	VTHETA PR1	-543.2	-550.1	-557.0	-578.0	-606.4	-634.9	-655.9	-662.8	-669.7	VTHETA PR1
	VTHETA PR2	-122.3	-152.6	-178.7	-203.7	-252.2	-288.1	-296.1	-288.5	-291.4	VTHETA PR2
	U 1	543.23	550.08	557.00	578.01	606.44	634.89	655.91	662.81	669.66	U 1
	U 2	544.77	551.09	557.42	576.37	601.64	626.92	645.90	652.23	658.57	U 2
	M 1	0.3202	0.3504	0.3500	0.3555	0.3579	0.3524	0.3433	0.3341	0.3044	M 1
	M 2	0.4922	0.4733	0.4643	0.4860	0.4780	0.4715	0.4657	0.4479	0.4221	M 2
	M(PR) 1	0.5867	0.6095	0.6145	0.6334	0.6563	0.6750	0.6864	0.6870	0.6776	M(PR) 1
	M(PR) 2	0.3388	0.3438	0.3583	0.3994	0.4272	0.4443	0.4357	0.4032	0.3738	M(PR) 2
	TURN(PR)	38.330	31.816	29.118	28.960	25.412	23.486	23.108	21.846	20.114	TURN(PR)
	UUBAR	0.1181	0.1719	0.1530	0.0960	0.0767	0.0784	0.1191	0.1803	0.2045	UUBAR
	LOSS PARA	0.0325	0.0464	0.0408	0.0263	0.0210	0.0215	0.0330	0.0490	0.0526	LOSS PARA
	DFAC	0.5977	0.5956	0.5681	0.5192	0.4885	0.4779	0.5075	0.5629	0.6037	DFAC
	EFFP	0.8433	0.8018	0.8103	0.9184	0.9053	0.8993	0.8559	0.8046	0.7791	EFFP
	EFF	0.8383	0.7961	0.8050	0.9159	0.9025	0.8963	0.8515	0.7988	0.7726	EFF
	INCID	5.076	2.635	2.582	1.801	0.906	0.500	0.598	1.083	2.711	INCID
	DEVM	10.839	13.799	15.236	11.197	10.878	10.228	9.406	11.009	14.410	DEVM
	P 1	14.501	14.694	14.694	14.694	14.694	14.694	14.694	14.647	14.465	P 1
	P 2	18.145	17.935	17.845	18.135	18.110	18.125	18.165	18.005	17.765	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	559.630	556.880	555.480	553.790	554.070	554.460	556.750	558.150	559.300	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	48.785	47.542	45.679	42.581	40.075	39.111	41.034	45.019	49.020	BETA 2
STATOR-T.E.	BETA 2A	2.500	2.550	2.170	1.430	1.950	2.021	3.841	5.082	4.902	BETA 2A
	V 2	561.72	540.30	529.67	551.38	543.87	538.61	534.79	516.21	488.27	V 2
	V 2A	382.52	394.64	388.86	407.42	440.52	455.20	446.08	426.50	403.36	V 2A
	VZ 2	370.11	364.73	370.07	405.95	415.98	417.52	402.85	364.40	319.79	VZ 2
	VZ 2A	382.16	394.25	388.57	407.25	440.09	454.54	444.52	424.22	401.26	VZ 2A
	V-THETA 2	422.54	398.62	378.94	373.04	349.97	339.44	350.61	364.64	368.13	V-THETA 2
	V-THETA 2A	16.68	17.56	14.72	10.17	14.98	16.04	29.85	37.73	34.42	V-THETA 2A
	M 2	0.4962	0.4776	0.4684	0.4893	0.4822	0.4772	0.4726	0.4549	0.4289	M 2
	M 2A	0.3335	0.3452	0.3405	0.3577	0.3875	0.4007	0.3915	0.3734	0.3522	M 2A
	TURN(PR)	46.284	44.991	43.508	41.144	38.103	37.046	37.128	39.866	44.038	TURN(PR)
	UUBAR	0.1915	0.0984	0.0859	0.1373	0.0319	-0.0011	0.0617	0.0730	0.0545	UUBAR
	LOSS PARA	0.0644	0.0334	0.0295	0.0488	0.0118	-0.0004	0.0244	0.0291	0.0219	LOSS PARA
	DFAC	0.5624	0.5098	0.5028	0.4954	0.4189	0.3871	0.4050	0.4288	0.4516	DFAC
	EFFP	0.6700	0.8057	0.8279	0.7216	0.9153	1.0036	0.8139	0.7874	0.8402	EFFP
	INCID	1.813	1.340	0.208	-1.095	-2.177	-3.288	-2.339	1.087	4.479	INCID
	DEVM	15.531	15.404	14.904	13.764	14.069	14.727	17.347	18.883	19.047	DEVM
	P 2	18.145	17.935	17.845	18.135	18.110	18.125	18.165	18.005	17.765	P 2
	P 2A	17.607	17.680	17.631	17.759	18.025	18.128	18.006	17.831	17.650	P 2A
	T 2	559.630	556.880	555.480	553.790	554.070	554.460	556.750	558.150	559.300	T 2
	T 2A	559.630	556.880	555.480	553.790	554.070	554.460	556.750	558.150	559.300	T 2A
	UUBAR FS	0.1099	0.1162	0.1039	0.0846	-0.0609	0.0505	0.0653	0.0788	0.0993	UUBAR FS
	P2 FS	17.887	17.987	17.895	17.977	18.192	18.267	18.175	18.020	17.870	P2 FS
	LOSS PARA FS	0.0369	0.0394	0.0356	0.0300	0.0255	0.0183	0.0258	0.0314	0.0399	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 89.81 EQUIVALENT ROTOR SPEED = 3781.09 CORRECTED WEIGHT FLOW = 85.01

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	338.86	338.86	338.86	338.86	338.86	338.86	338.86	338.86	338.86	V 0
	V 1	309.39	338.21	339.91	345.64	347.98	344.75	334.45	324.42	297.57	V 1
	VZ 0	338.86	338.86	338.86	338.85	338.83	338.80	338.77	338.75	338.74	VZ 0
	VZ 1	309.39	338.21	338.91	345.63	347.95	344.69	334.36	324.32	297.47	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3064	0.3064	0.3064	0.3064	0.3064	0.3064	0.3064	0.3064	0.3064	M 0
	M 1	0.2793	0.3058	0.3064	0.3126	0.3148	0.3118	0.3023	0.2931	0.2685	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1641	0.0	0.0	0.0	0.0	0.0	0.0	0.0464	0.2041	UUBAR
	DFAC	0.087	0.002	-0.000	-0.020	-0.027	-0.017	0.013	0.043	0.122	DFAC
	EFFP	21.0354	0.9991	1.0500	1.0002	0.9994	0.9988	1.0004	2.1498	7.2864	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.542	14.694	14.694	14.694	14.694	14.694	14.694	14.651	14.505	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	52.128	51.471	50.030	46.036	43.683	42.805	47.337	51.499	55.587	BETA 2
	BETA(PR) 1	56.257	57.364	57.633	58.079	59.188	60.617	62.143	63.101	65.275	BETA(PR) 1
	BETA(PR) 2	16.277	23.507	27.623	28.889	31.340	35.693	39.703	41.388	43.092	BETA(PR) 2
	V 1	324.69	354.58	355.32	362.46	364.21	360.24	349.55	339.13	311.08	V 1
	V 2	566.08	526.64	508.87	526.09	535.64	523.50	501.48	493.75	490.22	V 2
	VZ 1	324.68	354.57	355.32	362.42	364.03	359.82	348.92	338.43	310.37	VZ 1
	VZ 2	347.51	328.05	326.89	365.17	387.19	383.69	339.41	307.00	276.73	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	446.85	411.99	389.99	378.63	369.78	355.36	368.29	385.94	403.97	V-THETA 2
	V(PR) 1	635.5	657.5	663.7	685.4	710.8	733.6	747.0	748.4	742.3	V(PR) 1
	V(PR) 2	362.0	357.7	368.9	417.1	453.6	473.0	441.9	409.9	379.7	V(PR) 2
	VTHETA PR1	-546.8	-553.7	-560.6	-581.8	-610.4	-639.0	-660.2	-667.1	-674.0	VTHETA PR1
	VTHETA PR2	-101.5	-142.7	-171.1	-201.5	-235.8	-275.6	-281.8	-270.5	-258.9	VTHETA PR2
	U 1	546.76	553.66	560.62	581.77	610.39	639.02	660.18	667.13	674.02	U 1
	U 2	548.32	554.68	561.04	580.12	605.56	631.00	650.10	656.47	662.86	U 2
	M 1	0.2933	0.3209	0.3216	0.3281	0.3298	0.3261	0.3162	0.3066	0.2808	M 1
	M 2	0.4987	0.4636	0.4480	0.4647	0.4734	0.4619	0.4405	0.4328	0.4291	M 2
	M(PR) 1	0.5745	0.5950	0.6007	0.6206	0.6436	0.6640	0.6758	0.6766	0.6702	M(PR) 1
	M(PR) 2	0.3190	0.3149	0.3248	0.3684	0.4009	0.4173	0.3881	0.3593	0.3323	M(PR) 2
	TURN(PR)	43.020	33.856	30.011	29.193	27.858	24.946	22.475	21.756	22.235	TURN(PR)
	UUBAR	0.1350	0.1900	0.1815	0.1272	0.1058	0.1179	0.1987	0.2382	0.2597	UUBAR
	LOSS PARA	0.0376	0.0512	0.0478	0.0343	0.0291	0.0322	0.0503	0.0625	0.0670	LOSS PARA
	DFAC	0.6350	0.6401	0.6188	0.5611	0.5285	0.5170	0.5780	0.6313	0.6793	DFAC
	EFFP	0.8287	0.7668	0.7611	0.8468	0.8774	0.8414	0.7669	0.7404	0.7556	EFFP
	EFF	0.8729	0.7599	0.7544	0.8422	0.8736	0.8366	0.7599	0.7326	0.7479	EFF
	INCID	7.455	5.085	4.943	4.022	3.126	2.558	2.706	3.232	4.629	INCID
	DEVM	8.527	14.209	14.703	13.185	10.652	10.827	12.145	13.248	14.208	DEVM
	P 1	14.542	14.694	14.694	14.694	14.694	14.694	14.694	14.651	14.505	P 1
	P 2	18.430	18.055	17.895	18.105	18.250	18.170	18.085	18.040	18.040	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	562.850	560.080	558.530	556.550	556.630	557.480	560.420	562.070	563.290	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	51.583	50.990	49.497	45.721	43.295	42.312	46.632	50.643	54.519	BETA 2
STATOR-T.E.	BETA 2A	2.990	2.965	2.920	2.410	2.750	2.876	4.282	4.822	5.032	BETA 2A
	V 2	570.42	531.13	513.14	529.39	540.22	529.39	508.39	500.93	497.91	V 2
	V 2A	365.82	374.81	373.61	386.46	421.41	428.64	407.78	399.41	389.78	V 2A
	VZ 2	354.45	335.04	333.28	369.56	393.03	391.13	348.70	317.32	288.70	VZ 2
	VZ 2A	365.32	374.31	373.12	386.07	420.76	427.74	406.14	397.44	387.67	VZ 2A
	V-THETA 2	446.93	417.13	390.17	378.98	370.30	356.05	369.15	386.89	405.03	V-THETA 2
	V-THETA 2A	19.02	19.39	19.03	16.25	20.21	21.49	30.41	33.53	34.14	V-THETA 2A
	M 2	0.5028	0.4678	0.4519	0.4677	0.4777	0.4673	0.4468	0.4393	0.4360	M 2
	M 2A	0.3177	0.3265	0.3259	0.3380	0.3693	0.3755	0.3558	0.3478	0.3389	M 2A
	TURN(PR)	48.603	47.925	46.576	43.304	40.524	39.393	42.286	45.750	49.412	TURN(PR)
	UUBAR	0.2290	0.1019	0.0500	0.1008	0.0523	-0.0028	0.0445	0.0616	0.0955	UUBAR
	LOSS PARA	0.0770	0.0346	0.0172	0.0358	0.0193	-0.0011	0.0176	0.0246	0.0384	LOSS PARA
	DFAC	0.6114	0.5462	0.5211	0.5140	0.4667	0.4348	0.4635	0.4866	0.5199	DFAC
	EFFP	0.6398	0.8122	0.9014	0.8004	0.8776	1.0073	0.8846	0.8428	0.7700	EFFP
	INCID	4.612	4.689	4.026	2.045	1.043	-0.087	3.258	6.712	9.983	INCID
	DEVM	16.011	15.819	15.654	14.744	14.869	15.581	17.786	18.623	19.177	DEVM
	P 2	18.430	18.055	17.895	18.105	18.250	18.170	18.085	18.040	18.040	P 2
	P 2A	17.761	17.799	17.778	17.851	18.112	18.177	17.982	17.902	17.829	P 2A
	T 2	562.850	560.080	558.530	556.550	556.630	557.480	560.420	562.070	563.290	T 2
	T 2A	562.850	560.080	558.530	556.550	556.630	557.480	560.420	562.070	563.290	T 2A
	UUBAR FS	0.1480	0.1427	0.1054	0.0636	0.0646	0.0639	0.0989	0.0959	0.0830	UUBAR FS
	P2 FS	18.152	18.175	18.040	18.005	18.285	18.350	18.225	18.125	18.010	P2 FS
	LOSS PARA FS	0.0497	0.0484	0.0362	0.0225	0.0238	0.0251	0.0391	0.0382	0.0333	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 89.81 EQUIVALENT ROTOR SPEED = 3780.96 CORRECTED WEIGHT FLOW = 80.07

