

N O T I C E

THIS DOCUMENT HAS BEEN REPRODUCED FROM
MICROFICHE. ALTHOUGH IT IS RECOGNIZED THAT
CERTAIN PORTIONS ARE ILLEGIBLE, IT IS BEING RELEASED
IN THE INTEREST OF MAKING AVAILABLE AS MUCH
INFORMATION AS POSSIBLE

(NASA-TM-81997) BLACKBODY CURVES FOR THE
IUE SPECTRAL RANGE LAMBDA 1150 TO LAMDA 3200
FROM 6,000 TO 200,000 K (NASA) 44 p
HC A33/MF A01

N80-32306

CSCL 03A

Unclass

63/89 32994



Technical Memorandum 81997

BLACKBODY CURVES FOR
THE IUE SPECTRAL RANGE
 λ 1150 TO λ 3200 FROM
6,000 TO 200,000 K

W. A. FEIBELMAN

AUGUST 1980

National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland 20771



BLACKBODY CURVES FOR THE IUE SPECTRAL RANGE

λ 1150 to λ 3200 from 6,000 to 200,000K

W. A. Feibelman

**Laboratory for Astronomy
and Solar Physics**

**NASA-Goddard Space Flight Center
Greenbelt, Maryland 20771**

Blackbody Curves for the IUE Spectral Range $\lambda 1150$ to $\lambda 3200$ from 6000K to 200,000K.

Quite a number of IUE users have had the need, at one time or another, to compare their IUE data in the spectral range 1150 to 3200Å with blackbody curves covering a wide range of temperatures. Since this form of blackbody curves is generally only available in the nature of numerical tables, it seemed useful to plot two sets of curves on the PDP 11/40 computer of the Laboratory for Astronomy and Solar Physics. Attached are two sets of blackbody curves, one normalized to unity at 3200Å, the other normalized at 1900Å for those astronomers who are primarily interested in data for the SWP range.

Blackbody curves for the following temperatures are given:

1) Normalized to 1900Å:

6,000K
8,000K
10,000K
15,000K
20,000K
25,000K
30,000K
40,000K
50,000K
60,000K
70,000K
80,000K
90,000K
100,000K
110,000K
120,000K
130,000K
150,000K
200,000K

2) Normalized to 3200Å:

10,000K
15,000K
17,500K
20,000K
22,500K
25,000K
30,000K
32,500K
35,000K
37,500K
40,000K
50,000K
60,000K
70,000K
80,000K
90,000K
100,000K
125,000K
150,000K
200,000K

The data was obtained using RSX 11/IDL. The assistance of E. Sullivan is gratefully acknowledged. A similar program for FORTH will soon be available through the efforts of Dr. R. Fahey.

16.
TEMP
IDL>

6.30000E+03NORM AT LAM= 1900

12.

6,000K

8.

4.

0.

800.

1200.

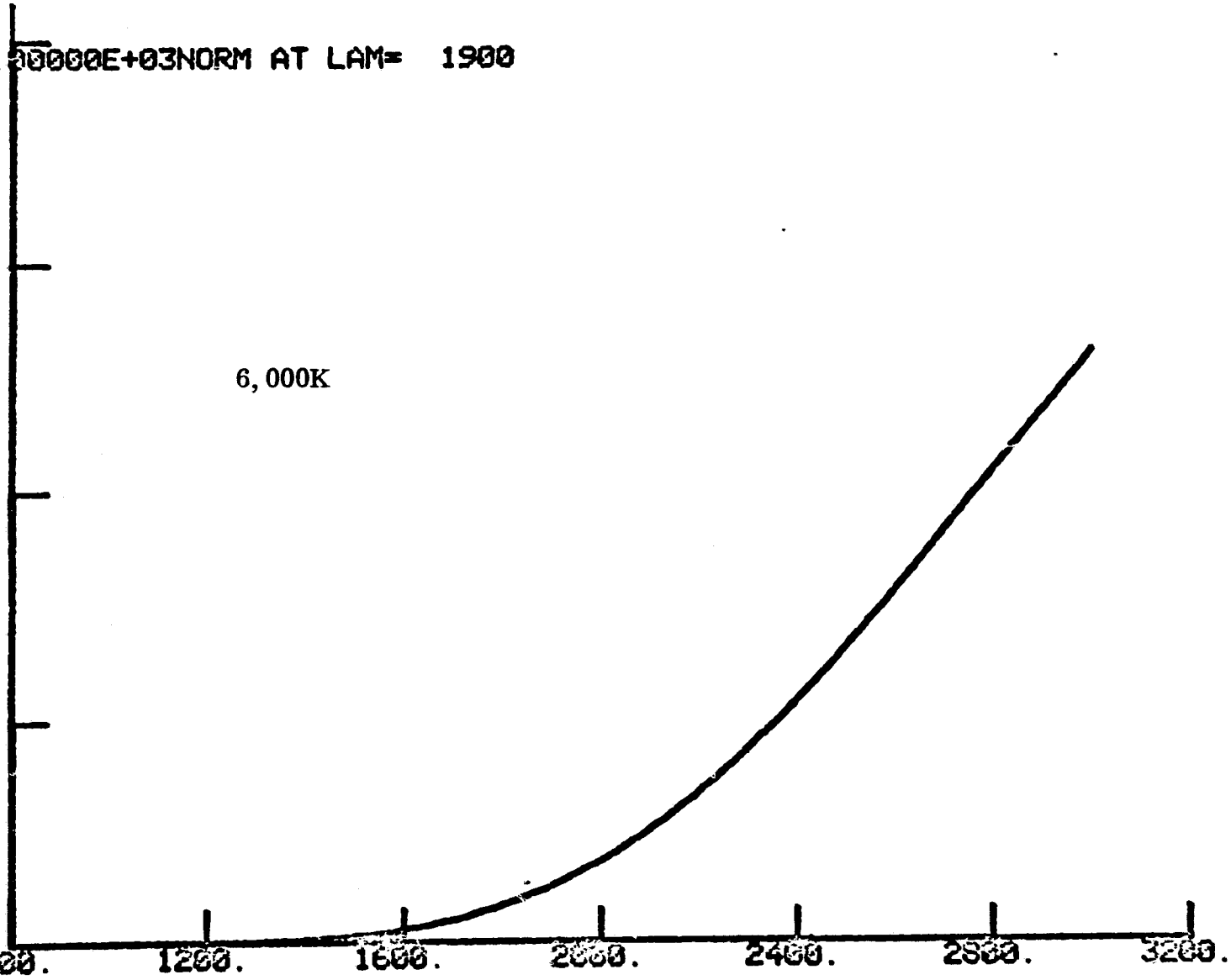
1600.

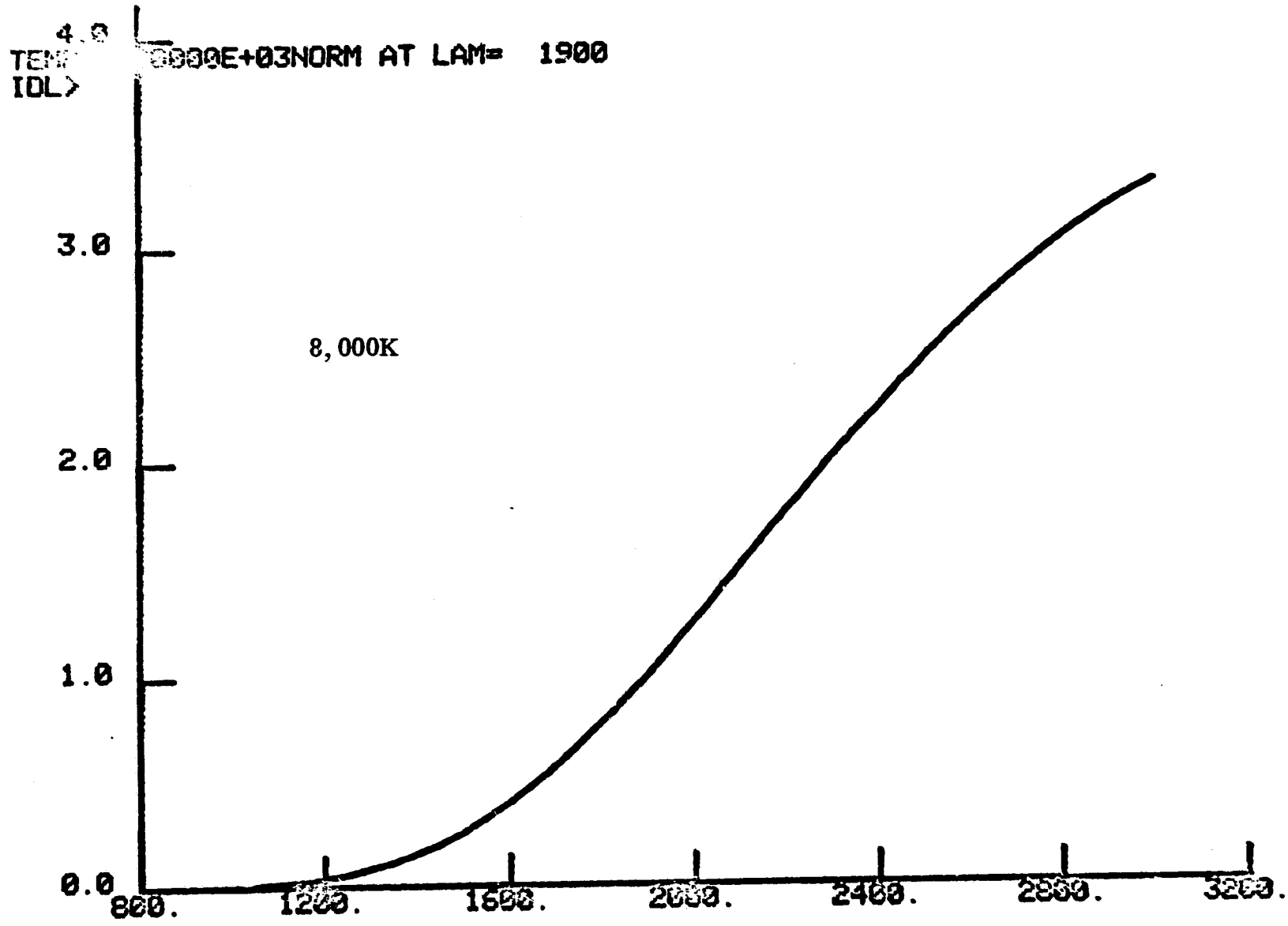
2000.