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	317.35	317.35	317.35	317.35	317.35	317.35	317.35	317.35	317.35	V 0
	V 1	293.79	323.61	323.61	328.77	329.36	326.52	311.67	308.33	267.35	V 1
	VZ 0	317.35	317.35	317.35	317.35	317.33	317.30	317.27	317.26	317.24	VZ 0
	VZ 1	293.79	323.61	323.61	328.76	329.33	326.46	311.59	308.23	267.26	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2866	0.2866	0.2866	0.2866	0.2866	0.2866	0.2866	0.2866	0.2866	M 0
	M 1	0.2650	0.2923	0.2923	0.2971	0.2976	0.2950	0.2814	0.2783	0.2409	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1768	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2566	UUBAR
	DFAC	0.074	-0.020	-0.020	-0.036	-0.038	-0.029	0.018	0.028	0.158	DFAC
	EFFP	-5.0221	0.9989	0.9989	0.9998	1.0000	0.9998	0.9996	0.9997	7.1539	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.550	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.485	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	54.001	53.871	52.227	48.632	46.350	45.961	53.045	57.086	60.525	BETA 2
	BETA(PR) 1	60.593	58.512	58.829	59.364	60.569	61.941	63.792	64.266	67.540	BETA(PR) 1
	BETA(PR) 2	15.451	20.749	26.448	29.224	32.222	35.613	39.841	40.998	41.713	BETA(PR) 2
	V 1	308.17	339.12	339.12	344.58	344.53	341.01	325.54	322.21	279.26	V 1
	V 2	564.39	537.95	512.28	517.91	522.85	519.03	500.29	500.89	506.74	V 2
	VZ 1	308.16	339.12	339.12	344.55	344.36	340.61	324.95	321.55	278.62	VZ 1
	VZ 2	331.73	317.18	313.79	342.25	360.75	360.47	300.46	271.92	249.12	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	456.61	434.50	404.93	388.64	378.17	372.78	399.38	420.10	440.78	V-THETA 2
	V(PR) 1	627.6	649.2	655.2	676.1	700.9	724.3	736.1	740.8	729.6	V(PR) 1
	V(PR) 2	344.2	339.2	350.5	392.2	426.7	443.9	392.0	360.9	334.4	V(PR) 2
	VTHETA PR1	-546.7	-553.6	-560.6	-581.8	-610.4	-639.0	-660.2	-667.1	-674.0	VTHETA PR1
	VTHETA PR2	-91.7	-120.2	-156.1	-191.5	-227.4	-258.2	-250.7	-236.4	-222.1	VTHETA PR2
	U 1	546.74	553.64	560.60	581.75	610.36	639.00	660.16	667.10	674.00	U 1
	U 2	548.30	554.66	561.02	580.10	605.54	630.98	650.08	656.45	662.83	U 2
	M 1	0.2782	0.3066	0.3066	0.3116	0.3116	0.3084	0.2941	0.2911	0.2517	M 1
	M 2	0.4978	0.4747	0.4517	0.4577	0.4622	0.4580	0.4394	0.4393	0.4440	M 2
	M(PR) 1	0.5665	0.5870	0.5924	0.6115	0.6339	0.6549	0.6650	0.6692	0.6576	M(PR) 1
	M(PR) 2	0.3036	0.2993	0.3090	0.3466	0.3772	0.3918	0.3442	0.3165	0.2930	M(PR) 2
	TURN(PR)	45.141	37.763	32.382	30.143	28.357	26.350	23.988	23.311	25.882	TURN(PR)
	UUBAR	0.1330	0.1897	0.1829	0.1351	0.1153	0.1317	0.2481	0.2976	0.2964	UUBAR
	LOSS PARA	0.0372	0.0521	0.0487	0.0363	0.0314	0.0360	0.0660	0.0786	0.0782	LOSS PARA
	DFAC	0.6632	0.6743	0.6488	0.5964	0.5641	0.5589	0.6541	0.7097	0.7534	DFAC
	EFFP	0.8791	0.8493	0.8253	0.8991	0.9242	0.8501	0.7897	0.7712	0.8147	EFFP
	EFF	0.8749	0.8445	0.8201	0.8959	0.9218	0.8866	0.7833	0.7641	0.8084	EFF
	INCID	8.751	6.233	6.139	5.307	4.507	3.883	4.357	4.398	6.898	INCID
	DEVM	7.702	11.451	15.529	13.520	11.534	10.747	12.283	12.859	12.829	DEVM
	P 1	14.550	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.485	P 1
	P 2	18.570	18.320	18.070	18.200	18.320	18.330	18.200	18.240	18.340	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	561.500	558.650	557.200	555.200	555.300	556.850	560.450	561.950	563.450	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	53.429	53.229	51.648	48.289	45.943	45.415	52.188	56.020	59.214	BETA 2
STATOR-T.E.	BETA 2A	2.120	2.400	2.480	2.460	3.070	3.341	3.661	4.002	4.262	BETA 2A
	V 2	568.64	542.61	516.61	521.13	527.17	524.84	507.17	508.30	514.84	V 2
	V 2A	366.04	368.73	370.53	379.99	414.60	403.51	389.06	384.78	381.12	V 2A
	VZ 2	338.80	324.81	320.54	346.71	366.44	368.13	310.65	283.84	263.30	VZ 2
	VZ 2A	365.79	368.40	370.17	379.59	413.84	402.48	387.78	383.30	379.47	VZ 2A
	V-THETA 2	456.69	434.65	405.13	388.99	378.71	373.50	400.31	421.14	441.94	V-THETA 2
	V-THETA 2A	13.54	15.44	16.03	16.31	22.20	23.50	24.81	26.81	28.28	V-THETA 2A
	M 2	0.5017	0.4790	0.4557	0.4607	0.4662	0.4634	0.4456	0.4461	0.4514	M 2
	M 2A	0.3183	0.3215	0.3236	0.3326	0.3636	0.3532	0.3391	0.3348	0.3311	M 2A
	TURN(PR)	51.309	50.829	49.168	45.823	42.852	42.031	48.464	51.952	54.882	TURN(PR)
	UUBAR	0.2216	0.1428	0.0542	0.0933	0.0434	0.0937	0.0970	0.1267	0.1755	UUBAR
	LOSS PARA	0.0746	0.0485	0.0186	0.0331	0.0160	0.0360	0.0384	0.0506	0.0707	LOSS PARA
	DFAC	0.6188	0.5836	0.5423	0.5255	0.4648	0.4892	0.5280	0.5552	0.5861	DFAC
	EFFP	0.6457	0.7545	0.8967	0.8154	0.8953	0.7882	0.7808	0.7235	0.6374	EFFP
	INCID	6.458	7.028	6.178	4.614	3.691	3.016	8.817	12.094	14.684	INCID
	DEVM	15.151	15.254	15.214	14.794	15.189	16.046	17.167	17.804	18.407	DEVM
	P 2	18.570	18.320	18.070	18.200	18.320	18.330	18.200	18.240	18.340	P 2
	P 2A	17.920	17.940	17.940	17.970	18.210	18.095	17.975	17.945	17.920	P 2A
	T 2	561.500	558.650	557.200	555.200	555.300	556.850	560.450	561.950	563.450	T 2
	T 2A	561.500	558.650	557.200	555.200	555.300	556.850	560.450	561.950	563.450	T 2A
	UUBAR FS	0.1254	0.1403	0.0929	0.0793	0.0690	0.1182	0.1352	0.1143	0.1319	UUBAR FS
	P2 FS	18.247	18.312	18.172	18.162	18.389	18.400	18.302	18.207	18.220	P2 FS
	LOSS PARA FS	0.0422	0.0476	0.0318	0.0281	0.0254	0.0454	0.0535	0.0456	0.0531	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 69.75 EQUIVALENT ROTOR SPEED = 2936.54 CORRECTED WEIGHT FLOW = 98.05

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	397.97	397.97	397.97	397.97	397.97	397.97	397.97	397.97	397.97	V 0
	V 1	371.99	404.81	406.87	406.24	404.63	401.43	396.37	384.26	359.61	V 1
	VZ 0	397.97	397.97	397.97	397.96	397.94	397.90	397.86	397.85	397.83	VZ 0
	VZ 1	371.98	404.81	406.87	406.23	404.60	401.36	396.26	384.14	359.49	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3611	0.3611	0.3611	0.3611	0.3611	0.3611	0.3611	0.3611	0.3611	M 0
	M 1	0.3370	0.3675	0.3694	0.3688	0.3673	0.3643	0.3596	0.3484	0.3255	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1809	0.0	0.0	0.0	0.0	0.0	0.0	0.0616	0.1872	UUBAR
	DFAC	0.065	-0.017	-0.022	-0.021	-0.017	-0.009	0.004	0.034	0.096	DFAC
	EFFP	-2.7444	0.9999	0.9995	1.0000	0.9989	0.9991	1.0005	7.2338	37.3470	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.465	14.694	14.694	14.694	14.694	14.694	14.694	14.616	14.457	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	35.553	32.578	28.297	26.351	25.940	24.948	23.290	23.899	25.596	BETA 2
	BETA(PR) 1	47.351	45.307	45.516	46.625	48.181	49.772	51.054	52.218	54.333	BETA(PR) 1
	BETA(PR) 2	21.461	20.590	20.818	23.863	27.739	31.251	34.168	36.123	41.777	BETA(PR) 2
	V 1	391.16	425.42	427.62	426.95	424.35	420.29	415.15	402.46	376.56	V 1
	V 2	472.49	503.84	538.73	536.29	516.99	504.94	496.73	476.69	417.12	V 2
	VZ 1	391.15	425.41	427.62	426.90	424.14	419.80	414.40	401.63	375.70	VZ 1
	VZ 2	384.41	424.57	474.34	480.48	464.58	457.12	455.18	434.67	375.11	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	274.73	271.29	255.37	238.00	225.99	212.66	195.93	192.61	179.69	V-THETA 2
	V(PR) 1	577.3	604.9	610.3	621.6	636.2	650.3	659.7	656.1	644.8	V(PR) 1
	V(PR) 2	413.0	453.5	507.5	525.5	525.3	535.4	551.2	539.2	504.0	V(PR) 2
	VTHETA PR1	-424.6	-430.0	-435.4	-451.8	-474.0	-496.3	-512.7	-518.1	-523.5	VTHETA PR1
	VTHETA PR2	-151.1	-159.5	-180.4	-212.5	-244.3	-277.4	-309.0	-317.2	-335.1	VTHETA PR2
	U 1	424.64	429.99	435.40	451.83	474.05	496.29	512.72	518.12	523.47	U 1
	U 2	425.85	430.79	435.73	450.55	470.30	490.06	504.90	509.84	514.80	U 2
	M 1	0.3548	0.3867	0.3888	0.3882	0.3857	0.3819	0.3771	0.3653	0.3412	M 1
	M 2	0.4215	0.4512	0.4844	0.4830	0.4648	0.4538	0.4461	0.4275	0.3725	M 2
	M(PR) 1	0.5236	0.5499	0.5549	0.5652	0.5783	0.5910	0.5993	0.5955	0.5843	M(PR) 1
	M(PR) 2	0.3685	0.4061	0.4563	0.4732	0.4722	0.4812	0.4950	0.4836	0.4501	M(PR) 2
	TURN(PR)	25.889	24.717	24.699	22.764	20.448	18.535	16.910	16.125	12.594	TURN(PR)
	UUBAR	0.2683	0.2357	0.0814	0.0324	0.0648	0.0768	0.0589	0.0777	0.1381	UUBAR
	LOSS PARA	0.0725	0.0648	0.0226	0.0091	0.0184	0.0221	0.0169	0.0220	0.0364	LOSS PARA
	DFAC	0.4229	0.3821	0.2929	0.2723	0.2883	0.2859	0.2666	0.2800	0.3161	DFAC
	EFFP	0.5448	0.5935	0.9007	0.9168	0.8519	0.8404	0.8193	0.7809	0.6282	EFFP
	EFF	0.5394	0.5886	0.7977	0.9155	0.8497	0.8381	0.8168	0.7780	0.6242	EFF
	INCID	-4.451	-6.971	-7.174	-7.432	-7.883	-8.290	-8.391	-7.661	-6.326	INCID
	DEVM	13.712	11.292	9.898	8.160	7.052	6.388	6.614	7.987	12.893	DEVM
	P 1	14.465	14.694	14.694	14.694	14.694	14.694	14.694	14.616	14.457	P 1
	P 2	15.702	15.982	16.358	16.437	16.307	16.220	16.185	16.023	15.560	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	541.510	540.110	538.940	537.140	537.140	536.420	536.480	536.440	536.340	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	35.273	32.285	28.044	26.196	25.749	24.701	23.002	23.588	25.256	BETA 2
STATOR-T.E.	BETA 2A	1.040	1.200	1.300	1.110	0.610	0.730	0.570	0.390	0.200	BETA 2A
	V 2	475.82	508.07	543.45	539.73	521.27	510.57	503.62	483.64	423.30	V 2
	V 2A	434.06	470.30	472.84	524.44	534.40	526.58	511.61	493.03	461.37	V 2A
	VZ 2	388.46	429.52	479.63	484.21	469.21	463.23	462.62	442.21	381.89	VZ 2
	VZ 2A	433.99	470.20	472.71	524.28	534.16	526.09	510.94	492.32	460.64	VZ 2A
	V-THETA 2	274.78	271.38	255.50	238.22	226.31	213.07	196.39	193.09	180.16	V-THETA 2
	V-THETA 2A	7.88	9.85	10.73	10.16	5.69	6.71	5.09	3.35	1.61	V-THETA 2A
	M 2	0.4246	0.4551	0.4888	0.4862	0.4688	0.4591	0.4526	0.4339	0.3782	M 2
	M 2A	0.3862	0.4201	0.4229	0.4718	0.4812	0.4741	0.4601	0.4427	0.4133	M 2A
	TURN(PR)	34.233	31.085	26.744	25.081	25.122	23.936	22.383	23.141	24.989	TURN(PR)
	UUBAR	0.1098	0.1025	0.2316	0.0811	0.0035	0.0202	0.0985	0.1214	0.0185	UUBAR
	LOSS PARA	0.0370	0.0349	0.0797	0.0288	0.0013	0.0078	0.0390	0.0485	0.0075	LOSS PARA
	DFAC	0.2767	0.2497	0.2851	0.1788	0.1320	0.1250	0.1355	0.1384	0.0813	DFAC
	EFFP	0.3899	0.3395	0.1208	-0.3194	1.0625	1.2886	3.9299	3.8685	1.0921	EFFP
	INCID	-11.698	-13.916	-17.426	-17.478	-16.498	-17.688	-20.352	-20.323	-19.265	INCID
	DEVM	14.071	14.054	14.034	13.444	12.730	13.438	14.080	14.198	14.352	DEVM
	P 2	15.702	15.982	16.358	16.437	16.307	16.220	16.185	16.023	15.560	P 2
	P 2A	15.501	15.765	15.787	16.238	16.299	16.176	15.976	15.787	15.533	P 2A
	T 2	541.510	540.110	538.940	537.140	537.140	536.420	536.480	536.440	536.340	T 2
	T 2A	541.510	540.110	538.940	537.140	537.140	536.420	536.480	536.440	536.340	T 2A
	UUBAR FS	0.1334	0.1377	0.1291	0.0840	0.0636	0.0566	0.1821	0.1292	0.1977	UUBAR FS
	P2 FS	15.752	16.068	16.068	16.441	16.453	16.304	16.181	16.040	15.887	P2 FS
	LOSS PARA FS	0.0449	0.0468	0.0444	0.0298	0.0236	0.0218	0.0721	0.0516	0.0801	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 69.94 EQUIVALENT ROTOR SPEED = 2944.55 CORRECTED WEIGHT FLOW = 89.31

INLET	PCT SPAN	95.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.136	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	357.94	357.94	357.94	357.94	357.94	357.94	357.94	357.94	357.94	V 0
	V 1	333.83	362.36	363.18	366.35	366.21	363.61	359.18	356.13	317.97	V 1
	VZ 0	357.94	357.94	357.94	357.94	357.91	357.88	357.84	357.83	357.82	VZ 0
	VZ 1	333.83	362.36	363.18	366.35	366.18	363.54	359.08	356.02	317.86	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	0.3240	M 0
	M 1	0.3017	0.3281	0.3288	0.3318	0.3316	0.3292	0.3251	0.3223	0.2872	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1640	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2174	UUBAR
	DFAC	0.067	-0.012	-0.015	-0.023	-0.023	-0.016	-0.003	0.005	0.112	DFAC
	EFFP	-4.7331	0.9991	0.9997	1.0000	0.9997	0.9980	0.9946	1.0023	160.9780	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.525	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.470	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	40.392	37.768	34.013	31.699	30.886	30.066	30.283	32.136	34.449	BETA 2
	BETA(PR) 1	50.535	48.594	48.884	49.686	51.116	52.655	53.893	54.405	57.704	BETA(PR) 1
	BETA(PR) 2	21.741	21.841	23.466	24.257	26.907	30.800	33.470	35.777	41.054	BETA(PR) 2
	V 1	350.57	380.20	381.07	384.45	383.53	380.17	375.68	372.64	332.54	V 1
	V 2	443.67	466.82	475.30	497.17	497.32	493.90	471.85	448.63	403.04	V 2
	VZ 1	350.56	380.20	381.07	384.41	383.34	379.72	375.00	371.87	331.78	VZ 1
	VZ 2	341.72	367.44	393.98	422.93	426.52	418.21	406.62	379.03	331.56	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	290.74	284.69	265.87	261.20	255.13	242.10	237.45	238.10	227.44	V-THETA 2
	V(PR) 1	551.5	574.9	579.5	594.2	610.8	626.2	636.8	639.4	621.4	V(PR) 1
	V(PR) 2	367.9	395.9	429.5	464.0	478.6	487.5	488.4	468.2	440.6	V(PR) 2
	VTHETA PR1	-435.8	-431.2	-436.6	-453.1	-475.3	-497.6	-514.1	-519.5	-524.9	VTHETA PR1
	VTHETA PR2	-136.3	-147.3	-171.0	-190.6	-216.5	-249.3	-268.8	-273.1	-288.8	VTHETA PR2
	U 1	425.79	431.17	436.59	453.06	475.34	497.64	514.12	519.53	524.90	U 1
	U 2	427.01	431.96	436.92	451.78	471.58	491.40	506.27	511.23	516.20	U 2
	M 1	0.3172	0.3446	0.3454	0.3485	0.3477	0.3446	0.3404	0.3376	0.3005	M 1
	M 2	0.3993	0.4147	0.4249	0.4455	0.4453	0.4331	0.4215	0.4001	0.3584	M 2
	M(PR) 1	0.4990	0.5210	0.5252	0.5387	0.5537	0.5676	0.5769	0.5792	0.5616	M(PR) 1
	M(PR) 2	0.3274	0.3532	0.3840	0.4157	0.4286	0.4363	0.4363	0.4175	0.3918	M(PR) 2
	TURN(PR)	28.793	26.753	25.416	25.421	24.215	21.869	20.447	18.658	16.691	TURN(PR)
	UUBAR	0.2115	0.1481	0.1088	0.0368	0.0308	0.0373	0.0606	0.1234	0.1319	UUBAR
	LOSS PARA	0.0570	0.0532	0.0296	0.0103	0.0088	0.0108	0.0175	0.0350	0.0352	LOSS PARA
	DFAC	0.4863	0.4570	0.3952	0.3542	0.3502	0.3506	0.3612	0.3970	0.4193	DFAC
	EFFP	0.8659	0.8977	0.7912	0.9211	0.9122	0.9163	0.8515	0.7712	0.7447	EFFP
	EFF	0.8609	0.8933	0.7879	0.9197	0.9106	0.9148	0.8489	0.7676	0.7409	EFF
	INCID	-1.307	-3.634	-3.806	-4.370	-4.948	-5.407	-5.550	-5.472	-2.951	INCID
	DEVM	13.092	12.543	12.549	8.554	6.221	5.937	5.917	7.641	12.171	DEVM
	P 1	14.525	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.470	P 1
	P 2	16.100	16.270	16.390	16.625	16.680	16.630	16.570	16.380	16.050	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	542.130	540.800	539.570	538.950	539.710	539.110	540.040	540.000	539.740	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	40.067	37.429	33.719	31.515	30.658	29.768	29.908	31.712	33.973	BETA 2
STATOR-T.E.	BETA 2A	0.100	0.520	0.560	0.620	0.830	0.700	0.910	0.970	0.850	BETA 2A
	V 2	451.76	468.57	479.19	500.22	501.35	489.16	478.20	454.98	408.94	V 2
	V 2A	356.64	379.94	383.95	442.89	470.15	467.46	458.58	433.50	402.60	V 2A
	VZ 2	345.73	372.09	398.57	426.37	431.03	424.09	413.76	386.29	338.43	VZ 2
	VZ 2A	358.64	379.92	383.93	442.81	469.91	467.03	457.95	432.82	401.92	VZ 2A
	V-THETA 2	290.79	284.79	266.00	261.43	255.49	242.56	238.00	238.69	228.04	V-THETA 2
	V-THETA 2A	0.63	3.45	3.75	4.79	6.81	5.71	7.29	7.33	5.97	V-THETA 2A
	M 2	0.4022	0.4182	0.4285	0.4483	0.4490	0.4380	0.4274	0.4060	0.3638	M 2
	M 2A	0.3174	0.3371	0.3411	0.3952	0.4201	0.4178	0.4093	0.3862	0.3580	M 2A
	TURN(PR)	30.967	36.909	33.158	30.890	29.808	29.028	28.939	30.673	33.043	TURN(PR)
	UUBAR	0.1355	0.1454	0.1852	0.0770	0.0070	0.0097	0.0460	0.0654	0.0071	UUBAR
	LOSS PARA	0.0456	0.0498	0.0637	0.0274	0.0026	0.0038	0.0182	0.0262	0.0029	LOSS PARA
	DFAC	0.4225	0.3937	0.3873	0.2973	0.2465	0.2317	0.2333	0.2518	0.2360	DFAC
	EFFP	0.6543	0.5985	0.5142	0.6705	0.9472	0.8967	0.4693	0.3368	0.7822	EFFP
	INCID	-6.904	-8.772	-11.752	-12.159	-11.592	-12.625	-13.456	-12.212	-10.562	INCID
	DEVM	13.131	13.374	13.294	12.954	12.950	13.408	14.419	14.777	15.001	DEVM
	P 2	16.100	16.270	16.390	16.625	16.680	16.630	16.570	16.380	16.050	P 2
	P 2A	15.870	16.000	16.030	16.460	16.655	16.610	16.480	16.265	16.040	P 2A
	T 2	542.130	540.800	539.570	538.950	539.710	539.110	540.040	540.000	539.740	T 2
	T 2A	542.130	540.800	539.570	538.950	539.710	539.110	540.040	540.000	539.740	T 2A
	UUBAR FS	0.1051	0.1298	0.1207	0.0492	0.0327	0.0228	0.0544	0.1121	0.1698	UUBAR FS
	P2 FS	16.042	16.235	16.247	16.562	16.737	16.657	16.587	16.472	16.325	P2 FS
	LOSS PARA FS	0.0353	0.0441	0.0415	0.0175	0.0121	0.0089	0.0215	0.0449	0.0693	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 69.96 EQUIVALENT ROTOR SPEED = 2945.26 CORRECTED WEIGHT FLOW = 82.85

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	329.40	329.40	329.40	329.40	329.40	329.40	329.40	329.40	329.40	V 0
	V 1	318.30	330.26	332.58	338.53	333.84	330.13	320.04	323.21	289.29	V 1
	VZ 0	329.40	329.40	329.40	329.40	329.38	329.34	329.31	329.30	329.29	VZ 0
	VZ 1	318.30	330.26	332.58	338.52	333.81	330.07	319.95	323.10	289.19	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2977	0.2977	0.2977	0.2977	0.2977	0.2977	0.2977	0.2977	0.2977	M 0
	M 1	0.2875	0.2984	0.3006	0.3061	0.3017	0.2983	0.2891	0.2920	0.2609	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.0959	0.0160	0.0	0.0	0.0	0.0	0.0	0.0	0.2100	UUBAR
	DFAC	0.034	-0.003	-0.010	-0.028	-0.013	-0.002	0.028	0.019	0.122	DFAC
	EFFP	-2.5303	0.2516	0.9988	0.9997	1.0000	0.9566	0.9995	0.9998	9.0924	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.610	14.680	14.694	14.694	14.694	14.694	14.694	14.694	14.510	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	43.379	40.583	38.245	35.325	33.909	33.586	33.972	35.498	38.297	BETA 2
	BETA(PR) 1	51.888	51.248	51.399	51.935	53.713	55.320	57.016	57.024	60.122	BETA(PR) 1
	BETA(PR) 2	18.412	22.032	25.705	26.316	29.176	32.011	34.159	36.544	41.686	BETA(PR) 2
	V 1	334.10	346.15	348.62	354.92	349.26	344.82	334.36	337.85	302.33	V 1
	V 2	459.87	451.06	438.31	460.36	462.16	458.25	452.40	432.77	392.42	V 2
	VZ 1	334.09	346.15	348.62	354.88	349.09	344.41	333.75	337.16	301.64	VZ 1
	VZ 2	334.24	342.56	344.23	375.54	383.33	381.26	374.46	351.60	307.30	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	315.85	293.43	271.32	266.15	257.67	253.18	252.31	250.77	242.66	V-THETA 2
	V(PR) 1	541.3	553.0	558.8	575.6	590.0	605.5	613.4	619.8	605.8	V(PR) 1
	V(PR) 2	352.3	369.6	382.0	419.0	439.3	450.2	453.4	438.5	412.3	V(PR) 2
	VTHETA PR1	-425.9	-431.3	-436.7	-453.2	-475.5	-497.8	-514.2	-519.7	-525.0	VTHETA PR1
	VTHETA PR2	-111.3	-138.6	-165.7	-185.7	-214.0	-238.3	-254.1	-260.6	-273.7	VTHETA PR2
	U 1	425.90	431.27	436.69	453.17	475.46	497.76	514.24	519.66	525.02	U 1
	U 2	427.11	432.06	437.02	451.89	471.70	491.51	506.40	511.36	516.33	U 2
	M 1	0.3020	0.3131	0.3154	0.3212	0.3160	0.3119	0.3022	0.3054	0.2728	M 1
	M 2	0.4083	0.4010	0.3898	0.4107	0.4122	0.4086	0.4027	0.3845	0.3479	M 2
	M(PR) 1	0.4893	0.5002	0.5055	0.5209	0.5337	0.5476	0.5544	0.5604	0.5467	M(PR) 1
	M(PR) 2	0.3128	0.3285	0.3398	0.3738	0.3918	0.4014	0.4036	0.3896	0.3655	M(PR) 2
	TURN(PR)	33.476	29.216	25.695	25.621	24.545	23.325	22.884	20.513	18.479	TURN(PR)
	UUBAR	0.1721	0.1528	0.1318	0.0620	0.0436	0.0489	0.0697	0.1201	0.1324	UUBAR
	LOSS PARA	0.0474	0.0416	0.0353	0.0171	0.0122	0.0139	0.0200	0.0338	0.0350	LOSS PARA
	DFAC	0.5189	0.4878	0.4607	0.4140	0.3953	0.3961	0.4023	0.4330	0.4599	DFAC
	EFFP	0.6902	0.7025	0.7073	0.8419	0.8579	0.8663	0.8155	0.7419	0.7273	EFFP
	EFF	0.6848	0.6976	0.7027	0.8391	0.8553	0.8639	0.8122	0.7376	0.7228	EFF
	INCID	0.046	-1.030	-1.291	-2.122	-2.350	-2.742	-2.426	-2.852	-0.531	INCID
	DEVM	10.663	12.734	14.785	10.613	8.489	7.148	6.605	8.408	12.803	DEVM
	P 1	14.610	14.680	14.694	14.694	14.694	14.694	14.694	14.694	14.510	P 1
	P 2	16.500	16.470	16.390	16.600	16.670	16.700	16.690	16.530	16.250	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	545.490	543.550	542.100	540.620	540.960	541.060	542.370	542.760	542.300	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	43.015	40.213	37.914	35.124	33.664	33.255	33.550	35.027	37.756	BETA 2
STATOR-T.E.	BETA 2A	1.450	1.430	1.220	0.870	0.670	0.930	1.561	1.541	1.121	BETA 2A
	V 2	463.07	454.66	441.77	463.08	465.76	463.11	458.37	438.80	398.11	V 2
	V 2A	335.81	350.09	354.41	387.28	417.36	422.95	425.40	398.88	368.06	V 2A
	VZ 2	338.58	347.19	348.52	378.70	387.45	386.83	381.36	358.67	314.16	VZ 2
	VZ 2A	335.70	349.98	354.33	387.19	417.17	422.53	424.71	398.18	367.42	VZ 2A
	V-THETA 2	315.90	293.53	271.45	266.39	258.04	253.66	252.90	251.39	243.30	V-THETA 2
	V-THETA 2A	8.50	8.74	7.55	5.88	4.88	6.86	11.57	10.71	7.19	V-THETA 2A
	M 2	0.4113	0.4043	0.3930	0.4132	0.4155	0.4130	0.4082	0.3900	0.3531	M 2
	M 2A	0.2959	0.3093	0.3136	0.3438	0.3711	0.3762	0.3779	0.3536	0.3258	M 2A
	TURN(PR)	41.565	38.783	36.694	34.248	32.973	32.283	31.928	33.414	36.553	TURN(PR)
	UUBAR	0.2095	0.1483	0.0906	0.0924	0.0107	0.0216	0.0387	0.0668	0.0224	UUBAR
	LOSS PARA	0.0703	0.0503	0.0311	0.0328	0.0040	0.0083	0.0153	0.0267	0.0090	LOSS PARA
	DFAC	0.4977	0.4428	0.4031	0.3637	0.3056	0.2926	0.2816	0.3117	0.3165	DFAC
	EFFP	0.5816	0.6560	0.7600	0.7120	0.9495	0.8786	0.7397	0.6381	0.8540	EFFP
	INCID	-3.956	-5.988	-7.556	-8.551	-8.587	-9.140	-9.818	-8.901	-6.782	INCID
	DEVM	14.481	14.284	13.954	13.204	12.790	13.638	15.069	15.347	15.271	DEVM
	P 2	16.500	16.470	16.390	16.600	16.670	16.700	16.690	16.530	16.250	P 2
	P 2A	16.120	16.210	16.240	16.430	16.650	16.660	16.620	16.420	16.220	P 2A
	T 2	545.490	543.550	542.100	540.620	540.960	541.060	542.370	542.760	542.300	T 2
	T 2A	545.490	543.550	542.100	540.620	540.960	541.060	542.370	542.760	542.300	T 2A
	UUBAR FS	0.1017	0.1245	0.1120	0.0511	0.0339	0.0410	0.0465	0.1062	0.1463	UUBAR FS
	P2 FS	16.282	16.422	16.430	16.520	16.715	16.737	16.705	16.602	16.445	P2 FS
	LOSS PARA FS	0.0341	0.0422	0.0384	0.0181	0.0126	0.0157	0.0183	0.0424	0.0587	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 70.19 EQUIVALENT ROTOR SPEED = 2954.95 CORRECTED WEIGHT FLOW = 75.29