2400.

2800.

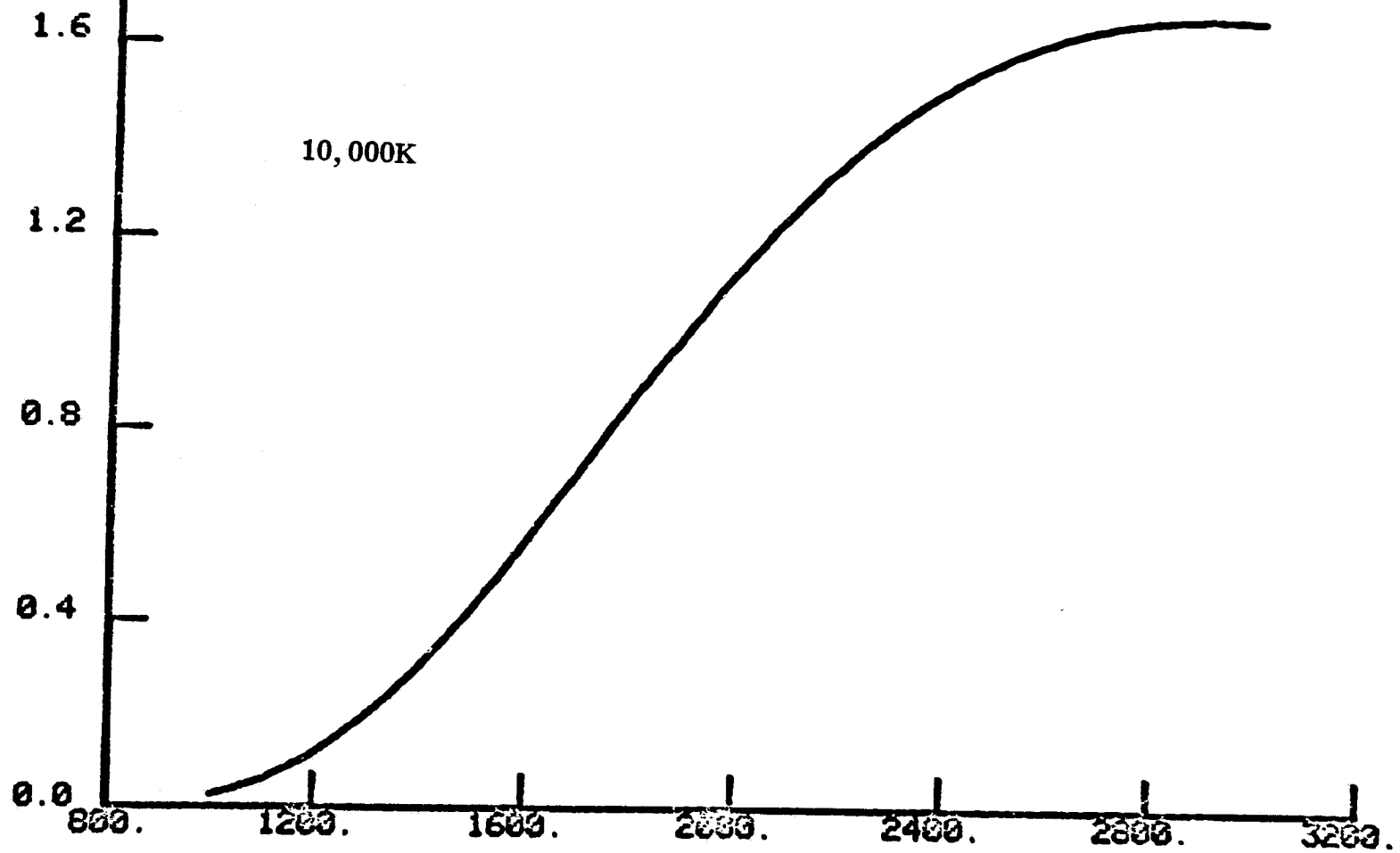
3200.

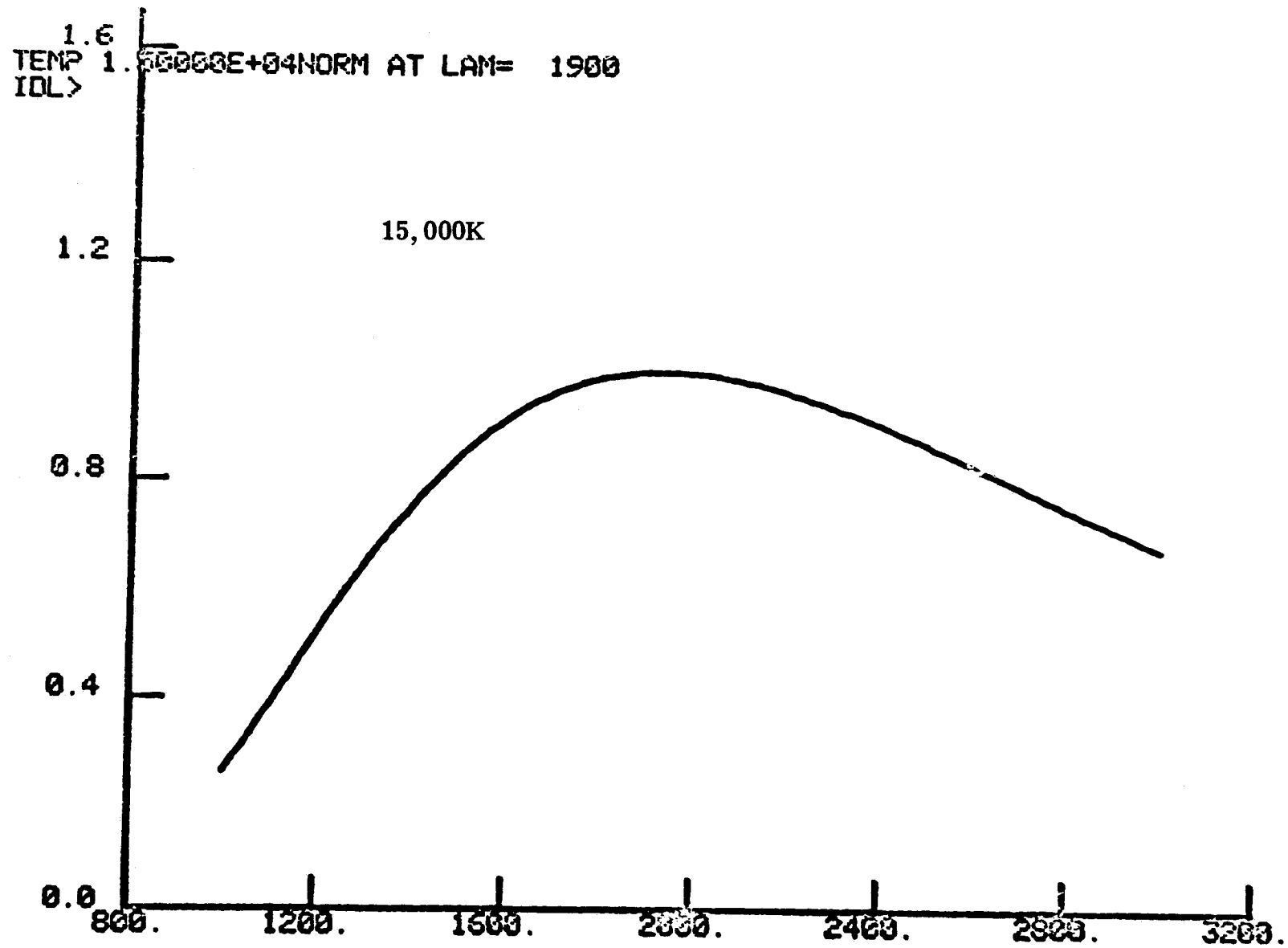


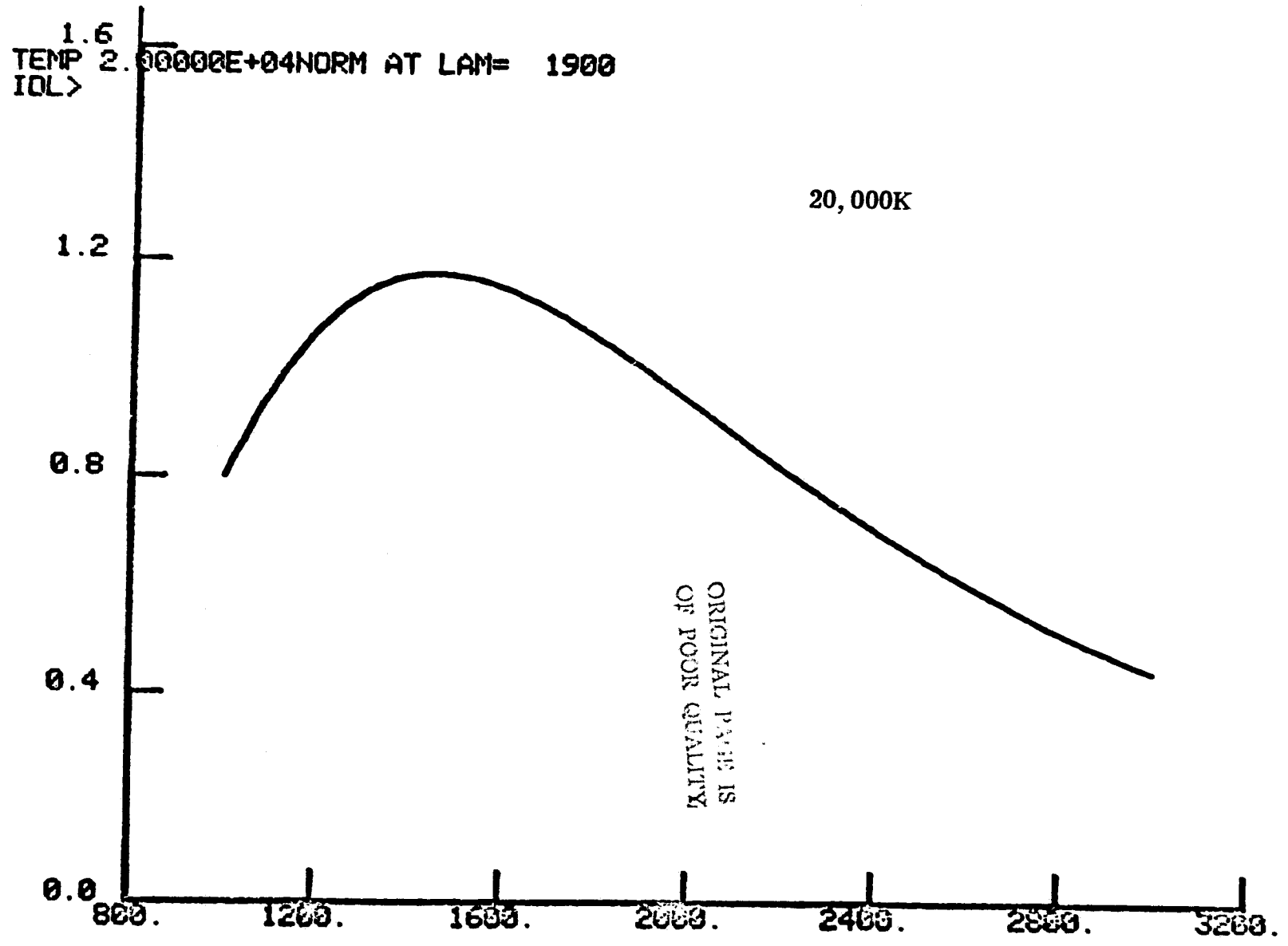


ORIGINAL PAGE IS
OF POOR QUALITY

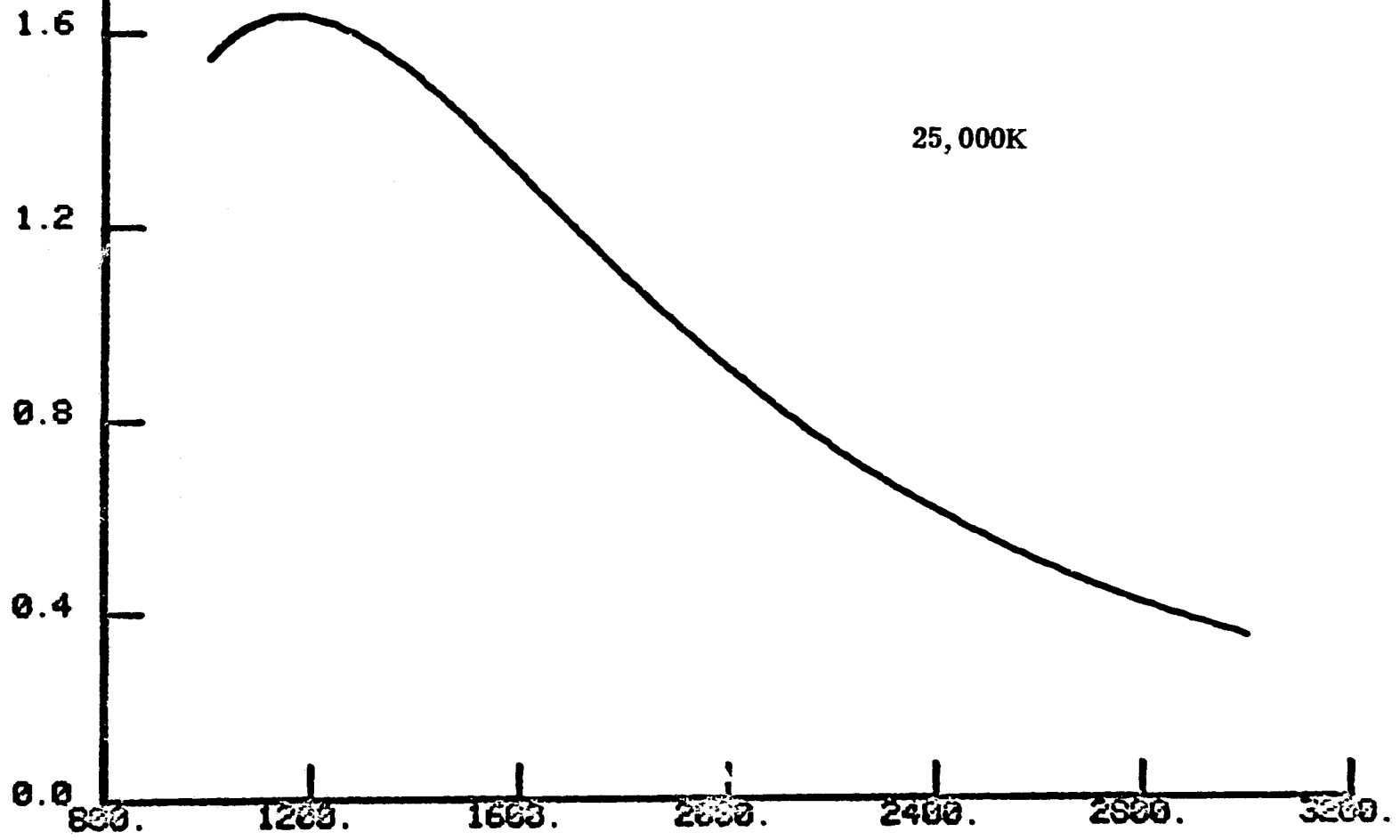
2.0
TEMP 1 90000E+04NORM AT LAM= 1900
IOL>