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	296.90	296.90	296.90	296.90	296.90	296.90	296.90	296.90	296.90	V 0
	V 1	274.93	300.04	301.02	302.58	303.11	302.02	294.21	286.26	254.72	V 1
	VZ 0	296.90	296.90	296.90	296.90	296.88	296.85	296.82	296.81	296.80	VZ 0
	VZ 1	274.93	300.04	301.01	302.57	303.09	301.96	294.13	286.17	254.63	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2679	0.2679	0.2679	0.2679	0.2679	0.2679	0.2679	0.2679	0.2679	M 0
	M 1	0.2478	0.2707	0.2716	0.2730	0.2735	0.2725	0.2654	0.2581	0.2294	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1735	0.0	0.0	0.0	0.0	0.0	0.0	0.0476	0.2505	UUBAR
	DFAC	0.074	-0.011	-0.014	-0.019	-0.021	-0.017	0.009	0.036	0.142	DFAC
	EFFP	-5.4061	0.9995	1.0005	0.9992	1.0005	0.9993	1.0008	2.8981	13.5894	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.570	14.694	14.694	14.694	14.694	14.694	14.694	14.660	14.515	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	46.424	45.561	42.944	39.570	37.999	37.273	38.047	40.371	43.469	BETA 2
	BETA(PR) 1	55.998	54.009	54.261	55.123	56.417	57.767	59.277	60.220	63.260	BETA(PR) 1
	BETA(PR) 2	18.951	22.950	25.789	26.436	30.744	33.697	35.149	37.094	43.034	BETA(PR) 2
	V 1	288.25	314.26	315.28	316.93	316.89	315.25	307.18	298.96	266.00	V 1
	V 2	445.84	428.99	423.64	444.43	436.67	434.51	434.71	419.99	380.06	V 2
	VZ 1	288.24	314.26	315.28	316.90	316.73	314.89	306.62	298.34	265.39	VZ 1
	VZ 2	307.32	300.36	310.11	342.54	343.92	345.36	341.74	319.39	275.31	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	322.59	306.30	288.62	283.07	268.69	262.84	267.45	271.54	260.98	V-THETA 2
	V(PR) 1	515.4	534.8	539.8	554.2	572.7	590.6	600.5	601.0	590.1	V(PR) 1
	V(PR) 2	324.9	326.2	344.4	382.6	400.4	415.6	418.7	401.2	377.4	V(PR) 2
	VTHETA PR1	-427.3	-432.7	-438.1	-454.7	-477.0	-496.4	-515.9	-521.4	-526.8	VTHETA PR1
	VTHETA PR2	-105.5	-127.2	-149.8	-170.3	-204.6	-230.3	-240.6	-241.5	-257.0	VTHETA PR2
	U 1	427.30	432.69	438.13	454.66	477.02	499.40	515.94	521.37	526.75	U 1
	U 2	428.52	433.49	438.46	453.37	473.25	493.13	508.06	513.04	518.03	U 2
	M 1	0.2599	0.2838	0.2847	0.2862	0.2862	0.2847	0.2773	0.2697	0.2396	M 1
	M 2	0.3952	0.3804	0.3760	0.3953	0.3881	0.3862	0.3858	0.3721	0.3357	M 2
	M(PR) 1	0.4648	0.4829	0.4874	0.5005	0.5172	0.5333	0.5420	0.5422	0.5316	M(PR) 1
	M(PR) 2	0.2880	0.2893	0.3057	0.3403	0.3559	0.3694	0.3716	0.3555	0.3333	M(PR) 2
	TURN(PR)	37.047	31.059	29.472	28.690	25.682	24.089	24.158	23.163	20.273	TURN(PR)
	UUBAR	0.1272	0.1776	0.1431	0.0832	0.0764	0.0723	0.0938	0.1348	0.1457	UUBAR
	LOSS PARA	0.0349	0.0480	0.0383	0.0229	0.0211	0.0202	0.0266	0.0376	0.0376	LOSS PARA
	DFAC	0.5519	0.5584	0.5209	0.4665	0.4512	0.4448	0.4558	0.4893	0.5155	DFAC
	EFFP	0.7401	0.7019	0.7241	0.8184	0.8027	0.8214	0.7883	0.7460	0.6985	EFFP
	EFF	0.7351	0.6968	0.7195	0.8150	0.7991	0.8181	0.7843	0.7414	0.6932	EFF
	INCID	4.156	1.731	1.571	1.067	0.354	-0.293	-0.163	0.348	2.611	INCID
	DEVM	11.201	13.652	14.869	10.732	10.056	8.832	7.594	8.957	14.150	DEVM
	P 1	14.570	14.694	14.694	14.694	14.694	14.694	14.694	14.660	14.515	P 1
	P 2	16.660	16.555	16.525	16.700	16.685	16.730	16.770	16.665	16.410	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	546.250	544.500	543.300	542.400	542.700	542.650	544.150	544.800	545.400	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	46.025	45.130	42.559	39.339	37.722	36.904	37.569	39.820	42.832	BETA 2
STATOR-T.E.	BETA 2A	1.920	1.790	1.780	1.260	1.000	1.160	2.301	2.821	2.651	BETA 2A
	V 2	448.90	432.34	426.94	447.01	439.99	439.01	440.35	425.78	385.53	V 2
	V 2A	322.69	334.14	332.94	350.69	374.97	383.82	380.95	358.05	333.31	V 2A
	VZ 2	311.70	305.01	314.47	345.68	347.86	350.69	348.50	326.50	282.26	VZ 2
	VZ 2A	322.51	333.98	332.77	350.57	374.76	383.41	380.17	357.11	332.43	VZ 2A
	V-THETA 2	323.05	306.40	288.76	283.33	269.07	263.34	268.07	272.22	261.67	V-THETA 2
	V-THETA 2A	10.81	10.44	10.34	7.71	6.54	7.77	15.27	17.60	15.39	V-THETA 2A
	M 2	0.3980	0.3835	0.3790	0.3977	0.3912	0.3903	0.3909	0.3774	0.3407	M 2
	M 2A	0.2839	0.2947	0.2939	0.3101	0.3320	0.3400	0.3369	0.3161	0.2937	M 2A
	TURN(PR)	44.105	43.340	40.778	38.073	36.701	35.700	35.203	36.926	40.098	TURN(PR)
	UUBAR	0.1799	0.0845	0.0705	0.1102	0.0060	0.0090	0.0566	0.0929	0.0434	UUBAR
	LOSS PARA	0.0605	0.0287	0.0243	0.0391	0.0022	0.0035	0.0224	0.0371	0.0175	LOSS PARA
	DFAC	0.5154	0.4603	0.4449	0.4350	0.3694	0.3509	0.3637	0.3997	0.3949	DFAC
	EFFP	0.6468	0.8013	0.8296	0.7296	0.9795	0.9643	0.7882	0.6994	0.8360	EFFP
	INCID	-0.946	-1.071	-2.912	-4.336	-4.529	-5.493	-5.803	-4.111	-1.709	INCID
	DEVM	14.951	14.644	14.514	13.594	13.120	13.867	15.808	16.625	16.799	DEVM
	P 2	16.660	16.555	16.525	16.700	16.685	16.730	16.770	16.665	16.410	P 2
	P 2A	16.350	16.420	16.415	16.510	16.675	16.715	16.675	16.520	16.355	P 2A
	T 2	546.250	544.500	543.300	542.400	542.700	542.650	544.150	544.800	545.400	T 2
	T 2A	546.250	544.500	543.300	542.400	542.700	542.650	544.150	544.800	545.400	T 2A
	UUBAR FS	0.1116	0.1095	0.1021	0.0480	0.0348	0.0321	0.0524	0.1001	0.1566	UUBAR FS
	P2 FS	16.527	16.600	16.580	16.587	16.735	16.770	16.762	16.677	16.580	P2 FS
	LOSS PARA FS	0.0375	0.0371	0.0351	0.0170	0.0127	0.0124	0.0207	0.0399	0.0631	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 69.94 EQUIVALENT ROTOR SPEED = 2944.64 CORRECTED WEIGHT FLOW = 68.12

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.005	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	266.86	266.86	266.85	266.86	266.86	266.86	266.86	266.86	266.86	V 0
	V 1	245.43	267.72	269.45	271.92	274.97	269.25	264.07	256.82	227.43	V 1
	VZ 0	266.86	266.86	266.85	266.86	266.84	266.82	266.79	266.78	266.77	VZ 0
	VZ 1	245.43	267.72	269.45	271.91	274.94	269.21	264.00	256.74	227.35	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2404	0.2404	0.2404	0.2404	0.2404	0.2404	0.2404	0.2404	0.2404	M 0
	M 1	0.2209	0.2412	0.2428	0.2450	0.2478	0.2426	0.2379	0.2313	0.2046	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1761	0.0	0.0	0.0	0.0	0.0	0.0	0.0535	0.2693	UUBAR
	DFAC	0.080	-0.003	-0.010	-0.019	-0.030	-0.009	0.010	0.038	0.148	DFAC
	EFFP	-8.5007	1.0001	0.9997	0.9990	0.9997	0.9990	1.0001	3.4122	28.9817	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.592	14.694	14.694	14.694	14.694	14.694	14.694	14.663	14.538	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.005	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	50.177	49.569	48.174	44.334	42.181	41.274	43.048	46.789	50.639	BETA 2
	BETA(PR) 1	58.873	56.986	57.142	57.870	58.869	60.593	61.857	62.758	65.716	BETA(PR) 1
	BETA(PR) 2	17.357	22.895	27.278	28.376	31.331	34.590	37.500	39.541	43.323	BETA(PR) 2
	V 1	257.15	280.16	281.99	284.58	287.24	280.82	275.52	268.04	237.38	V 1
	V 2	441.05	417.34	401.21	416.37	420.30	417.62	407.80	395.66	376.99	V 2
	VZ 1	257.14	280.16	281.99	284.55	287.10	280.49	275.02	267.49	236.83	VZ 1
	VZ 2	282.46	270.66	267.55	297.78	311.31	313.54	297.57	270.50	238.74	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	338.74	317.67	298.97	290.94	282.09	275.20	277.96	287.94	291.06	V-THETA 2
	V(PR) 1	497.4	514.2	519.7	535.0	555.4	571.4	583.3	584.6	576.1	V(PR) 1
	V(PR) 2	295.9	293.8	301.0	338.5	364.7	381.3	375.7	351.4	328.8	V(PR) 2
	VTHETA PR1	-425.8	-431.2	-436.5	-453.1	-475.4	-497.7	-514.1	-519.5	-524.9	VTHETA PR1
	VTHETA PR2	-88.3	-114.3	-138.0	-160.8	-189.5	-216.2	-228.3	-223.3	-225.2	VTHETA PR2
	U 1	425.81	431.18	436.60	453.07	475.36	497.66	514.14	519.55	524.91	U 1
	U 2	427.02	431.97	436.93	451.79	471.60	491.41	506.29	511.25	516.22	U 2
	M 1	0.2316	0.2525	0.2542	0.2566	0.2590	0.2532	0.2483	0.2415	0.2136	M 1
	M 2	0.3916	0.3706	0.3562	0.3704	0.3739	0.3713	0.3617	0.3504	0.3332	M 2
	M(PR) 1	0.4480	0.4635	0.4685	0.4824	0.5008	0.5151	0.5257	0.5267	0.5184	M(PR) 1
	M(PR) 2	0.2627	0.2609	0.2673	0.3011	0.3244	0.3391	0.3333	0.3112	0.2906	M(PR) 2
	TURN(PR)	41.516	34.092	29.865	29.497	27.548	26.024	24.391	23.258	22.445	TURN(PR)
	UUBAR	0.1243	0.1865	0.1774	0.1138	0.0912	0.0901	0.1315	0.1835	0.1959	UUBAR
	LOSS PARA	0.0344	0.0505	0.0469	0.0308	0.0251	0.0249	0.0361	0.0495	0.0504	LOSS PARA
	DFAC	0.6031	0.6102	0.5913	0.5343	0.5062	0.4935	0.5197	0.5699	0.6064	DFAC
	EFFP	0.8507	0.7994	0.7903	0.8901	0.9053	0.9119	0.8291	0.7870	0.7737	EFFP
	EFF	0.8477	0.7959	0.7864	0.8880	0.9035	0.9102	0.8258	0.7830	0.7695	EFF
	INCID	7.031	4.708	4.452	3.813	2.807	2.534	2.419	2.888	5.071	INCID
	DEVM	9.607	13.597	16.358	12.672	10.643	9.724	9.944	11.402	14.439	DEVM
	P 1	14.592	14.694	14.694	14.694	14.694	14.694	14.694	14.663	14.538	P 1
	P 2	16.828	16.649	16.544	16.696	16.765	16.795	16.762	16.687	16.578	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	544.140	542.380	541.430	540.410	540.740	540.880	542.780	543.630	544.470	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	49.724	49.078	47.720	44.069	41.866	40.857	42.488	46.117	49.829	BETA 2
STATOR-T.E.	BETA 2A	2.540	2.470	2.260	1.820	2.380	2.341	2.961	3.561	3.802	BETA 2A
	V 2	444.07	420.57	404.29	418.74	423.46	421.89	413.03	401.02	382.40	V 2
	V 2A	294.27	300.97	303.12	315.70	346.29	350.25	340.14	328.06	308.98	V 2A
	VZ 2	287.08	275.48	271.93	300.83	315.22	318.80	304.18	277.61	246.36	VZ 2
	VZ 2A	293.98	300.69	302.83	315.51	345.86	349.66	339.25	326.96	307.82	VZ 2A
	V-THETA 2	338.80	317.78	299.11	291.21	282.49	275.73	278.61	288.66	291.83	V-THETA 2
	V-THETA 2A	13.04	12.97	11.95	10.03	14.38	14.29	17.55	20.35	20.46	V-THETA 2A
	M 2	0.3944	0.3735	0.3590	0.3725	0.3767	0.3753	0.3665	0.3553	0.3381	M 2
	M 2A	0.2591	0.2655	0.2677	0.2792	0.3066	0.3102	0.3005	0.2894	0.2721	M 2A
	TURN(PR)	47.184	46.608	45.460	42.243	39.465	38.472	39.461	42.483	45.947	TURN(PR)
	UUBAR	0.2221	0.1105	0.0375	0.0996	0.0332	0.0366	0.0761	0.0839	0.0872	UUBAR
	LOSS PARA	0.0747	0.0376	0.0129	0.0354	0.0123	0.0141	0.0301	0.0335	0.0351	LOSS PARA
	DFAC	0.5844	0.5313	0.4953	0.4852	0.4175	0.4096	0.4284	0.4512	0.4803	DFAC
	EFFP	0.6227	0.7844	0.9183	0.7806	0.9052	0.8885	0.7755	0.7582	0.7593	EFFP
	INCID	2.753	2.877	2.253	0.394	-0.386	-1.542	-0.886	2.185	5.289	INCID
	DEVM	15.571	15.324	14.994	14.154	14.499	15.047	16.467	17.364	17.948	DEVM
	P 2	16.828	16.649	16.544	16.696	16.765	16.795	16.762	16.687	16.578	P 2
	P 2A	16.448	16.480	16.491	16.544	16.713	16.738	16.649	16.570	16.468	P 2A
	T 2	544.140	542.380	541.430	540.410	540.740	540.880	542.780	543.630	544.470	T 2
	T 2A	544.140	542.380	541.430	540.410	540.740	540.880	542.780	543.630	544.470	T 2A
	UUBAR FS	0.1345	0.1363	0.1179	0.0669	0.0372	0.0666	0.0916	0.0939	0.1300	UUBAR FS
	P2 FS	16.654	16.694	16.672	16.642	16.771	16.845	16.787	16.702	16.640	P2 FS
	LOSS PARA FS	0.0452	0.0464	0.0404	0.0237	0.0137	0.0256	0.0362	0.0374	0.0523	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 70.11 EQUIVALENT ROTOR SPEED = 2951.56 CORRECTED WEIGHT FLOW = 59.63

INLET											
	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	232.07	232.07	232.07	232.07	232.07	232.07	232.07	232.07	232.07	V 0
	V 1	219.99	241.22	243.14	249.03	248.76	243.20	235.44	223.78	179.65	V 1
	VZ 0	232.07	232.07	232.07	232.06	232.05	232.02	232.00	231.99	231.99	VZ 0
	VZ 1	219.99	241.22	243.14	249.03	248.74	243.16	235.38	223.71	179.59	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2088	0.2088	0.2088	0.2088	0.2088	0.2088	0.2088	0.2088	0.2088	M 0
	M 1	0.1978	0.2171	0.2188	0.2242	0.2239	0.2189	0.2118	0.2013	0.1613	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1979	0.0	0.0	0.0	0.0	0.0	0.0	0.0819	0.4003	UUBAR
	DFAC	0.052	-0.039	-0.048	-0.073	-0.072	-0.048	-0.015	0.036	0.226	DFAC
	EFFP	-1.0843	0.9995	0.9987	0.9995	0.9993	0.9990	0.9971	-6.8157	78.9077	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.667	14.694	14.694	14.694	14.694	14.694	14.694	14.658	14.518	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.005	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	53.745	53.409	52.744	49.365	47.055	46.496	52.322	55.777	59.247	BETA 2
	BETA(PR) 1	61.642	59.727	59.840	60.163	61.417	63.085	64.566	65.901	70.440	BETA(PR) 1
	BETA(PR) 2	14.869	22.329	27.077	28.560	31.856	34.441	40.088	40.374	39.806	BETA(PR) 2
	V 1	230.38	252.28	254.30	260.50	259.73	253.52	245.52	233.42	187.37	V 1
	V 2	444.28	413.26	396.19	406.79	409.31	411.72	389.00	393.06	402.88	V 2
	VZ 1	230.37	252.28	254.30	260.47	259.60	253.23	245.07	232.94	186.94	VZ 1
	VZ 2	262.74	246.34	239.84	264.89	278.75	283.18	237.52	220.84	205.82	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	358.26	331.81	315.34	308.67	299.49	298.37	307.56	324.68	345.91	V-THETA 2
	V(PR) 1	485.0	500.4	506.1	523.5	542.7	559.6	570.8	570.7	558.5	V(PR) 1
	V(PR) 2	271.8	266.3	269.4	301.6	328.4	343.8	311.0	290.4	268.5	V(PR) 2
	VTHETA PR1	-426.8	-432.2	-437.5	-454.1	-476.5	-498.8	-515.3	-520.8	-526.1	VTHETA PR1
	VTHETA PR2	-69.8	-101.2	-122.5	-144.2	-173.2	-194.2	-199.9	-187.8	-171.5	VTHETA PR2
	U 1	426.81	432.19	437.63	454.14	476.47	498.83	515.34	520.77	526.15	U 1
	U 2	428.02	432.99	437.95	452.85	472.71	492.57	507.48	512.45	517.43	U 2
	M 1	0.2072	0.2271	0.2290	0.2346	0.2339	0.2283	0.2210	0.2100	0.1683	M 1
	M 2	0.3934	0.3659	0.3507	0.3607	0.3628	0.3646	0.3433	0.3467	0.3553	M 2
	M(PR) 1	0.4363	0.4506	0.4558	0.4715	0.4887	0.5038	0.5138	0.5134	0.5017	M(PR) 1
	M(PR) 2	0.2407	0.2358	0.2385	0.2675	0.2911	0.3045	0.2745	0.2562	0.2367	M(PR) 2
	TURN(PR)	46.772	37.398	32.763	31.607	29.571	28.667	24.517	25.572	30.691	TURN(PR)
	UUBAR	0.1363	0.1976	0.2005	0.1550	0.1297	0.1389	0.2476	0.2806	0.2817	UUBAR
	LOSS PARA	0.0382	0.0537	0.0531	0.0419	0.0355	0.0385	0.0657	0.0748	0.0765	LOSS PARA
	DFAC	0.6543	0.6628	0.6530	0.6049	0.5717	0.5636	0.6405	0.6887	0.7364	DFAC
	EFFP	0.8069	0.7540	0.7444	0.8199	0.8286	0.8112	0.6975	0.7054	0.7589	EFFP
	EFF	0.8027	0.7494	0.7399	0.8165	0.8253	0.8074	0.6919	0.6997	0.7537	EFF
	INCID	9.800	7.449	7.150	6.107	5.355	5.029	5.132	6.035	9.802	INCID
	DEVM	7.120	13.031	16.158	12.856	11.168	9.576	12.530	12.235	10.924	DEVM
	P 1	14.607	14.694	14.694	14.694	14.694	14.694	14.694	14.658	14.518	P 1
	P 2	16.987	16.759	16.644	16.757	16.829	16.882	16.719	16.768	16.863	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	547.180	545.200	544.110	543.000	543.540	544.690	546.870	547.740	548.780	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	53.229	52.842	52.213	49.051	46.679	45.995	51.574	54.864	58.121	BETA 2
STATOR-T.E.	BETA 2A	2.420	2.490	2.520	1.980	2.730	2.941	2.981	3.322	3.622	BETA 2A
	V 2	447.33	416.48	399.22	409.08	412.40	415.95	393.88	398.36	408.77	V 2
	V 2A	291.71	296.75	294.21	298.39	329.19	321.83	307.53	302.35	291.99	V 2A
	VZ 2	267.78	251.56	244.61	268.08	282.84	288.75	244.57	229.06	215.70	VZ 2
	VZ 2A	291.44	296.47	293.92	298.18	328.69	321.16	306.73	301.42	290.95	VZ 2A
	V-THETA 2	358.33	331.92	315.49	308.95	299.92	298.95	308.27	325.48	346.82	V-THETA 2
	V-THETA 2A	12.32	12.89	12.94	10.31	15.67	15.93	15.97	17.49	18.42	V-THETA 2A
	M 2	0.3962	0.3688	0.3535	0.3628	0.3657	0.3685	0.3477	0.3515	0.3606	M 2
	M 2A	0.2561	0.2610	0.2593	0.2630	0.2905	0.2836	0.2702	0.2654	0.2559	M 2A
	TURN(PR)	50.809	50.352	49.692	47.065	43.928	43.110	48.528	51.473	54.427	TURN(PR)
	UUBAR	0.2216	0.0932	0.0269	0.0465	0.0148	0.0933	0.0499	0.1107	0.2008	UUBAR
	LOSS PARA	0.0745	0.0317	0.0092	0.0307	0.0055	0.0359	0.0198	0.0442	0.0809	LOSS PARA
	DFAC	0.6084	0.5484	0.5242	0.5305	0.4579	0.4895	0.5150	0.5521	0.6120	DFAC
	EFFP	0.6328	0.8199	0.9443	0.8239	0.9613	0.7790	0.9780	0.7504	0.6070	EFFP
	INCID	6.258	6.641	6.742	5.376	4.427	3.595	8.202	10.936	13.589	INCID
	DEVM	15.451	15.344	15.254	14.314	14.849	15.546	16.488	17.125	17.768	DEVM
	P 2	16.987	16.759	16.644	16.757	16.829	16.882	16.719	16.768	16.863	P 2
	P 2A	16.601	16.619	16.607	16.631	16.807	16.741	16.652	16.616	16.572	P 2A
	T 2	547.180	545.200	544.110	543.000	543.540	544.690	546.870	547.740	548.780	T 2
	T 2A	547.180	545.200	544.110	543.000	543.540	544.690	546.870	547.740	548.780	T 2A
	UUBAR FS	0.1444	0.1476	0.1272	0.1067	0.0960	0.1169	0.1195	0.1262	0.1614	UUBAR FS
	P2 FS	16.830	16.854	16.802	16.790	16.962	16.922	16.825	16.792	16.795	P2 FS
	LOSS PARA FS	0.0485	0.0502	0.0435	0.0378	0.0356	0.0449	0.0474	0.0503	0.0650	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 49.65 EQUIVALENT ROTOR SPEED = 2090.25 CORRECTED WEIGHT FLOW = 72.91

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	286.85	286.85	286.85	286.85	286.85	286.85	286.85	286.85	286.85	V 0
	V 1	262.97	284.63	285.45	290.47	288.55	282.25	278.49	270.01	252.74	V 1
	VZ 0	286.85	286.85	286.85	286.85	286.83	286.80	286.77	286.76	286.75	VZ 0
	VZ 1	262.97	284.63	285.45	290.47	288.52	282.20	278.41	269.92	252.65	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2587	0.2587	0.2587	0.2587	0.2587	0.2587	0.2587	0.2587	0.2587	M 0
	M 1	0.2369	0.2566	0.2574	0.2620	0.2602	0.2565	0.2510	0.2433	0.2276	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1587	0.0	0.0	0.0	0.0	0.0	0.0	0.0704	0.2036	UUBAR
	DFAC	0.083	0.008	0.005	-0.013	-0.006	0.016	0.029	0.059	0.119	DFAC
	EFFP	33.1357	1.0000	0.9995	1.0000	1.0028	0.9996	0.9998	2.5044	9.0026	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.588	14.694	14.694	14.694	14.694	14.694	14.694	14.647	14.558	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	34.746	32.206	29.548	27.051	26.080	24.579	23.577	23.593	23.729	BETA 2
	BETA(PR) 1	47.639	45.769	46.043	46.603	48.231	50.220	51.517	52.665	54.752	BETA(PR) 1
	BETA(PR) 2	21.519	20.186	19.515	22.367	26.324	30.743	33.520	35.472	43.061	BETA(PR) 2
	V 1	275.63	297.97	298.83	304.13	301.52	294.46	290.65	281.88	263.92	V 1
	V 2	339.09	363.30	386.99	390.57	378.95	365.13	357.70	345.48	292.17	V 2
	VZ 1	275.62	297.97	298.83	304.10	301.37	294.12	290.13	281.30	263.31	VZ 1
	VZ 2	278.63	307.40	336.66	347.78	340.13	331.53	327.07	315.77	266.68	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	193.26	193.62	190.84	177.59	166.48	151.64	142.74	137.91	117.22	V-THETA 2
	V(PR) 1	409.1	427.2	430.5	442.6	452.5	459.9	466.6	464.2	456.6	V(PR) 1
	V(PR) 2	299.5	327.5	357.2	376.1	379.7	386.3	393.1	388.5	365.7	V(PR) 2
	VTHETA PR1	-302.3	-306.1	-309.9	-321.6	-337.4	-353.3	-365.0	-368.8	-372.6	VTHETA PR1
	VTHETA PR2	-109.9	-113.0	-119.3	-143.1	-168.3	-197.2	-216.6	-225.0	-249.2	VTHETA PR2
	U 1	302.26	306.07	309.92	321.61	337.43	353.26	364.96	368.80	372.61	U 1
	U 2	303.12	306.64	310.15	320.70	334.76	348.83	359.39	362.91	366.44	U 2
	M 1	0.2484	0.2688	0.2696	0.2745	0.2721	0.2656	0.2621	0.2541	0.2377	M 1
	M 2	0.3023	0.3246	0.3464	0.3500	0.3393	0.3269	0.3201	0.3089	0.2606	M 2
	M(PR) 1	0.3687	0.3854	0.3884	0.3995	0.4083	0.4148	0.4208	0.4185	0.4113	M(PR) 1
	M(PR) 2	0.2670	0.2926	0.3198	0.3371	0.3401	0.3459	0.3517	0.3474	0.3261	M(PR) 2
	TURN(PR)	26.119	25.583	26.529	24.238	21.912	19.491	18.020	17.222	11.730	TURN(PR)
	UUBAR	0.2279	0.1885	0.0827	0.0278	0.0522	0.0553	0.0563	0.0584	0.1046	UUBAR
	LOSS PARA	0.0616	0.0520	0.0232	0.0079	0.0151	0.0160	0.0163	0.0166	0.0270	LOSS PARA
	DFAC	0.4052	0.3665	0.3022	0.2735	0.2787	0.2702	0.2627	0.2661	0.2891	DFAC
	EFFP	0.4637	0.5193	0.6607	0.7450	0.6899	0.6874	0.6436	0.6257	0.4690	EFFP
	EFF	0.4603	0.5160	0.6579	0.7428	0.6874	0.6850	0.6410	0.6231	0.4662	EFF
	INCID	-4.203	-6.509	-6.647	-7.454	-7.833	-7.843	-7.928	-7.213	-5.906	INCID
	DEVM	13.770	10.888	8.596	6.664	5.639	5.880	5.967	7.337	14.177	DEVM
	P 1	14.588	14.694	14.694	14.694	14.694	14.694	14.694	14.647	14.558	P 1
	P 2	15.251	15.408	15.565	15.610	15.546	15.490	15.459	15.386	15.100	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	533.100	532.420	531.780	530.870	530.950	530.200	530.520	530.490	530.380	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	34.501	31.951	29.319	26.915	25.914	24.369	23.324	23.322	23.445	BETA 2
STATOR-T.E.	BETA 2A	0.680	1.005	1.045	-0.200	-1.140	-1.240	-0.095	-0.340	-1.451	BETA 2A
	V 2	341.25	366.00	389.93	392.75	381.72	368.73	362.10	350.01	296.17	V 2
	V 2A	312.53	338.49	346.13	377.35	387.47	376.07	368.99	351.37	319.08	V 2A
	VZ 2	281.23	310.55	339.98	350.15	343.12	335.43	331.83	320.68	271.02	VZ 2
	VZ 2A	312.51	338.44	346.07	377.31	387.23	375.66	368.53	350.87	318.48	VZ 2A
	V-THETA 2	193.29	193.69	190.93	177.76	166.72	151.94	143.07	138.25	117.53	V-THETA 2
	V-THETA 2A	3.71	5.94	6.31	-1.32	-7.71	-8.13	-0.61	-2.08	-8.06	V-THETA 2A
	M 2	0.3043	0.3270	0.3491	0.3520	0.3419	0.3302	0.3241	0.3130	0.2642	M 2
	M 2A	0.2783	0.3020	0.3091	0.3379	0.3472	0.3370	0.3304	0.3143	0.2849	M 2A
	TURN(PR)	33.821	30.946	28.273	27.110	27.037	25.573	23.369	23.605	24.829	TURN(PR)
	UUBAR	0.0938	0.1109	0.1955	0.0835	0.0033	0.0311	0.0793	0.1207	0.0140	UUBAR
	LOSS PARA	0.0316	0.0377	0.0673	0.0297	0.0012	0.0120	0.0314	0.0483	0.0056	LOSS PARA
	DFAC	0.2713	0.2499	0.2755	0.2015	0.1546	0.1479	0.1390	0.1573	0.0947	DFAC
	EFFP	0.4394	0.2649	0.1172	-0.0326	1.1039	1.7358	2.9738	16.0039	1.0844	EFFP
	INCID	-12.470	-14.250	-16.152	-16.759	-16.333	-18.019	-20.030	-20.589	-21.073	INCID
	DEVM	13.711	13.859	13.779	12.134	10.980	11.469	13.415	13.468	12.704	DEVM
	P 2	15.251	15.408	15.565	15.610	15.546	15.490	15.459	15.386	15.100	P 2
	P 2A	15.162	15.286	15.319	15.503	15.542	15.455	15.373	15.264	15.090	P 2A
	T 2	533.100	532.420	531.780	530.870	530.950	530.200	530.520	530.490	530.380	T 2
	T 2A	533.100	532.420	531.780	530.870	530.950	530.200	530.520	530.490	530.380	T 2A
	UUBAR FS	0.1304	0.1242	0.1122	0.0684	0.0459	0.0521	0.0969	0.1152	0.1988	UUBAR FS
	P2 FS	15.287	15.422	15.442	15.592	15.600	15.515	15.482	15.377	15.265	P2 FS
	LOSS PARA FS	0.0439	0.0422	0.0386	0.0243	0.0166	0.0201	0.0383	0.0460	0.0795	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 49.92 EQUIVALENT ROTOR SPEED = 2101.63 CORRECTED WEIGHT FLOW = 66.34

INLET GUIDE VANE	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
I.G.V.-L.E.	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
I.G.V.-T.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	259.52	259.52	259.52	259.52	259.52	259.52	259.52	259.52	259.52	V 0
	V 1	247.47	261.57	263.78	266.48	264.74	261.30	256.01	255.64	226.40	V 1
	VZ 0	259.52	259.52	259.52	259.52	259.50	259.48	259.45	259.44	259.43	VZ 0
	VZ 1	247.47	261.57	263.78	266.48	264.72	261.25	255.94	255.56	226.32	VZ 1
	V-THETA 0	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2337	0.2337	0.2337	0.2337	0.2337	0.2337	0.2337	0.2337	0.2337	M 0
	M 1	0.2228	0.2356	0.2376	0.2401	0.2385	0.2353	0.2305	0.2302	0.2036	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1167	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2261	UUBAR
	DFAC	0.046	-0.008	-0.016	-0.027	-0.020	-0.007	0.014	0.015	0.128	DFAC
	EFFP	-3.8555	0.9947	0.9986	1.0001	0.9990	0.9993	1.0006	1.0009	14.0294	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.630	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.570	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	38.569	36.485	33.720	30.580	29.668	28.415	28.351	28.968	30.561	BETA 2
	BETA(PR) 1	49.530	48.353	48.467	49.230	50.834	52.539	54.001	54.320	57.818	BETA(PR) 1
	BETA(PR) 2	21.667	21.019	21.585	23.283	27.296	30.983	34.258	35.770	39.321	BETA(PR) 2
	V 1	259.30	273.68	276.01	278.86	276.50	272.48	267.08	266.80	236.30	V 1
	V 2	326.28	341.22	352.69	366.81	357.03	349.84	337.10	328.16	304.34	V 2
	VZ 1	259.29	273.68	276.01	278.83	276.37	272.16	266.59	266.25	235.76	VZ 1
	VZ 2	255.10	274.35	293.35	315.74	310.02	307.25	296.02	286.41	261.38	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	203.42	202.89	195.78	186.58	176.60	166.24	159.73	158.55	154.34	V-THETA 2
	V(PR) 1	399.5	411.8	416.3	427.0	437.7	447.7	453.8	456.8	442.9	V(PR) 1
	V(PR) 2	274.5	293.9	315.5	343.8	349.1	358.9	358.8	353.7	338.6	V(PR) 2
	VTHETA PR1	-303.9	-307.7	-311.6	-323.4	-339.3	-355.2	-366.9	-370.8	-374.6	VTHETA PR1
	VTHETA PR2	-101.3	-105.4	-116.1	-135.9	-160.0	-184.5	-201.6	-206.3	-214.1	VTHETA PR2
	U 1	303.91	307.74	311.61	323.37	339.27	355.18	366.95	370.81	374.64	U 1
	U 2	304.77	308.31	311.84	322.45	336.59	350.73	361.35	364.89	368.43	U 2
	M 1	0.2335	0.2466	0.2488	0.2514	0.2492	0.2455	0.2406	0.2404	0.2126	M 1
	M 2	0.2907	0.3045	0.3150	0.3281	0.3191	0.3125	0.3009	0.2929	0.2713	M 2
	M(PR) 1	0.3598	0.3711	0.3752	0.3849	0.3945	0.4034	0.4089	0.4115	0.3985	M(PR) 1
	M(PR) 2	0.2445	0.2622	0.2818	0.3075	0.3120	0.3206	0.3204	0.3157	0.3018	M(PR) 2
	TURN(PR)	27.862	27.333	26.881	25.948	23.545	21.570	19.768	18.581	18.537	TURN(PR)
	UUBAR	0.2255	0.1967	0.1136	0.0396	0.0429	0.0477	0.0701	0.0996	0.1012	UUBAR
	LOSS PARA	0.0608	0.0539	0.0314	0.0112	0.0123	0.0137	0.0201	0.0283	0.0277	LOSS PARA
	DFAC	0.4609	0.4312	0.3820	0.3291	0.3317	0.3223	0.3304	0.3462	0.3578	DFAC
	EFFP	0.5065	0.5620	0.6462	0.7376	0.7112	0.6875	0.6560	0.6240	0.6232	EFFP
	EFF	0.5031	0.5588	0.6433	0.7353	0.7086	0.6848	0.6533	0.6211	0.6204	EFF
	INCID	-2.312	-3.926	-4.224	-4.827	-5.230	-5.523	-5.442	-5.557	-2.837	INCID
	DEVM	13.918	11.721	10.666	7.581	6.610	6.121	6.705	7.634	10.439	DEVM
	P 1	14.630	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.570	P 1
	P 2	15.370	15.470	15.560	15.650	15.630	15.600	15.550	15.500	15.360	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	533.340	532.450	532.000	531.520	531.730	531.760	531.650	531.540	531.410	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	38.290	36.190	33.457	30.426	29.479	28.170	28.044	28.630	30.179	BETA 2
STATOR-T.E.	BETA 2A	0.400	0.400	0.470	0.580	-0.250	-0.810	0.650	0.560	-0.070	BETA 2A
	V 2	328.34	343.73	355.31	368.82	359.60	353.26	341.19	332.42	308.53	V 2
	V 2A	272.67	291.29	299.13	335.59	344.11	342.62	334.47	314.76	289.47	V 2A
	VZ 2	257.71	277.41	296.43	317.98	312.86	311.02	300.56	291.16	266.10	VZ 2
	VZ 2A	272.66	291.28	299.11	335.54	343.96	342.30	334.02	314.30	289.01	VZ 2A
	V-THETA 2	203.46	202.96	195.88	186.75	176.85	166.56	160.10	158.94	154.75	V-THETA 2
	V-THETA 2A	1.90	2.03	2.45	3.40	-1.50	-4.84	3.75	3.07	-0.35	V-THETA 2A
	M 2	0.2925	0.3067	0.3174	0.3299	0.3214	0.3156	0.3047	0.2967	0.2751	M 2
	M 2A	0.2423	0.2593	0.2664	0.2996	0.3073	0.3061	0.2986	0.2807	0.2579	M 2A
	TURN(PR)	37.890	35.790	32.986	29.940	29.710	28.941	27.336	28.005	30.173	TURN(PR)
	UUBAR	0.1467	0.1433	0.1811	0.0704	0.0093	0.0192	0.0413	0.1089	0.1144	UUBAR
	LOSS PARA	0.0492	0.0486	0.0622	0.0250	0.0034	0.0074	0.0163	0.0436	0.0462	LOSS PARA
	DFAC	0.3757	0.3511	0.3453	0.2669	0.2271	0.2175	0.2021	0.2418	0.2660	DFAC
	EFFP	0.5419	0.5089	0.4001	0.6083	0.8951	3.6001	-0.0165	-0.0162	0.0728	EFFP
	INCID	-8.681	-10.011	-12.014	-13.249	-12.770	-14.222	-15.318	-15.290	-14.351	INCID
	DEVM	13.431	13.254	13.204	12.914	11.870	11.898	14.160	14.368	14.082	DEVM
	P 2	15.370	15.470	15.560	15.650	15.630	15.600	15.550	15.500	15.360	P 2
	P 2A	15.240	15.330	15.370	15.570	15.620	15.580	15.510	15.400	15.270	P 2A
	T 2	533.340	532.450	532.000	531.520	531.730	531.760	531.650	531.540	531.410	T 2
	T 2A	533.340	532.450	532.000	531.520	531.730	531.260	531.650	531.540	531.410	T 2A
	UUBAR FS	0.1247	0.1100	0.1125	0.0539	0.0345	0.0394	0.0846	0.1451	0.1787	UUBAR FS
	P2 FS	15.377	15.465	15.492	15.645	15.680	15.625	15.602	15.542	15.435	P2 FS
	LOSS PARA FS	0.0418	0.0373	0.0386	0.0191	0.0126	0.0151	0.0333	0.0580	0.0721	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 49.59 EQUIVALENT ROTOR SPEED = 2087.78 CORRECTED WEIGHT FLOW = 61.36