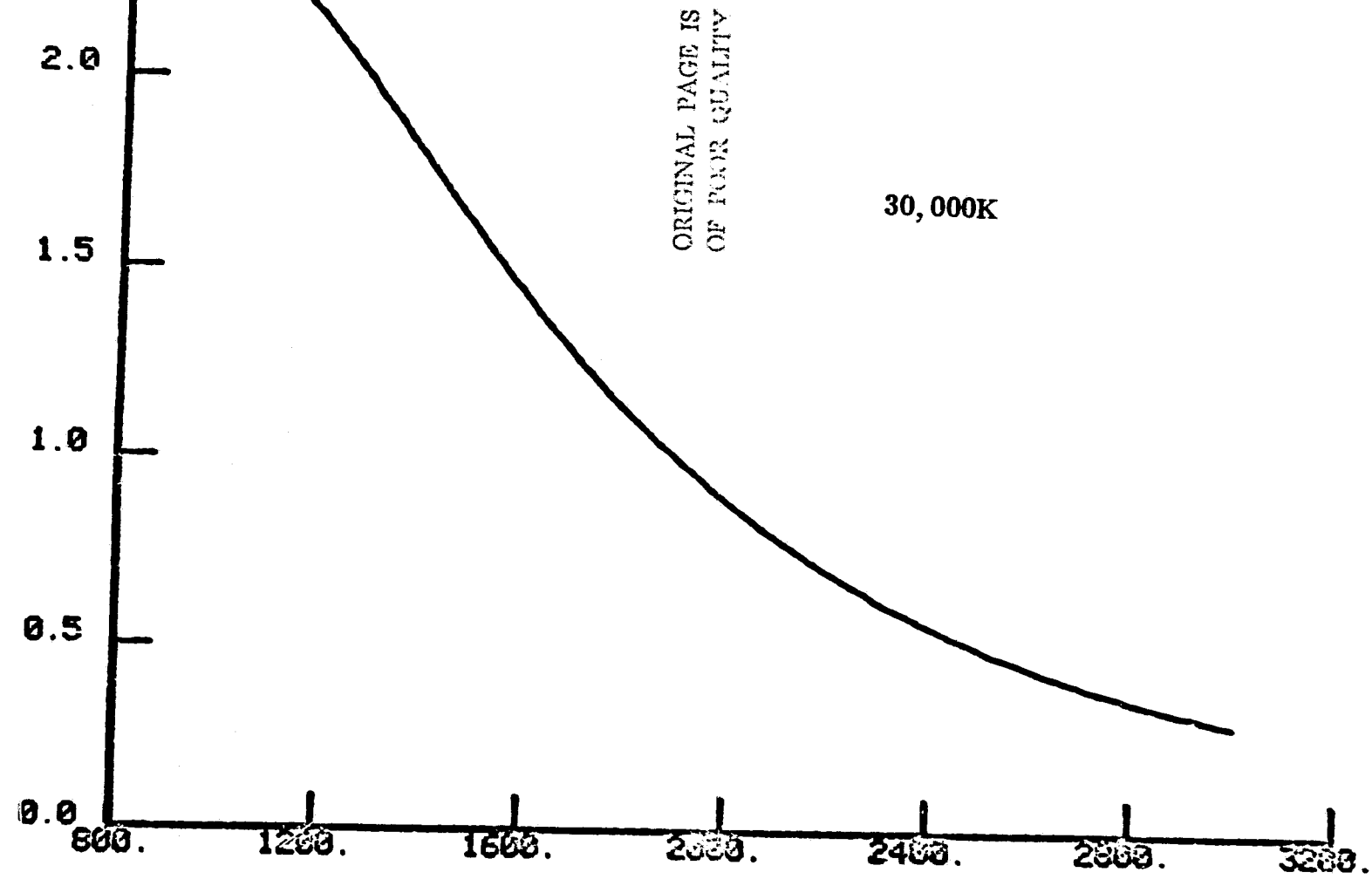


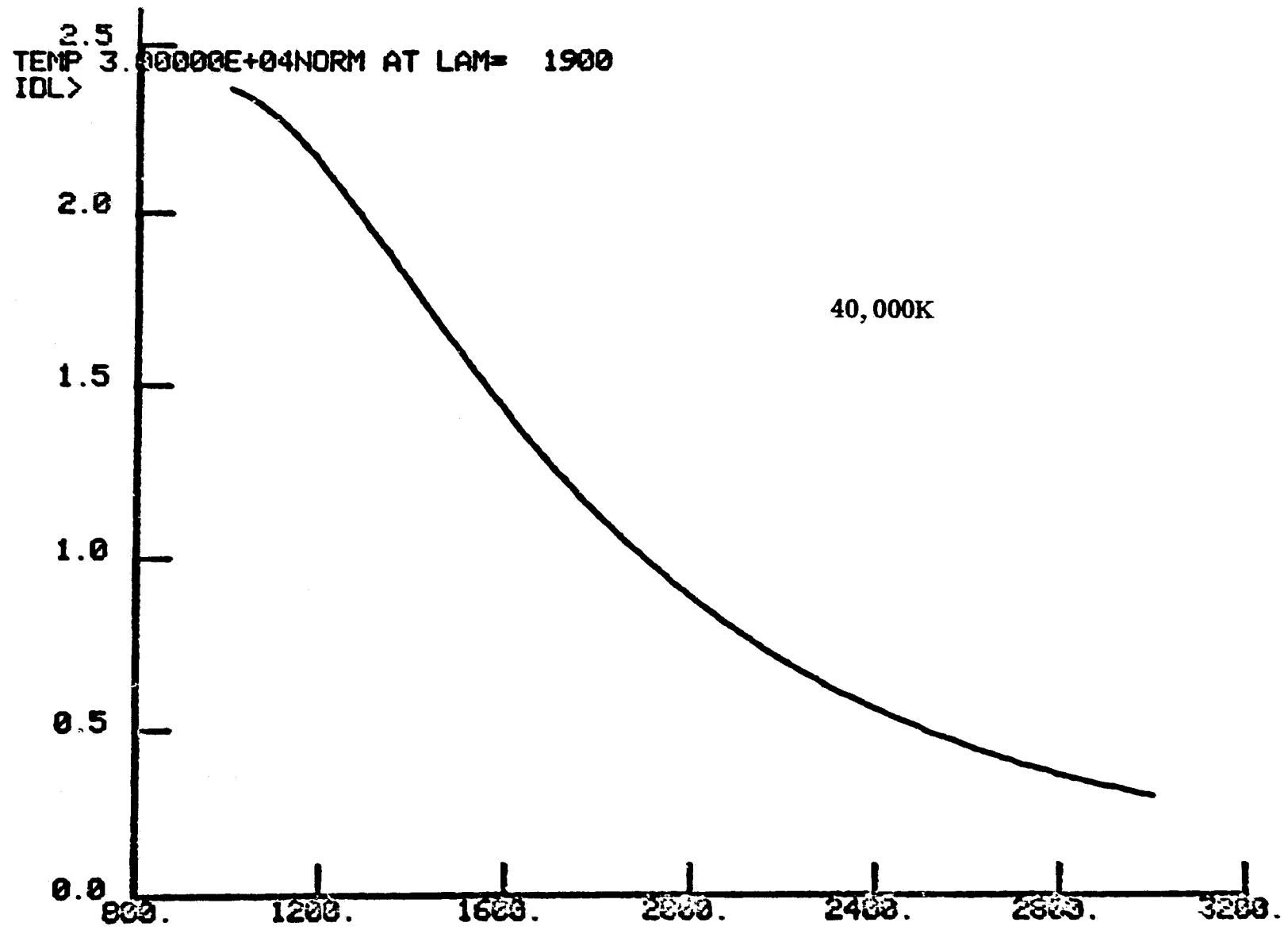


2.0
TEMP 2.50000E+04 NORM AT LAM= 1900
IDL>

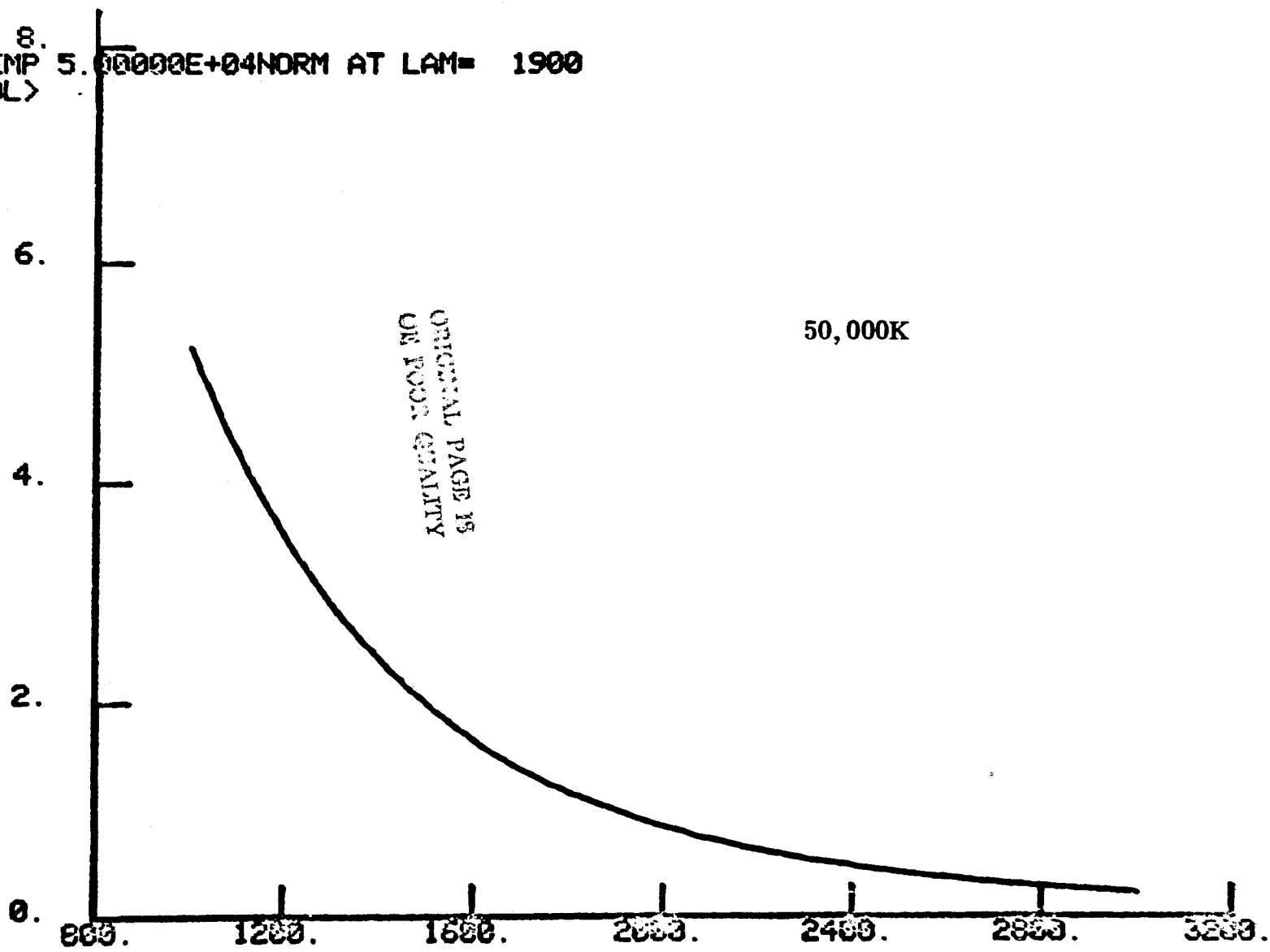


2.5