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	239.09	239.09	239.09	239.09	239.09	239.09	239.09	239.09	239.09	V 0
	V 1	222.78	240.74	240.74	245.98	244.01	241.52	235.94	233.12	211.55	V 1
	VZ 0	239.09	239.09	239.09	239.09	239.07	239.05	239.03	239.02	239.01	VZ 0
	VZ 1	222.78	240.74	240.74	245.97	243.99	241.48	235.87	233.05	211.47	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.2152	0.2152	0.2152	0.2152	0.2152	0.2152	0.2152	0.2152	0.2152	M 0
	M 1	0.2004	0.2167	0.2167	0.2214	0.2196	0.2174	0.2123	0.2097	0.1902	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1587	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1801	UUBAR
	DFAC	0.068	-0.007	-0.007	-0.029	-0.021	-0.010	0.013	0.025	0.115	DFAC
	EFFP	-5.4500	1.0033	1.0033	0.9994	0.9998	0.9995	0.9989	0.9994	5.4238	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.620	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.610	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	42.045	39.730	37.089	34.210	33.016	31.860	31.908	32.744	34.897	BETA 2
	BETA(PR) 1	52.304	50.525	50.876	51.310	52.930	54.523	56.031	56.620	59.384	BETA(PR) 1
	BETA(PR) 2	19.564	21.491	23.385	24.640	27.488	31.297	33.496	36.858	41.843	BETA(PR) 2
	V 1	233.31	251.78	251.78	257.29	254.75	251.76	246.04	243.20	220.74	V 1
	V 2	324.29	325.14	326.78	340.27	341.00	334.12	329.88	310.12	280.80	V 2
	VZ 1	233.31	251.78	251.78	257.26	254.62	251.47	245.59	242.70	220.24	VZ 1
	VZ 2	240.83	250.06	260.67	281.35	285.76	283.40	279.47	260.26	229.76	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	217.18	207.82	197.07	191.28	185.69	176.13	174.01	167.37	160.26	V-THETA 2
	V(PR) 1	381.5	396.0	399.0	411.6	422.5	433.5	439.8	441.4	432.7	V(PR) 1
	V(PR) 2	255.6	268.7	284.0	309.6	322.3	332.1	335.8	325.9	309.0	V(PR) 2
	VTHETA PR1	-301.9	-305.7	-309.6	-321.2	-337.0	-352.8	-364.5	-368.4	-372.2	VTHETA PR1
	VTHETA PR2	-85.6	-98.5	-112.7	-129.0	-148.7	-172.3	-185.0	-195.1	-205.7	VTHETA PR2
	U 1	301.90	305.71	309.55	321.23	337.03	352.84	364.53	368.36	372.17	U 1
	U 2	302.76	306.27	309.79	320.32	334.37	348.42	358.96	362.48	366.01	U 2
	M 1	0.2099	0.2267	0.2267	0.2317	0.2294	0.2267	0.2215	0.2189	0.1985	M 1
	M 2	0.2893	0.2906	0.2922	0.3046	0.3052	0.2990	0.2949	0.2770	0.2505	M 2
	M(PR) 1	0.3433	0.3566	0.3593	0.3706	0.3804	0.3903	0.3959	0.3973	0.3891	M(PR) 1
	M(PR) 2	0.2280	0.2402	0.2539	0.2772	0.2885	0.2972	0.3002	0.2911	0.2757	M(PR) 2
	TURN(PR)	32.739	29.034	27.492	26.673	25.448	23.241	22.560	19.795	17.584	TURN(PR)
	UUBAR	0.1765	0.1819	0.1239	0.0635	0.0531	0.0459	0.0564	0.1048	0.1263	UUBAR
	LOSS PARA	0.0483	0.0497	0.0338	0.0177	0.0152	0.0132	0.0163	0.0294	0.0333	LOSS PARA
	DFAC	0.4957	0.4758	0.4351	0.3905	0.3779	0.3695	0.3726	0.3932	0.4157	DFAC
	EFFP	0.6790	0.7368	0.7969	0.9154	0.9157	0.9342	0.8685	0.7723	0.7417	EFFP
	EFF	0.6763	0.7347	0.7952	0.9147	0.9150	0.9336	0.8673	0.7705	0.7398	EFF
	INCID	0.462	-1.753	-1.814	-2.746	-3.134	-3.538	-3.412	-3.256	-1.269	INCID
	DEVM	11.814	12.193	12.466	8.937	6.802	6.434	5.944	8.722	12.960	DEVM
	P 1	14.620	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.610	P 1
	P 2	15.510	15.530	15.560	15.640	15.665	15.660	15.660	15.550	15.400	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	531.760	529.950	529.460	528.900	529.160	528.900	529.680	529.680	529.330	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	41.730	39.402	36.797	34.036	32.803	31.582	31.557	32.354	34.454	BETA 2
STATOR-T.E.	BETA 2A	1.430	0.980	0.530	-0.280	-0.410	-0.340	1.240	1.431	1.041	BETA 2A
	V 2	326.34	327.51	329.17	342.11	343.43	337.35	333.87	314.15	284.62	V 2
	V 2A	252.62	265.74	274.25	298.32	317.14	315.37	317.72	295.14	270.39	V 2A
	VZ 2	243.55	253.07	263.59	283.46	288.51	287.05	284.00	264.86	234.20	VZ 2
	VZ 2A	252.54	265.70	274.23	298.28	317.01	315.10	317.24	294.63	269.92	VZ 2A
	V-THETA 2	217.22	207.89	197.16	191.45	185.95	176.47	174.42	167.78	160.69	V-THETA 2
	V-THETA 2A	6.30	4.55	2.54	-1.46	-2.27	-1.87	6.87	7.36	4.90	V-THETA 2A
	M 2	0.2911	0.2927	0.2944	0.3063	0.3074	0.3020	0.2986	0.2806	0.2540	M 2
	M 2A	0.2246	0.2368	0.2446	0.2665	0.2835	0.2820	0.2839	0.2634	0.2411	M 2A
	TURN(PR)	40.299	38.422	36.266	34.310	33.193	31.880	30.256	30.854	33.334	TURN(PR)
	UUBAR	0.1805	0.1338	0.1211	0.0711	0.0050	0.0208	0.0426	0.0604	0.0296	UUBAR
	LOSS PARA	0.0606	0.0454	0.0416	0.0252	0.0019	0.0080	0.0169	0.0242	0.0120	LOSS PARA
	DFAC	0.4429	0.3995	0.3701	0.3284	0.2799	0.2693	0.2482	0.2660	0.2724	DFAC
	EFFP	0.5626	0.6203	0.6165	0.7142	0.9671	0.8412	0.5656	0.5016	0.7049	EFFP
	INCID	-5.241	-6.799	-8.674	-9.639	-9.447	-10.813	-11.810	-11.571	-10.081	INCID
	DEVM	14.461	13.834	13.264	12.054	11.710	12.368	14.749	15.237	15.191	DEVM
	P 2	15.510	15.530	15.560	15.640	15.665	15.660	15.660	15.550	15.400	P 2
	P 2A	15.350	15.410	15.450	15.570	15.660	15.640	15.620	15.500	15.380	P 2A
	T 2	531.760	529.950	529.460	528.900	529.160	528.900	529.680	529.680	529.330	T 2
	T 2A	531.760	529.950	529.460	528.900	529.160	528.900	529.680	529.680	529.330	T 2A
	UUBAR FS	0.1757	0.0989	0.0810	0.0435	0.0408	0.0369	0.0646	0.1285	0.2033	UUBAR FS
	P2 FS	15.540	15.527	15.540	15.620	15.712	15.675	15.672	15.625	15.565	P2 FS
	LOSS PARA FS	0.0589	0.0335	0.0278	0.0154	0.0155	0.0141	0.0256	0.0514	0.0824	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 49.82 EQUIVALENT ROTOR SPEED = 2097.29 CORRECTED WEIGHT FLOW = 56.01

INLET VANE	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	217.45	217.45	217.45	217.45	217.45	217.45	217.45	217.45	217.45	V 0
	V 1	203.64	218.00	223.26	223.67	224.06	221.35	215.40	215.09	188.53	V 1
	VZ 0	217.45	217.45	217.45	217.44	217.43	217.41	217.39	217.38	217.37	VZ 0
	VZ 1	203.64	218.00	223.26	223.67	224.04	221.31	215.34	215.02	188.47	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.1955	0.1955	0.1955	0.1955	0.1955	0.1955	0.1955	0.1955	0.1955	M 0
	M 1	0.1830	0.1960	0.2008	0.2012	0.2015	0.1991	0.1937	0.1934	0.1694	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1656	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2432	UUBAR
	DFAC	0.063	-0.003	-0.027	-0.029	-0.030	-0.018	0.009	0.011	0.133	DFAC
	EFFP	-3.0629	0.9860	0.9995	0.9996	1.0000	1.0018	0.9991	0.9994	30.0993	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.630	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.600	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	44.697	43.979	42.113	38.355	36.693	35.993	36.186	37.058	39.352	BETA 2
	BETA(PR) 1	54.894	53.420	53.107	54.072	55.383	56.976	58.530	58.828	62.309	BETA(PR) 1
	BETA(PR) 2	18.847	21.718	24.809	27.408	29.995	33.269	35.009	36.815	43.161	BETA(PR) 2
	V 1	213.20	227.91	233.42	233.86	233.83	230.66	224.54	224.32	196.66	V 1
	V 2	321.50	313.63	307.05	313.32	316.94	313.29	312.58	304.07	271.07	V 2
	VZ 1	213.19	227.91	233.42	233.83	233.71	230.39	224.14	223.86	196.21	VZ 1
	VZ 2	228.54	225.68	227.77	245.66	254.00	253.17	251.82	242.17	209.17	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	226.13	217.78	205.91	194.40	189.27	183.89	184.21	182.87	171.52	V-THETA 2
	V(PR) 1	370.7	382.4	388.8	398.5	411.5	422.9	429.5	432.7	422.4	V(PR) 1
	V(PR) 2	241.5	242.9	250.9	276.8	293.5	303.2	308.0	303.1	287.3	V(PR) 2
	VTHETA PR1	-303.3	-307.1	-311.0	-322.7	-338.6	-354.4	-366.2	-370.0	-373.9	VTHETA PR1
	VTHETA PR2	-78.0	-89.9	-105.3	-127.4	-146.6	-166.1	-176.4	-181.3	-196.2	VTHETA PR2
	U 1	303.28	307.10	310.96	322.70	338.57	354.45	366.19	370.04	373.86	U 1
	U 2	304.14	307.67	311.20	321.78	335.89	350.00	360.60	364.13	367.67	U 2
	M 1	0.1917	0.2050	0.2100	0.2104	0.2104	0.2075	0.2020	0.2017	0.1767	M 1
	M 2	0.2863	0.2796	0.2738	0.2795	0.2828	0.2795	0.2787	0.2708	0.2411	M 2
	M(PR) 1	0.3333	0.3440	0.3498	0.3586	0.3702	0.3804	0.3863	0.3892	0.3796	M(PR) 1
	M(PR) 2	0.2151	0.2165	0.2237	0.2469	0.2618	0.2705	0.2746	0.2700	0.2555	M(PR) 2
	TURN(PR)	36.046	31.702	28.298	26.666	25.396	23.725	23.550	22.048	19.194	TURN(PR)
	UUBAR	0.1279	0.1837	0.1508	0.0911	0.0772	0.0725	0.0869	0.1098	0.1185	UUBAR
	LOSS PARA	0.0351	0.0502	0.0407	0.0249	0.0215	0.0204	0.0247	0.0308	0.0306	LOSS PARA
	DFAC	0.5260	0.5322	0.5121	0.4553	0.4342	0.4283	0.4304	0.4463	0.4623	DFAC
	EFFP	0.6881	0.6757	0.6927	0.7492	0.7645	0.7841	0.7499	0.6933	0.6511	EFFP
	EFF	0.6851	0.6729	0.6901	0.7470	0.7624	0.7821	0.7475	0.6906	0.6481	EFF
	INCID	3.053	1.142	0.417	0.015	-0.680	-1.084	-0.910	-1.046	1.659	INCID
	DEVM	11.098	12.420	13.890	11.705	9.308	8.405	7.454	8.678	14.277	DEVM
	P 1	14.630	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.600	P 1
	P 2	15.640	15.600	15.585	15.630	15.660	15.675	15.685	15.650	15.485	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	533.280	531.990	531.450	531.060	531.190	531.060	531.760	532.350	532.270	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	44.352	43.595	41.768	38.151	36.454	35.669	35.775	36.608	38.836	BETA 2
STATOR-T.E.	BETA 2A	1.010	1.230	1.260	0.270	-0.110	0.080	1.951	2.231	1.651	BETA 2A
	V 2	323.53	315.93	309.27	315.02	319.16	316.32	316.35	307.96	274.74	V 2
	V 2A	234.64	248.94	248.65	264.63	278.31	285.59	290.05	271.71	251.66	V 2A
	VZ 2	231.34	228.80	230.67	247.69	256.59	256.70	256.25	246.78	213.61	VZ 2
	VZ 2A	234.60	248.89	248.59	264.59	278.19	285.35	289.52	271.12	251.16	VZ 2A
	V-THETA 2	226.17	217.85	206.01	194.58	189.54	184.25	184.64	183.33	171.97	V-THETA 2
	V-THETA 2A	4.14	5.34	5.47	1.25	-0.53	0.40	9.86	10.56	7.24	V-THETA 2A
	M 2	0.2882	0.2816	0.2758	0.2811	0.2848	0.2822	0.2821	0.2743	0.2444	M 2
	M 2A	0.2082	0.2213	0.2211	0.2356	0.2479	0.2545	0.2583	0.2416	0.2236	M 2A
	TURN(PR)	43.342	42.365	40.507	37.875	36.543	35.545	33.760	34.305	37.103	TURN(PR)
	UUBAR	0.2054	0.1076	0.0686	0.0719	0.0058	0.0059	0.0296	0.1003	0.0079	UUBAR
	LOSS PARA	0.0689	0.0365	0.0235	0.0255	0.0022	0.0023	0.0117	0.0401	0.0032	LOSS PARA
	DFAC	0.5052	0.4405	0.4189	0.3782	0.3490	0.3217	0.3032	0.3435	0.3277	DFAC
	EFFP	0.5782	0.7243	0.8118	0.7633	0.9768	0.9690	0.8203	0.5605	0.9522	EFFP
	INCID	-2.619	-2.606	-3.703	-5.524	-5.797	-6.728	-7.595	-7.321	-5.703	INCID
	DEVM	14.041	14.084	13.994	12.604	12.010	12.788	15.458	16.036	15.800	DEVM
	P 2	15.640	15.600	15.585	15.630	15.660	15.675	15.685	15.650	15.485	P 2
	P 2A	15.460	15.510	15.530	15.570	15.655	15.670	15.660	15.570	15.480	P 2A
	T 2	533.280	531.990	531.450	531.060	531.190	531.060	531.760	532.350	532.270	T 2
	T 2A	533.280	531.990	531.450	531.060	531.190	531.060	531.760	532.350	532.270	T 2A
	UUBAR FS	0.1202	0.1099	0.1000	0.0373	0.0370	0.0482	0.0654	0.1228	0.1681	UUBAR FS
	P2 FS	15.570	15.610	15.617	15.612	15.707	15.712	15.717	15.675	15.610	P2 FS
	LOSS PARA FS	0.0403	0.0372	0.0342	0.0132	0.0140	0.0187	0.0254	0.0490	0.0680	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 49.78 EQUIVALENT ROTOR SPEED = 2095.55 CORRECTED WEIGHT FLOW = 48.90