TEMP 3.00000E+04 NORM AT LAM= 1.90000E+03
IDL>

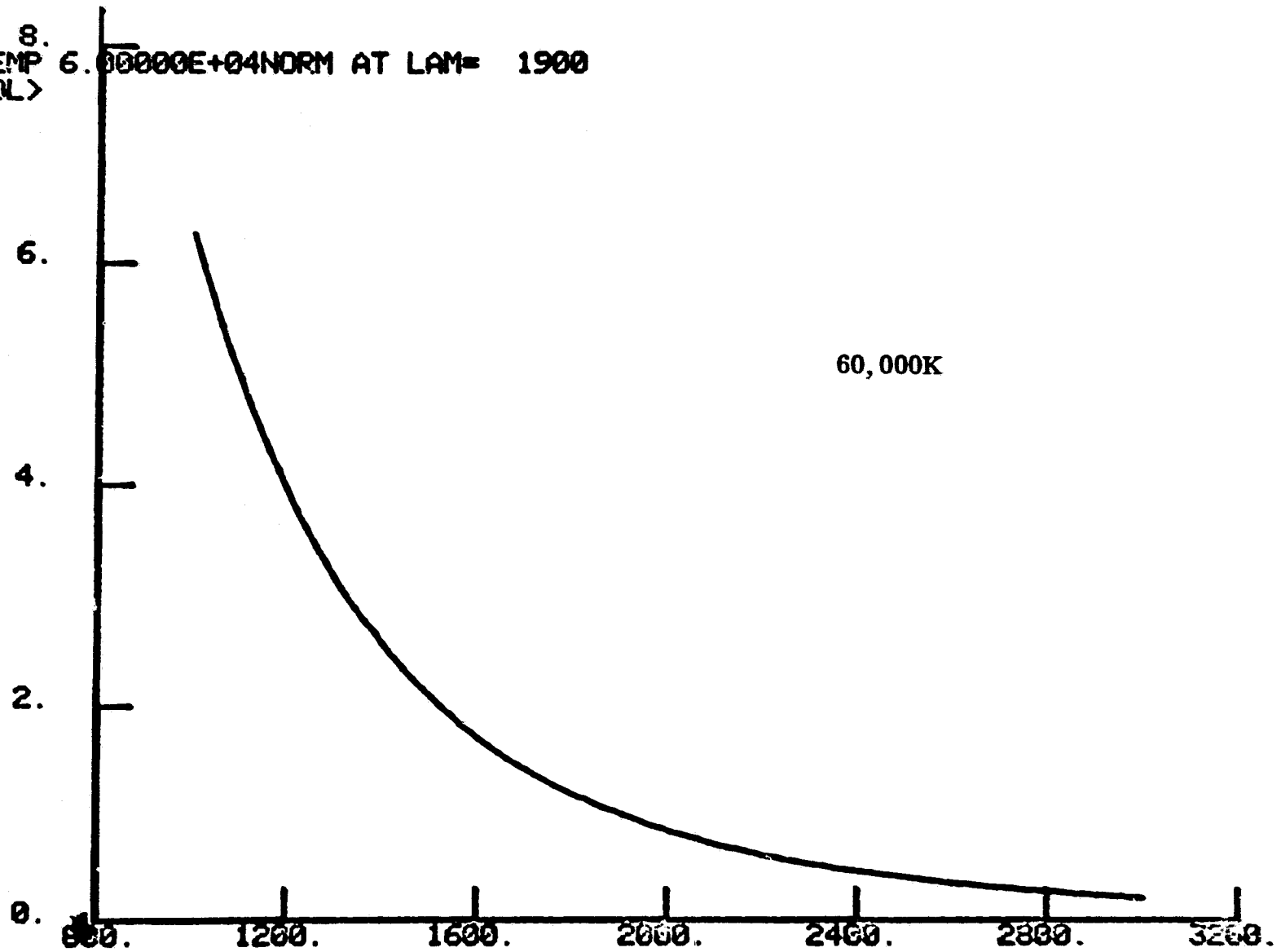




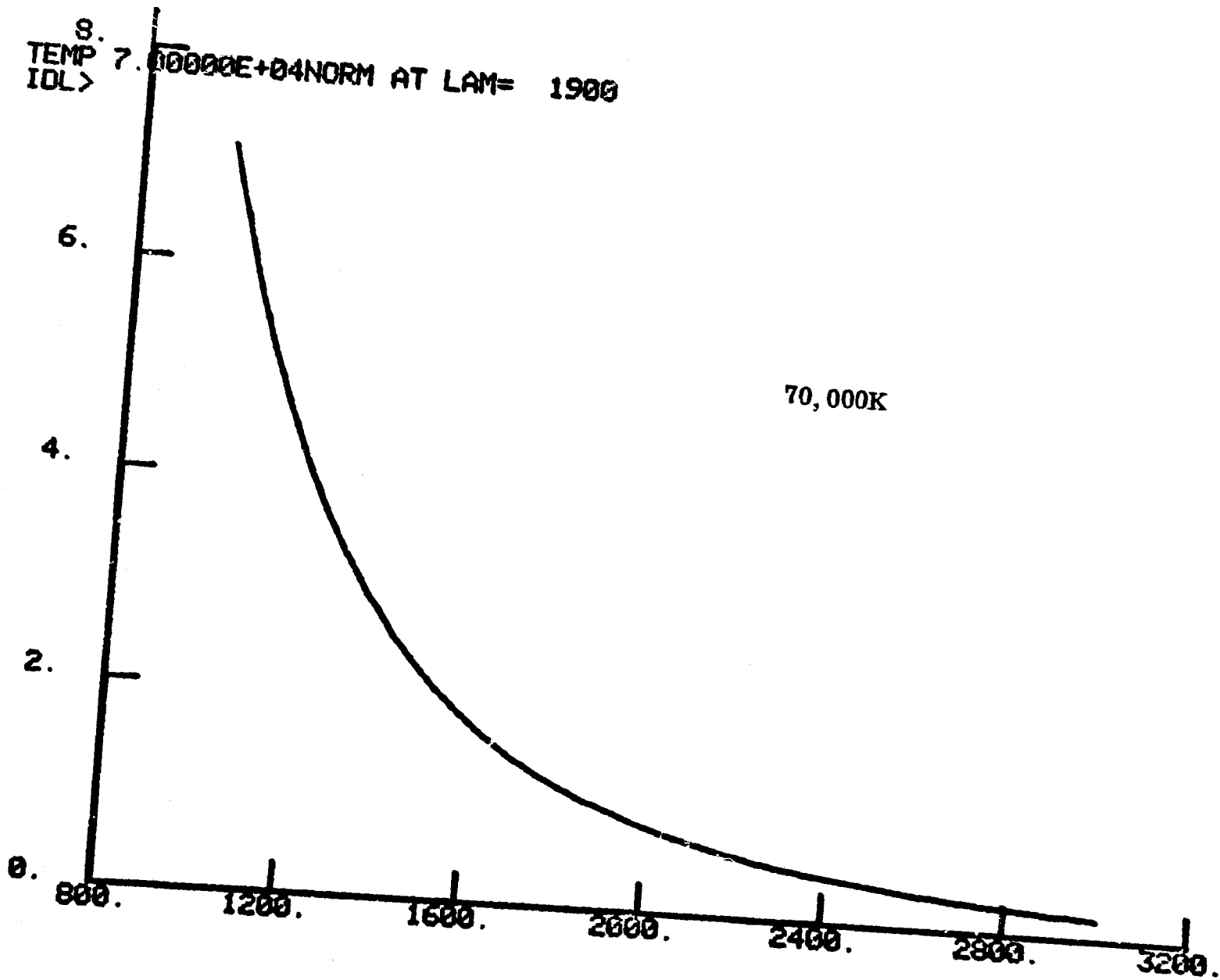
8.
TEMP 5.00000E+04NORM AT LAM= 1900
IDL>



8.
TEMP 6.00000E+04 NORM AT LAM= 1900
IDL>

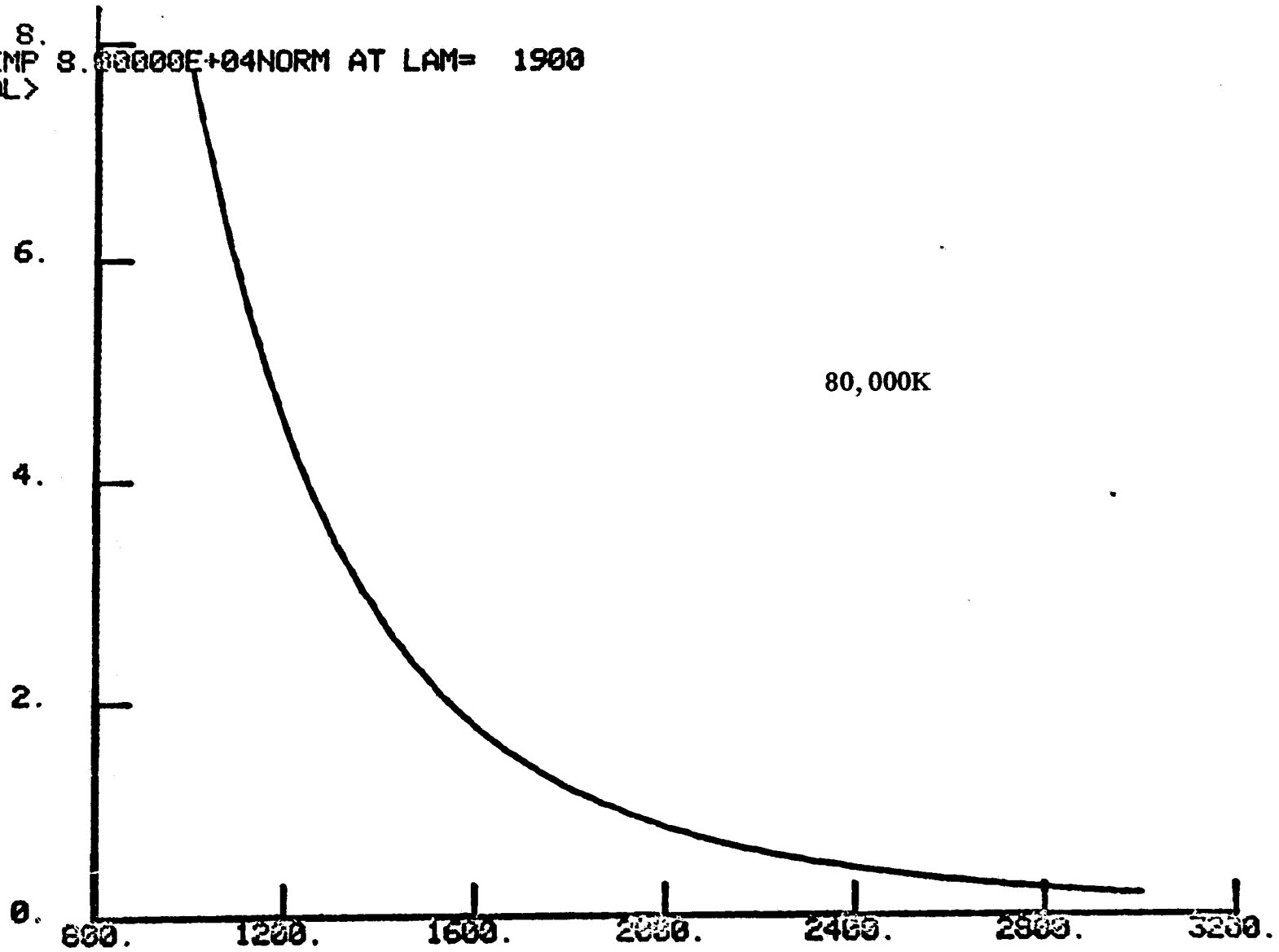


8.
TEMP IDL> 7.00000E+04 NORM AT LAM= 1900

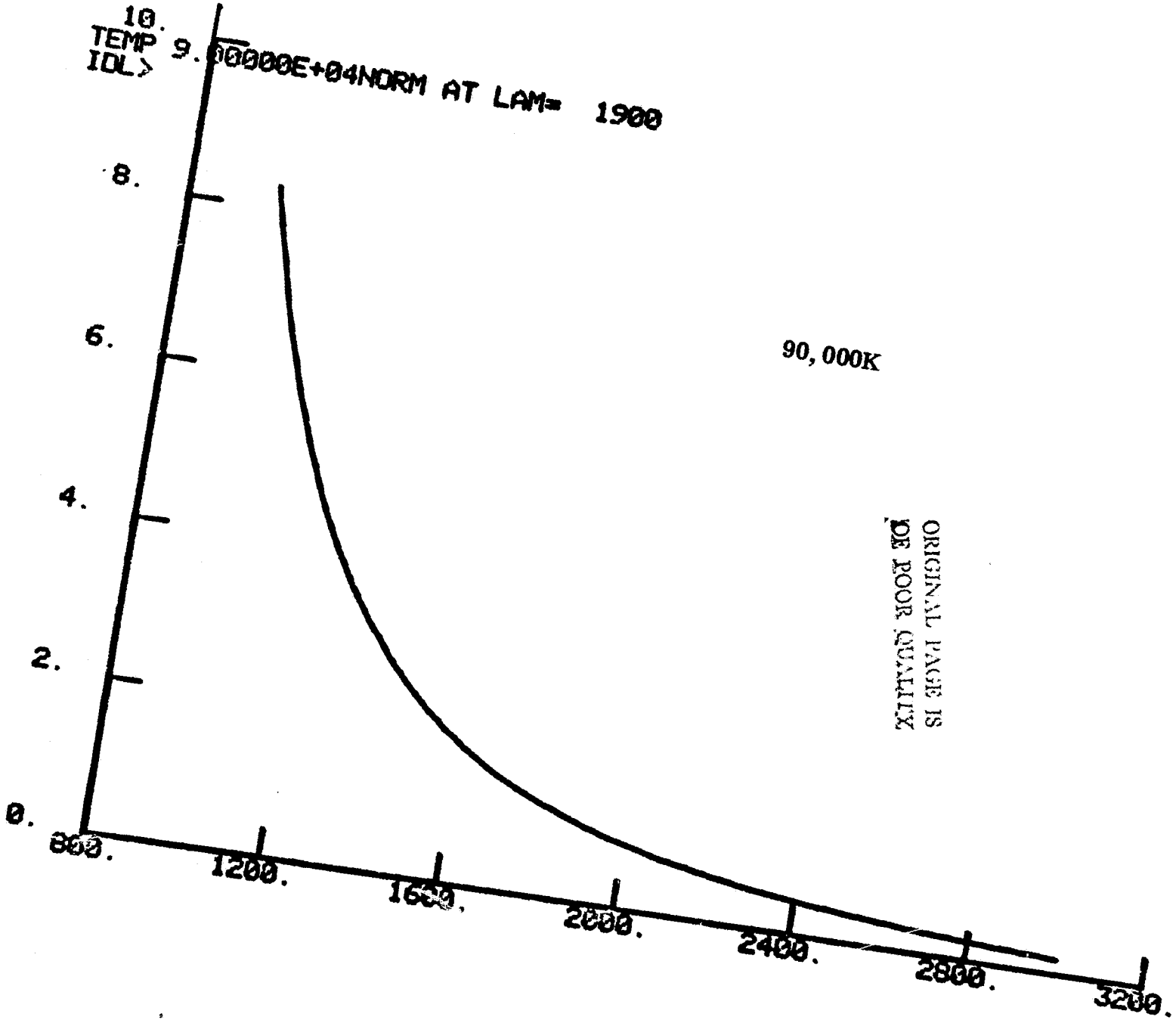


ORIGINAL PAGE IS
OF POOR QUALITY

8.
TEMP 8.80000E+04NORM AT LAM= 1900
IDL>



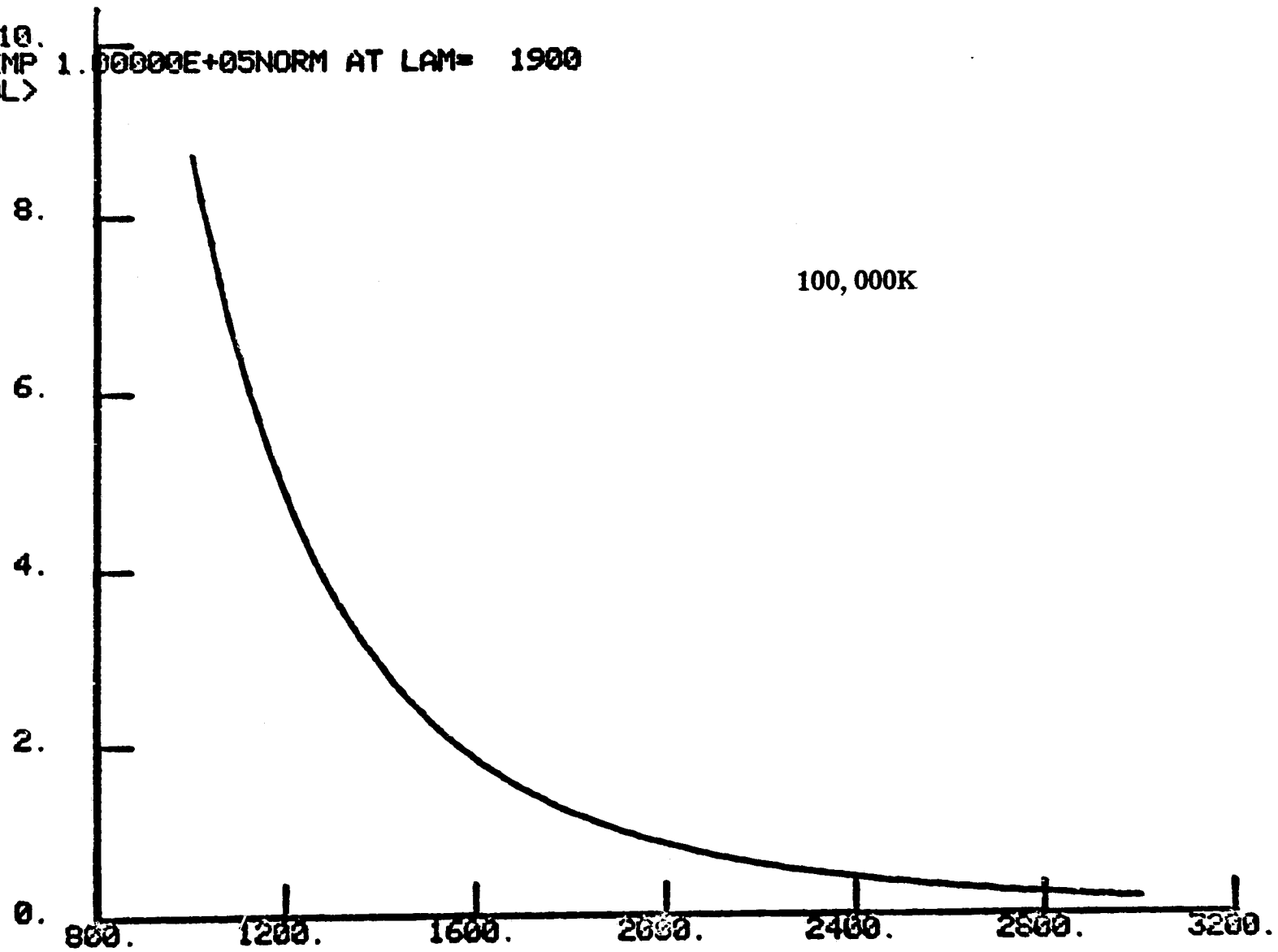
10.
TEMP IDL > 9.00000E+04 NORM AT LAM= 1900



90,000K