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	188.98	188.98	188.98	188.98	188.98	188.98	188.98	188.98	188.98	V 0
	V 1	171.86	187.65	192.40	193.65	194.28	191.80	192.45	184.68	160.41	V 1
	VZ 0	188.98	188.98	188.98	188.98	188.96	188.95	188.93	188.92	188.91	VZ 0
	VZ 1	171.86	187.65	192.40	193.65	194.26	191.77	192.40	184.62	160.36	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.1698	0.1698	0.1698	0.1698	0.1698	0.1698	0.1698	0.1698	0.1698	M 0
	M 1	0.1543	0.1686	0.1729	0.1740	0.1746	0.1723	0.1729	0.1659	0.1440	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.1982	0.0547	0.0	0.0	0.0	0.0	0.0	0.0683	0.2665	UUBAR
	DFAC	0.091	0.007	-0.018	-0.025	-0.028	-0.015	-0.018	0.023	0.151	DFAC
	EFFP	-7.4995	-0.3495	0.9977	0.9994	1.0008	1.0010	0.9971	-2.0092	17.9653	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.636	14.678	14.694	14.694	14.694	14.694	14.694	14.674	14.616	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	48.896	48.761	47.942	44.449	42.105	41.161	41.678	44.302	47.465	BETA 2
	BETA(PR) 1	59.312	57.420	57.093	57.888	59.088	60.602	61.315	62.543	65.927	BETA(PR) 1
	BETA(PR) 2	18.392	23.157	25.182	28.242	31.412	34.698	36.375	39.293	43.258	BETA(PR) 2
	V 1	179.84	196.09	201.06	202.37	202.66	199.78	200.55	192.52	167.27	V 1
	V 2	312.61	297.33	294.05	296.71	298.84	296.82	296.98	283.80	268.00	V 2
	VZ 1	179.84	196.08	201.06	202.35	202.56	199.54	200.19	192.12	166.89	VZ 1
	VZ 2	205.52	196.00	196.98	211.79	221.61	223.23	221.47	202.78	180.89	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	235.56	223.58	218.32	207.76	200.27	195.15	197.17	197.90	197.16	V-THETA 2
	V(PR) 1	352.4	364.1	370.1	380.7	394.3	406.6	417.2	416.9	409.3	V(PR) 1
	V(PR) 2	216.6	213.2	217.7	240.5	259.8	271.9	275.6	262.5	248.8	V(PR) 2
	VTHETA PR1	-303.0	-306.8	-310.7	-322.4	-338.3	-354.2	-365.9	-369.7	-373.6	VTHETA PR1
	VTHETA PR2	-68.3	-83.8	-92.6	-113.8	-135.3	-154.6	-163.1	-165.9	-170.2	VTHETA PR2
	U 1	303.03	306.85	310.71	322.43	338.29	354.16	365.88	369.73	373.55	U 1
	U 2	303.89	307.41	310.94	321.52	335.61	349.71	360.30	363.83	367.37	U 2
	M 1	0.1615	0.1762	0.1807	0.1819	0.1821	0.1795	0.1802	0.1730	0.1502	M 1
	M 2	0.2787	0.2652	0.2624	0.2649	0.2668	0.2649	0.2648	0.2528	0.2385	M 2
	M(PR) 1	0.3165	0.3272	0.3326	0.3421	0.3544	0.3654	0.3750	0.3745	0.3674	M(PR) 1
	M(PR) 2	0.1931	0.1901	0.1942	0.2147	0.2319	0.2426	0.2457	0.2338	0.2214	M(PR) 2
	TURN(PR)	40.920	34.263	31.912	29.650	27.685	25.924	24.973	23.290	22.722	TURN(PR)
	UUBAR	0.1085	0.1647	0.1724	0.1239	0.1075	0.1056	0.1216	0.1540	0.1606	UUBAR
	LOSS PARA	0.0299	0.0448	0.0464	0.0336	0.0295	0.0292	0.0339	0.0417	0.0413	LOSS PARA
	DFAC	0.5797	0.9991	0.5872	0.5360	0.5039	0.4917	0.5021	0.5351	0.5609	DFAC
	EFFP	0.8404	0.8125	0.8335	0.8911	0.8899	0.8915	0.8283	0.7853	0.7716	EFFP
	EFF	0.8388	0.8108	0.8320	0.8901	0.8888	0.8904	0.8266	0.7833	0.7695	EFF
	INCID	7.470	5.142	4.403	3.832	3.025	2.543	1.878	2.673	5.282	INCID
	DEVM	10.642	13.859	14.263	12.538	10.724	9.833	8.819	11.155	14.374	DEVM
	P 1	14.636	14.678	14.694	14.694	14.694	14.694	14.694	14.674	14.616	P 1
	P 2	15.731	15.656	15.644	15.674	15.692	15.704	15.721	15.669	15.613	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	531.580	530.600	529.960	529.550	529.760	529.870	530.930	531.230	531.530	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	48.491	48.319	47.522	44.205	41.818	40.782	41.190	43.732	46.787	BETA 2
STATOR-T.E.	BETA 2A	1.740	1.740	1.740	1.740	1.460	1.220	2.161	3.111	3.162	BETA 2A
	V 2	314.61	299.46	296.17	298.28	300.92	299.63	300.51	287.40	271.62	V 2
	V 2A	214.31	227.17	227.02	234.96	257.07	256.15	250.58	237.64	219.11	V 2A
	VZ 2	208.50	199.14	200.00	213.80	224.17	226.67	225.83	207.37	185.72	VZ 2
	VZ 2A	214.22	227.06	226.91	234.83	256.88	255.87	250.09	236.95	218.43	VZ 2A
	V-THETA 2	235.60	223.66	218.43	207.95	200.56	195.53	197.63	198.39	197.68	V-THETA 2
	V-THETA 2A	6.51	6.90	6.89	7.13	6.55	5.45	9.44	12.88	12.07	V-THETA 2A
	M 2	0.2806	0.2671	0.2643	0.2663	0.2686	0.2674	0.2680	0.2560	0.2418	M 2
	M 2A	0.1903	0.2020	0.2020	0.2092	0.2290	0.2282	0.2230	0.2113	0.1946	M 2A
	TURN(PR)	46.751	46.579	45.781	42.459	40.337	39.517	38.963	40.547	43.543	TURN(PR)
	UUBAR	0.2127	0.1003	0.0836	0.0836	-0.0039	0.0092	0.0784	0.0888	0.1222	UUBAR
	LOSS PARA	0.0716	0.0341	0.0288	0.0297	-0.0014	0.0035	0.0311	0.0355	0.0492	LOSS PARA
	DFAC	0.5640	0.4880	0.4796	0.4520	0.3852	0.3905	0.4157	0.4329	0.4709	DFAC
	EFFP	0.6129	0.7699	0.8026	0.7856	1.0140	0.9671	0.7498	0.7263	0.6579	EFFP
	INCID	1.520	2.118	2.051	0.530	-0.433	-1.617	-2.183	-0.200	2.246	INCID
	DEVM	14.771	14.594	14.474	14.074	13.580	13.927	15.668	16.915	17.309	DEVM
	P 2	15.731	15.656	15.644	15.674	15.692	15.704	15.721	15.669	15.613	P 2
	P 2A	15.553	15.580	15.582	15.611	15.695	15.697	15.661	15.607	15.537	P 2A
	T 2	531.580	530.600	529.960	529.550	529.760	529.870	530.930	531.230	531.530	T 2
	T 2A	531.580	530.600	529.960	529.550	529.760	529.870	530.930	531.230	531.530	T 2A
	UUBAR FS	0.1119	0.1318	0.1180	0.0734	0.0468	0.0573	0.0736	0.0735	0.1416	UUBAR FS
	P2 FS	15.635	15.680	15.677	15.662	15.735	15.745	15.722	15.657	15.640	P2 FS
	LOSS PARA FS	0.0376	0.0448	0.0406	0.0260	0.0167	0.0217	0.0291	0.0296	0.0570	LOSS PARA FS

Table A-3. Blade Element Performance (Continued)

Stage A Rotor A - Stator A

CALCULATIONS USING TRANSLATED VALUES

PERCENT EQUIVALENT ROTOR SPEED = 49.81 EQUIVALENT ROTOR SPEED = 2097.13 CORRECTED WEIGHT FLOW = 43.74

INLET	PCT SPAN	96.61	91.52	86.39	70.81	49.79	28.83	13.41	8.35	3.34	PCT SPAN
	DIA	33.138	33.570	34.006	35.328	37.113	38.892	40.202	40.631	41.056	DIA
	BETA 0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 0
	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
	V 0	168.53	168.53	168.53	168.53	168.53	168.53	168.53	168.53	168.53	V 0
	V 1	154.49	171.52	171.19	171.84	172.13	168.66	162.26	156.00	136.41	V 1
	VZ 0	168.53	168.53	168.53	168.53	168.52	168.50	168.48	168.48	168.47	VZ 0
	VZ 1	154.49	171.52	171.19	171.84	172.11	168.63	162.21	155.95	136.37	VZ 1
	V-THETA 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 0
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	M 0	0.1513	0.1513	0.1513	0.1513	0.1513	0.1513	0.1513	0.1513	0.1513	M 0
	M 1	0.1386	0.1540	0.1537	0.1543	0.1546	0.1514	0.1457	0.1400	0.1224	M 1
	TURN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	TURN
	UUBAR	0.2059	0.0	0.0	0.0	0.0	0.0	0.0	0.0729	0.2875	UUBAR
	DFAC	0.083	-0.018	-0.016	-0.020	-0.021	-0.001	0.037	0.074	0.191	DFAC
	EFFP	-3.5988	0.9985	0.9983	0.9950	0.9961	0.8750	1.0003	2.0164	5.7922	EFFP
	INCID	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	INCID
	DEVM	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	DEVM
	P 0	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	14.694	P 0
	P 1	14.646	14.694	14.694	14.694	14.694	14.694	14.694	14.677	14.627	P 1
	T 0	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 0
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
ROTOR A	PCT SPAN	95.00	90.01	85.00	70.01	50.02	30.02	15.01	10.00	4.98	PCT SPAN
	DIA	33.235	33.621	34.006	35.163	36.705	38.247	39.405	39.791	40.178	DIA
ROTOR -L.E.	BETA 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	BETA 1
ROTOR -T.E.	BETA 2	52.399	52.431	52.338	50.268	47.084	46.790	49.671	52.346	54.980	BETA 2
	BETA(PR) 1	61.945	59.735	60.095	60.913	62.079	63.667	65.261	66.326	69.217	BETA(PR) 1
	BETA(PR) 2	16.227	22.145	26.579	26.108	31.356	34.622	40.291	40.659	41.176	BETA(PR) 2
	V 1	161.62	179.19	178.84	179.52	179.50	175.62	169.02	162.56	142.21	V 1
	V 2	313.57	295.60	283.58	297.32	292.87	291.52	275.36	276.92	278.65	V 2
	VZ 1	161.62	179.19	178.84	179.50	179.41	175.42	168.72	162.23	141.88	VZ 1
	VZ 2	191.33	180.23	173.26	190.03	199.34	199.42	178.00	168.97	159.72	VZ 2
	V-THETA 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	V-THETA 1
	V-THETA 2	248.43	234.30	224.49	228.63	214.40	212.29	209.67	218.98	227.94	V-THETA 2
	V(PR) 1	343.6	355.5	358.7	369.2	383.2	395.5	403.3	404.1	400.0	V(PR) 1
	V(PR) 2	199.3	194.6	193.7	211.7	233.6	242.6	233.7	223.1	212.6	V(PR) 2
	VTHETA PR1	-303.3	-307.1	-310.9	-322.7	-338.5	-354.4	-366.2	-370.0	-373.8	VTHETA PR1
	VTHETA PR2	-55.7	-73.3	-86.7	-93.1	-121.5	-137.7	-150.9	-145.1	-139.7	VTHETA PR2
	U 1	303.25	307.08	310.94	322.67	338.54	354.42	366.16	370.01	373.84	U 1
	U 2	304.12	307.65	311.17	321.76	335.86	349.98	360.57	364.10	367.64	U 2
	M 1	0.1451	0.1609	0.1606	0.1612	0.1612	0.1577	0.1518	0.1459	0.1276	M 1
	M 2	0.2792	0.2632	0.2525	0.2651	0.2609	0.2597	0.2448	0.2461	0.2475	M 2
	M(PR) 1	0.3085	0.3193	0.3221	0.3316	0.3441	0.3552	0.3621	0.3628	0.3589	M(PR) 1
	M(PR) 2	0.1774	0.1733	0.1725	0.1887	0.2081	0.2162	0.2078	0.1983	0.1889	M(PR) 2
	TURN(PR)	45.717	37.590	33.516	34.808	30.733	29.068	25.009	25.712	28.097	TURN(PR)
	UUBAR	0.1251	0.1883	0.1977	0.1791	0.1484	0.1544	0.2146	0.2402	0.2387	UUBAR
	LOSS PARA	0.0349	0.0512	0.0525	0.0495	0.0408	0.0427	0.0567	0.0638	0.0635	LOSS PARA
	DFAC	0.6303	0.6464	0.6459	0.6170	0.5697	0.5658	0.5992	0.6360	0.6681	DFAC
	EFFP	0.7820	0.7494	0.7401	0.8385	0.8061	0.8263	0.6823	0.6913	0.7125	EFFP
	EFF	0.7796	0.7470	0.7378	0.8369	0.8042	0.8246	0.6793	0.6883	0.7095	EFF
	INCID	10.103	7.457	7.405	6.856	6.017	5.611	5.827	6.460	8.577	INCID
	DEVM	8.478	12.847	15.660	10.405	10.668	9.757	12.733	12.520	12.293	DEVM
	P 1	14.646	14.694	14.694	14.694	14.694	14.694	14.694	14.677	14.627	P 1
	P 2	15.798	15.713	15.661	15.735	15.731	15.751	15.682	15.698	15.723	P 2
	T 1	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	518.700	T 1
	T 2	533.250	532.130	531.620	530.940	531.390	531.310	533.030	533.320	533.950	T 2
STATOR A	PCT SPAN	95.05	90.12	85.15	70.15	50.00	29.85	14.84	9.88	4.94	PCT SPAN
	DIA	33.203	33.556	33.910	34.981	36.420	37.859	38.930	39.285	39.637	DIA
STATOR-L.E.	BETA 2	51.941	51.929	51.851	49.970	46.746	46.332	49.039	51.599	54.098	BETA 2
STATOR-T.E.	BETA 2A	1.885	1.880	1.875	1.925	2.980	3.021	3.351	3.922	4.152	BETA 2A
	V 2	315.58	297.71	285.60	298.89	294.90	294.27	278.59	280.41	282.43	V 2
	V 2A	207.46	213.37	215.44	217.70	241.94	237.64	222.14	216.40	207.97	V 2A
	VZ 2	194.54	183.58	176.42	192.23	202.00	203.03	182.44	174.00	165.45	VZ 2
	VZ 2A	207.34	213.26	215.32	217.55	241.51	237.11	221.48	215.59	207.10	VZ 2A
	V-THETA 2	248.48	234.37	224.60	228.84	214.70	212.70	210.16	219.52	228.54	V-THETA 2
	V-THETA 2A	6.82	7.00	7.05	7.31	12.57	12.51	12.97	14.78	15.03	V-THETA 2A
	M 2	0.2810	0.2651	0.2543	0.2665	0.2628	0.2622	0.2477	0.2492	0.2509	M 2
	M 2A	0.1839	0.1894	0.1913	0.1935	0.2151	0.2113	0.1971	0.1919	0.1842	M 2A
	TURN(PR)	50.056	50.049	49.975	48.039	43.744	43.267	45.623	47.607	49.869	TURN(PR)
	UUBAR	0.2218	0.1174	0.0435	0.1227	0.0013	0.0612	0.0519	0.1114	0.1855	UUBAR
	LOSS PARA	0.0746	0.0399	0.0150	0.0436	0.0005	0.0235	0.0205	0.0445	0.0747	LOSS PARA
	DFAC	0.6005	0.5634	0.5081	0.5356	0.4343	0.4556	0.4847	0.5221	0.5707	DFAC
	EFFP	0.6188	0.7646	0.9016	0.7452	0.9960	0.8289	0.8610	0.7308	0.6032	EFFP
	INCID	4.970	5.728	6.380	6.294	4.494	3.932	5.666	7.669	9.561	INCID
	DEVM	14.916	14.734	14.609	14.259	15.099	15.726	16.857	17.724	18.298	DEVM
	P 2	15.798	15.713	15.661	15.735	15.731	15.751	15.682	15.698	15.723	P 2
	P 2A	15.611	15.625	15.631	15.642	15.730	15.706	15.648	15.624	15.598	P 2A
	T 2	533.250	532.130	531.620	530.940	531.390	531.310	533.030	533.320	533.950	T 2
	T 2A	533.250	532.130	531.620	530.940	531.390	531.310	533.030	533.320	533.950	T 2A
	UUBAR FS	0.1313	0.1267	0.1337	0.0691	0.0694	0.0823	0.1041	0.1331	0.1665	UUBAR FS
	P2 FS	15.712	15.717	15.735	15.692	15.784	15.762	15.722	15.710	15.710	P2 FS
	LOSS PARA FS	0.0441	0.0430	0.0461	0.0245	0.0266	0.0316	0.0411	0.0531	0.0670	LOSS PARA F