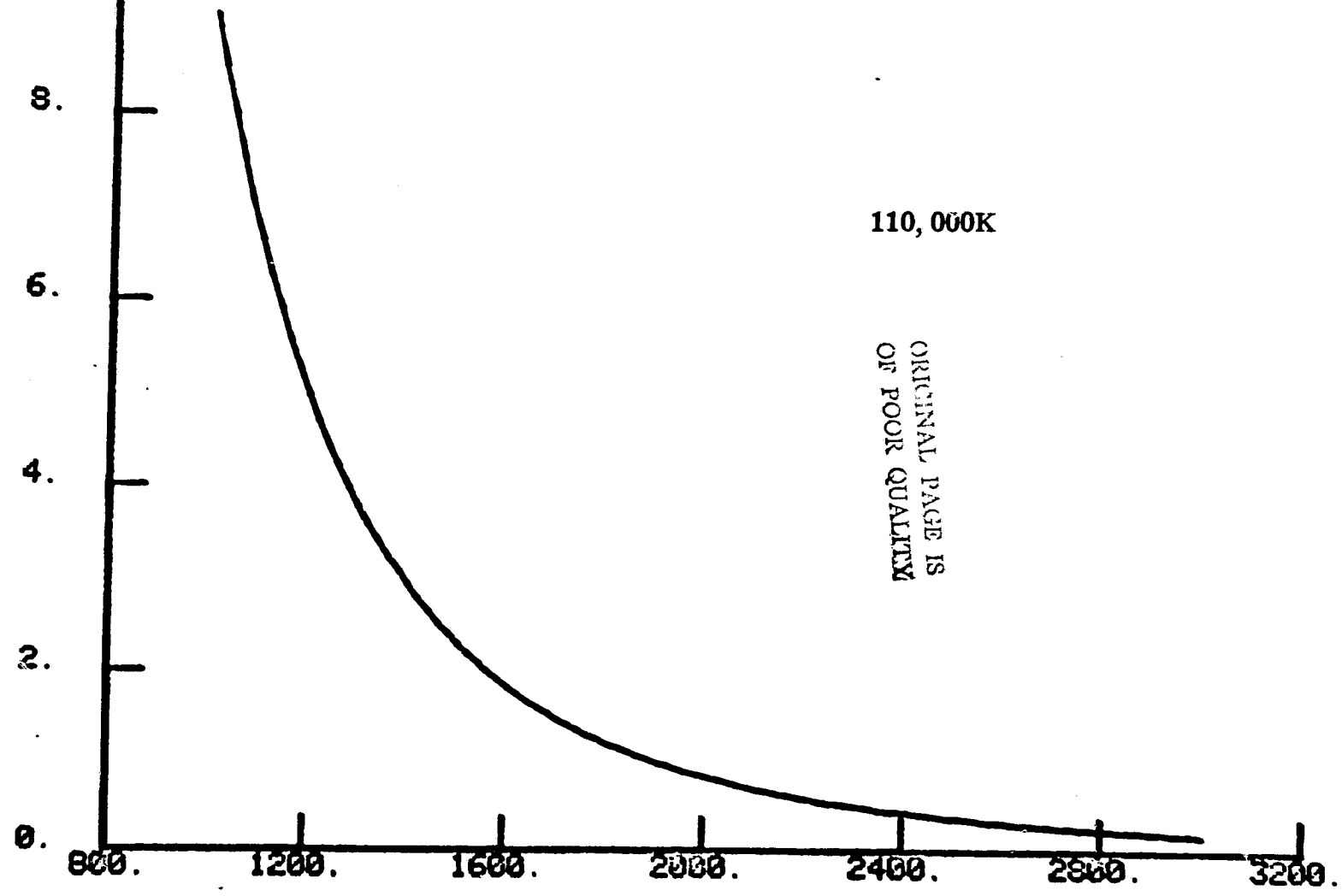
ORIGINAL PAGE IS
OF POOR QUALITY

10.
TEMP 1.00000E+05 NORM AT LAM= 1900
IDL>



10.
TEMP
IDL>

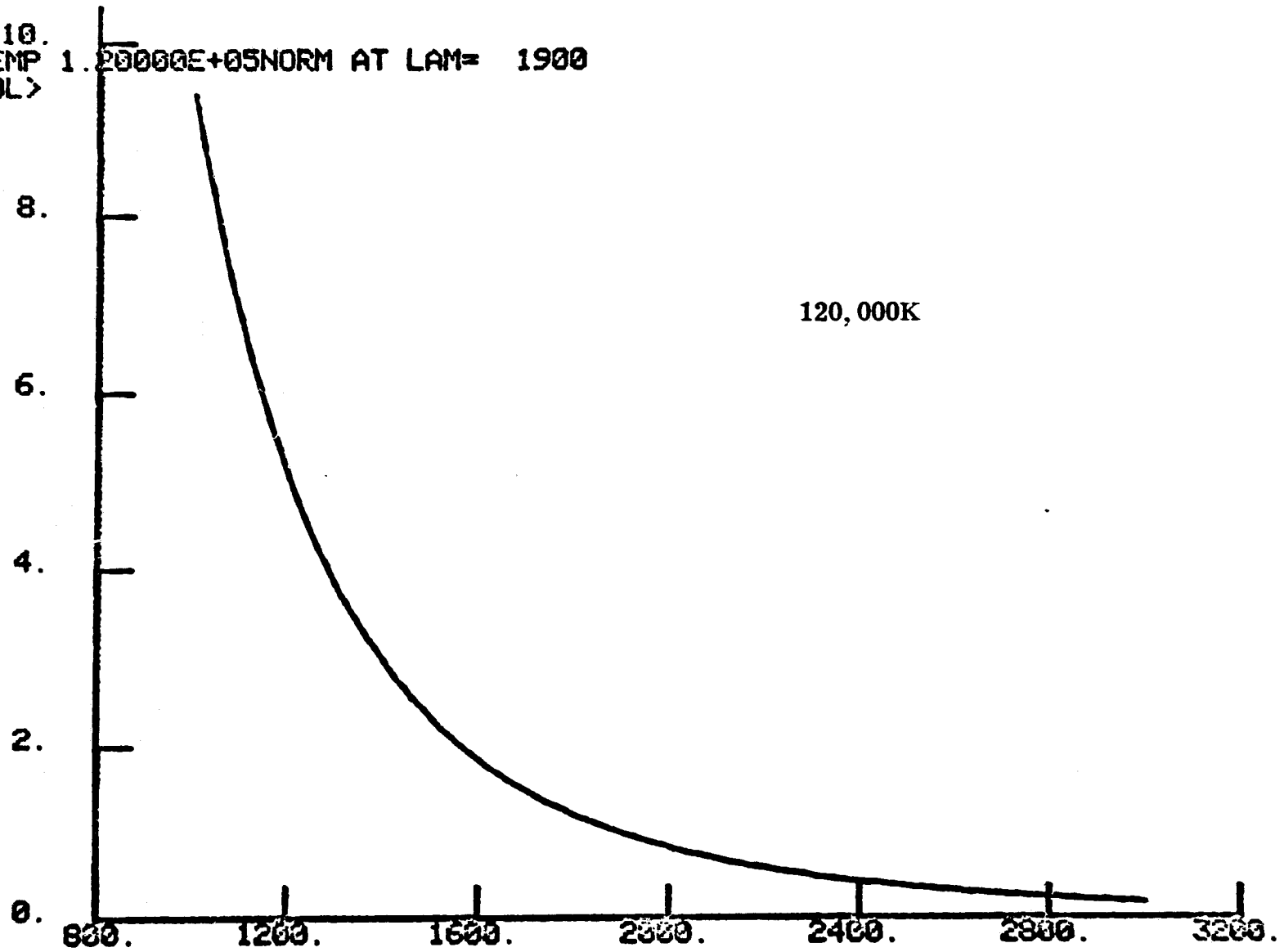
1. 0000E+05NORM AT LAM= 1900



110,000K

ORIGINAL PAGE IS
OF POOR QUALITY

10.
TEMP 1.20000E+05NORM AT LAM= 1900
IDL>



10.
TEMP
IDL>

1.50000E+05NORM AT LAM= 1900

8.