APPENDIX B

STATOR A STATIC PRESSURE COEFFICIENTS

$$C_p = \frac{p_{surface} - p_{2\,fs}}{(\rho V^2/2)_{2\,fs}}$$

Chord = 2.35 inches

Percent Design Equivalent Rotor Speed	Corrected Weight Flow (lb/sec)		C_p Percent Chord 12	23	34	45	56	67	78	89
100	121.01	SS*	-0.39	-0.74	-0.91	-0.85	-0.74	-0.63	-0.38	-0.08
100		PS*	0.14	0.23	0.25	0.29	0.32	0.32	0.30	0.24
100	92.7	SS	-0.50	-0.44	-0.34	-0.21	-0.07	0.06	0.15	0.19
100		PS	0.60	0.58	0.57	0.57	0.57	0.55	0.52	0.46
100	89.38	SS	-0.51	-0.42	-0.30	-0.14	0.01	0.12	0.17	0.19
100		PS	0.64	0.62	0.59	0.59	0.60	0.58	0.54	0.47
100	97.00	SS	-0.49	-0.47	-0.39	-0.27	-0.14	-0.01	0.13	0.17
100		PS	0.57	0.56	0.54	0.55	0.54	0.52	0.51	0.44
100	102.81	SS	-0.50	-0.52	-0.49	-0.38	-0.28	-0.16	0.03	0.14
100		PS	0.47	0.48	0.46	0.48	0.49	0.48	0.46	0.40
100	111.27	SS	-0.45	-0.59	-0.61	-0.53	-0.44	-0.34	-0.14	0.08
100		PS	0.40	0.42	0.41	0.43	0.45	0.44	0.43	0.38
90	116.21	SS	-0.32	-0.80	-1.15	-1.23	-1.17	-1.03	-0.70	-0.30
90		PS	-0.42	-0.04	0.02	0.08	0.12	0.13	0.12	0.08
90	80.07	SS	-0.50	-0.42	-0.30	-0.17	-0.04	0.08	0.15	0.16
90		PS	0.56	0.55	0.52	0.53	0.51	0.50	0.47	0.42
90	85.01	SS	-0.47	-0.45	-0.36	-0.24	-0.13	-0.02	0.12	0.18
90		PS	0.55	0.54	0.52	0.53	0.53	0.52	0.49	0.43
90	91.00	SS	-0.48	-0.51	-0.47	-0.37	-0.27	-0.16	0.01	0.15
90		PS	0.50	0.50	0.48	0.49	0.50	0.49	0.46	0.41
90	96.10	SS	-0.47	-0.58	-0.58	-0.49	-0.40	-0.30	-0.10	0.10
90		PS	0.43	0.45	0.44	0.45	0.48	0.48	0.45	0.40
90	105.46	SS	-0.39	-0.61	-0.70	-0.64	-0.56	-0.47	-0.27	-0.02
90		PS	0.27	0.32	0.33	0.36	0.38	0.38	0.36	0.31
70	98.05	SS	-0.32	-0.79	-1.11	-1.18	-1.14	-1.05	-0.77	-0.39
70		PS	-0.45	-0.05	0.04	0.09	0.12	0.13	0.12	0.09
70	59.63	SS	-0.49	-0.40	-0.31	-0.18	-0.06	0.06	0.14	0.17
70		PS	0.61	0.58	0.55	0.54	0.54	0.52	0.48	0.42

*SS - Vane Suction Surface
PS - Vane Pressure Surface

Percent Design Equivalent Rotor Speed	Corrected Weight Flow (lb/sec)		C_p Percent Chord 12	23	34	45	56	67	78	89
70	68.12	SS	-0.48	-0.50	-0.45	-0.35	-0.25	-0.14	0.03	0.15
70		PS	0.51	0.49	0.48	0.48	0.50	0.48	0.45	0.40
70	75.29	SS	-0.45	-0.56	-0.58	-0.50	-0.42	-0.33	-0.15	0.07
70		PS	0.41	0.43	0.43	0.44	0.46	0.46	0.43	0.39
70	82.85	SS	-0.40	-0.62	-0.70	-0.66	-0.59	-0.51	-0.32	-0.06
70		PS	0.28	0.33	0.33	0.35	0.38	0.37	0.36	0.32
70	89.31	SS	-0.35	-0.65	-0.80	-0.80	-0.73	-0.66	-0.45	-0.16
70		PS	0.17	0.25	0.25	0.29	0.31	0.31	0.30	0.26
50	72.91	SS	-0.28	-0.70	-0.97	-1.03	-1.02	-0.95	-0.72	-0.41
50		PS	-0.32	0.03	0.11	0.14	0.17	0.18	0.17	0.14
50	43.74	SS	-0.48	-0.41	-0.33	-0.21	-0.08	0.05	0.14	0.20
50		PS	0.60	0.56	0.54	0.55	0.54	0.53	0.49	0.43
50	48.90	SS	-0.49	-0.51	-0.50	-0.41	-0.30	-0.20	-0.03	0.14
50		PS	0.52	0.51	0.49	0.51	0.50	0.49	0.46	0.42
50	56.01	SS	-0.43	-0.57	-0.62	-0.57	-0.51	-0.42	-0.24	-0.01
50		PS	0.38	0.40	0.39	0.42	0.44	0.43	0.42	0.38
50	61.36	SS	-0.35	-0.60	-0.72	-0.71	-0.65	-0.57	-0.39	-0.14
50		PS	0.24	0.29	0.30	0.34	0.35	0.36	0.34	0.31
50	66.35	SS	-0.35	-0.68	-0.87	-0.87	-0.83	-0.76	-0.56	-0.27
50		PS	0.10	0.20	0.22	0.25	0.28	0.28	0.28	0.23
110	125.55	SS	-0.30	-0.81	-1.30			-1.27	-0.80	-0.47
110		PS	-0.69	-0.29	-0.17	-0.11	-0.05	-0.03	-0.04	-0.07
110	103.91	SS	-0.50	-0.44	-0.34	-0.19	-0.08	0.05	0.16	0.20
110		PS	0.62	0.61	0.59	0.58	0.58	0.56	0.54	0.48
110	108.33	SS	-0.51	-0.48	-0.41	-0.27	-0.16	-0.02	0.12	0.17
110		PS	0.54	0.53	0.51	0.52	0.53	0.52	0.49	0.43
110	113.37	SS	-0.50	-0.53	-0.47	-0.34	-0.24	-0.11	0.07	0.14
110		PS	0.51	0.50	0.49	0.50	0.50	0.50	0.47	0.43
110	118.16	SS	-0.51	-0.60	-0.59	-0.46	-0.35	-0.23	-0.04	0.11
110		PS	0.43	0.45	0.43	0.45	0.47	0.47	0.45	0.40
110	122.26	SS	-0.44	-0.61	-0.66	-0.57	-0.46	-0.36	-0.16	0.06
110		PS	0.33	0.36	0.36	0.39	0.41	0.40	0.38	0.34

APPENDIX C
DEFINITION OF SYMBOLS AND PERFORMANCE VARIABLES

A_A	Flowpath annular area, ft^2
a_o	Inlet relative stagnation velocity of sound, ft/sec
c	Chord length, inches
C_p	Static pressure coefficient
d	Diameter, inches
D	Diffusion factor
g_c	Gravitational acceleration, 32.174 lb_m-ft/lb_f-sec^2
i_m	Incidence angle, degree from axial direction
M	Mach number
N	Rotor speed, rpm
P	Total pressure, psia
PR	Rotor tip static pressure ratio
p	Static pressure, psia
R	Gas constant for air, 53.34 ft-lb_f/lb_m-°R
r	Radius, inches
S	Blade passage gap (leading edge), inches
t	Blade maximum thickness, inches
T	Total temperature, °R
T_s	Static temperature, °R
U	Rotor speed, ft/sec
V	Velocity, ft/sec
W	Actual flowrate, lb_m/sec
β	Air angle, degree from axial direction
γ	Ratio of specific heats
$\gamma°$	Blade-chord angle, degree from axial direction

δ	Ratio of total pressure to NASA standard sea level pressure of 14.694 psia
δ°	Deviation angle, degree
ϵ	Angle between tangent to streamline projected on meridional plane and axial direction, degree
η_{ad}	Adiabatic efficiency
η_p	Polytropic efficiency
θ	Ratio of total temperature to NASA standard sea level temperature of 518.7°R
κ	Blade metal angle, degree from axial direction
ρ	Density, $lb_f sec^2/ft^4$
σ	Solidity, c/S
ϕ	Blade camber angle, $\kappa_1 - \kappa_2$, degree
$\bar{\omega}$	Loss coefficient
$\bar{\omega}\cos\beta/2\sigma$	Loss parameter

Subscripts

0	Compressor inlet (bellmouth)
1	Rotor inlet
2	Rotor exit
2A	Stator Exit
f	Force
fs	Freestream value
id	Isentropic condition
L	Local
m	Mean or mass
le	Leading edge
t	Translation station value
te	Trailing edge
s	Static condition

z Axial component

θ Tangential component

Superscripts:

' Related to rotor blade

- Mass average value

* Choke flow condition

Definition of Overall Performance Variables

Pressure Ratio:

$$\text{Rotor: } \frac{\bar{P}_2}{\bar{P}_1} \qquad \text{Stage: } \frac{\bar{P}_{2A}}{\bar{P}_1}$$

Corrected Flow:

$$\frac{W\sqrt{\theta}}{\delta}$$

Equivalent Rotor Speed:

$$N/\sqrt{\theta}$$

Adiabatic Efficiency:

$$\text{Rotor: } \eta_{ad} = \frac{(\bar{P}_2/\bar{P}_1)^{\frac{\gamma-1}{\gamma}} - 1}{\left(\bar{T}_{2A}/518.7\right) - 1} \qquad \text{Stage: } \eta_{ad} = \frac{(\bar{P}_{2A}/\bar{P}_1)^{\frac{\gamma-1}{\gamma}} - 1}{\left(\bar{T}_{2A}/518.7\right) - 1}$$

Polytropic Efficiency:

$$\text{Rotor: } \eta_p = \frac{\frac{\gamma-1}{\gamma} \ln (\bar{P}_2/\bar{P}_1)}{\ln (\bar{T}_2/518.7)} \qquad \text{Stator: } \eta_p = \frac{\frac{\gamma-1}{\gamma} \ln (\bar{p}_{2A}/\bar{p}_2)}{\ln(\bar{T}_{s_{2A}}/\bar{T}_{s_2})}$$

Definition of Blade Element Performance Variables

Incidence Angle:

$$\text{Rotor: } i_m = \beta'_1 - \kappa_{1e} \qquad \text{Stator: } i_m = \beta_2 - \kappa_{1e}$$

Diffusion Factor:

$$\text{Rotor: } D = 1 - \frac{V'_2}{V'_1} + \frac{d_2 V_{\theta 2} - d_1 V_{\theta 1}}{(d_1 + d_2)\, V'_1 \sigma}$$

$$\text{Stator: } D = 1 - \frac{V_{2A}}{V_2} - \frac{d_2 V_{\theta 2} - d_{2A} V_{\theta 2A}}{(d_2 + d_{2A})\, V_2 \sigma}$$

Deviation Angle:

$$\text{Rotor: } \delta^o = \beta'_2 - \kappa_{te} \qquad \text{Stator: } \delta^o = \beta_{2A} - \kappa_{te}$$

Loss Coefficient:

$$\text{Rotor: } \bar{\omega}' = \frac{P'_{2id} - P'_2}{P'_1 - p_1}$$

where: $$(P'_2)_{id} = P'_1 \left\{ 1 + \frac{\gamma - 1}{2} \left(\frac{U_2^2}{a_{o_1}^2} \right) \left[1 - \left(\frac{d_1}{d_2} \right)^2 \right] \right\}^{\frac{\gamma}{\gamma - 1}}$$

P' is found from $p/P' = \left[1 + \frac{\gamma - 1}{2} M'^2 \right]^{\frac{\gamma}{1 - \gamma}}$

and M' is calculated using trigonometric functions and the measurements of U, β, P, and p.

$$\text{Stator: } \bar{\omega} = \frac{P_2 - \bar{P}_{2A}}{P_2 - p_2} \qquad \bar{\omega}_{fs} = \frac{P_{2A_{fs}} - \bar{P}_{2A}}{P_{2A_{fs}} - p_2}$$

Where: $P_{2A_{fs}}$ = stator exit average freestream total pressure from wake rakes

P_2 = stator inlet total pressure from 20-deg wedge probes

Rotor Tip Static Pressure Ratio

$$PR = \frac{p_L}{\text{p at - 10\% axial chord}}$$

Stator Static Pressure Coefficient:

$$C_p = \frac{p_{surface} - p_{2_{fs}}}{(\rho V^2/2)_{2_{fs}}}$$

APPENDIX D
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