6.

4.

2.

0.

800.

1200.

1600.

2000.

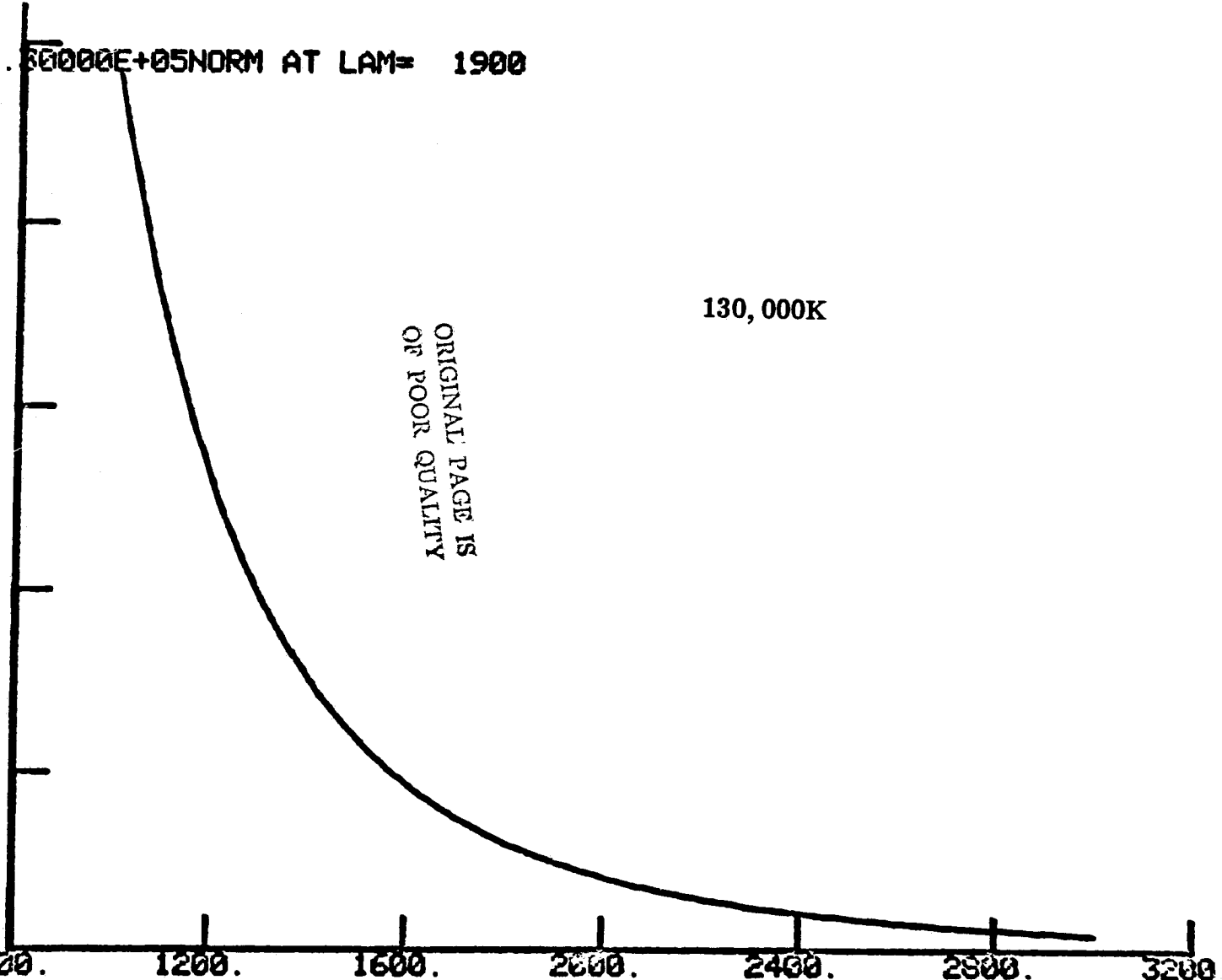
2400.

2800.

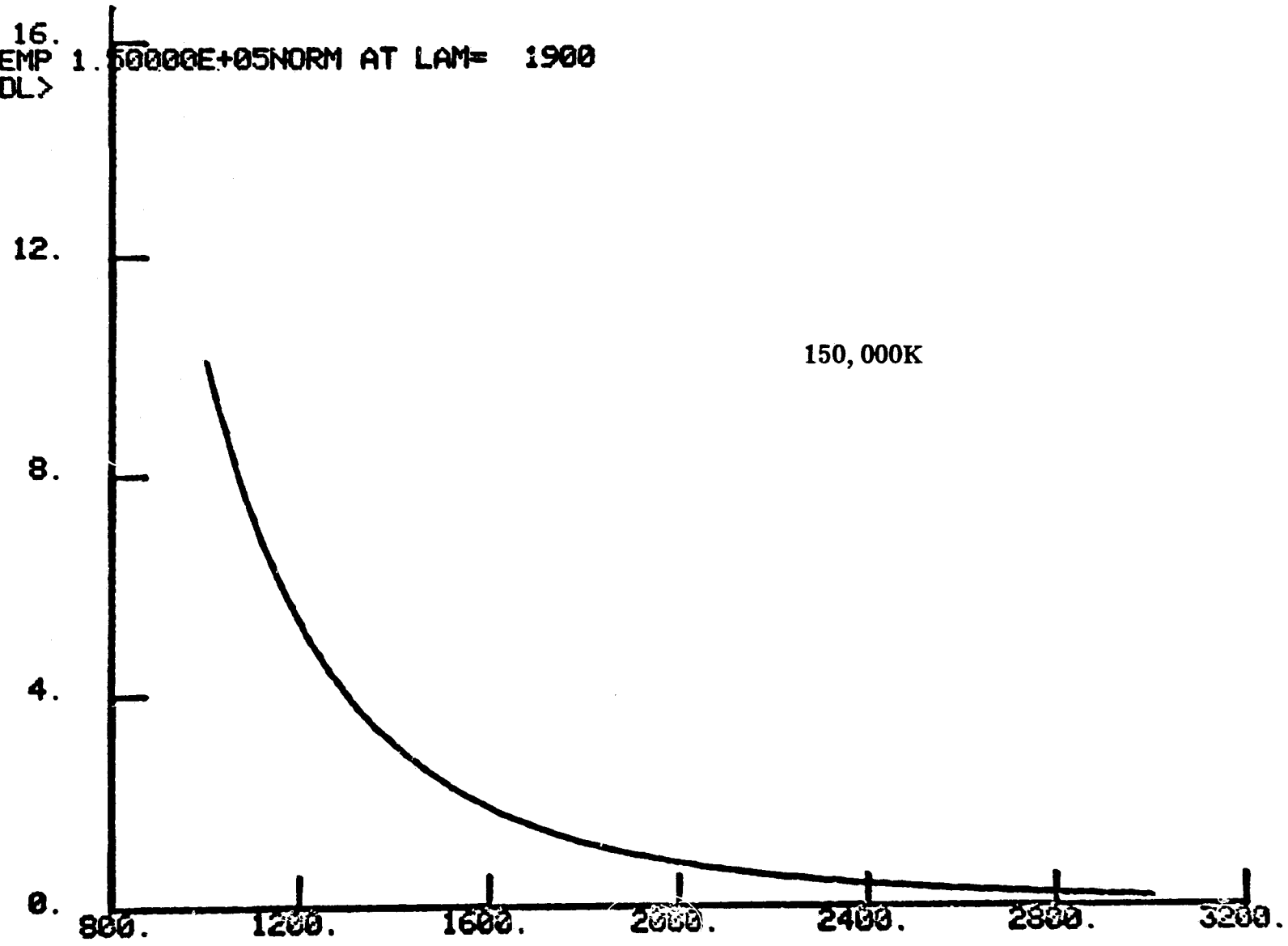
3200.

130,000K

ORIGINAL PAGE IS
OF POOR QUALITY



16.
TEMP 1.50000E+05NORM AT LAM= 1900
IDL>



16
TEMP 2.00000E+05 NORM AT LAM= 1900
IDL>

12.

8.

4.

0.

800.

1200.

1600.

2000.

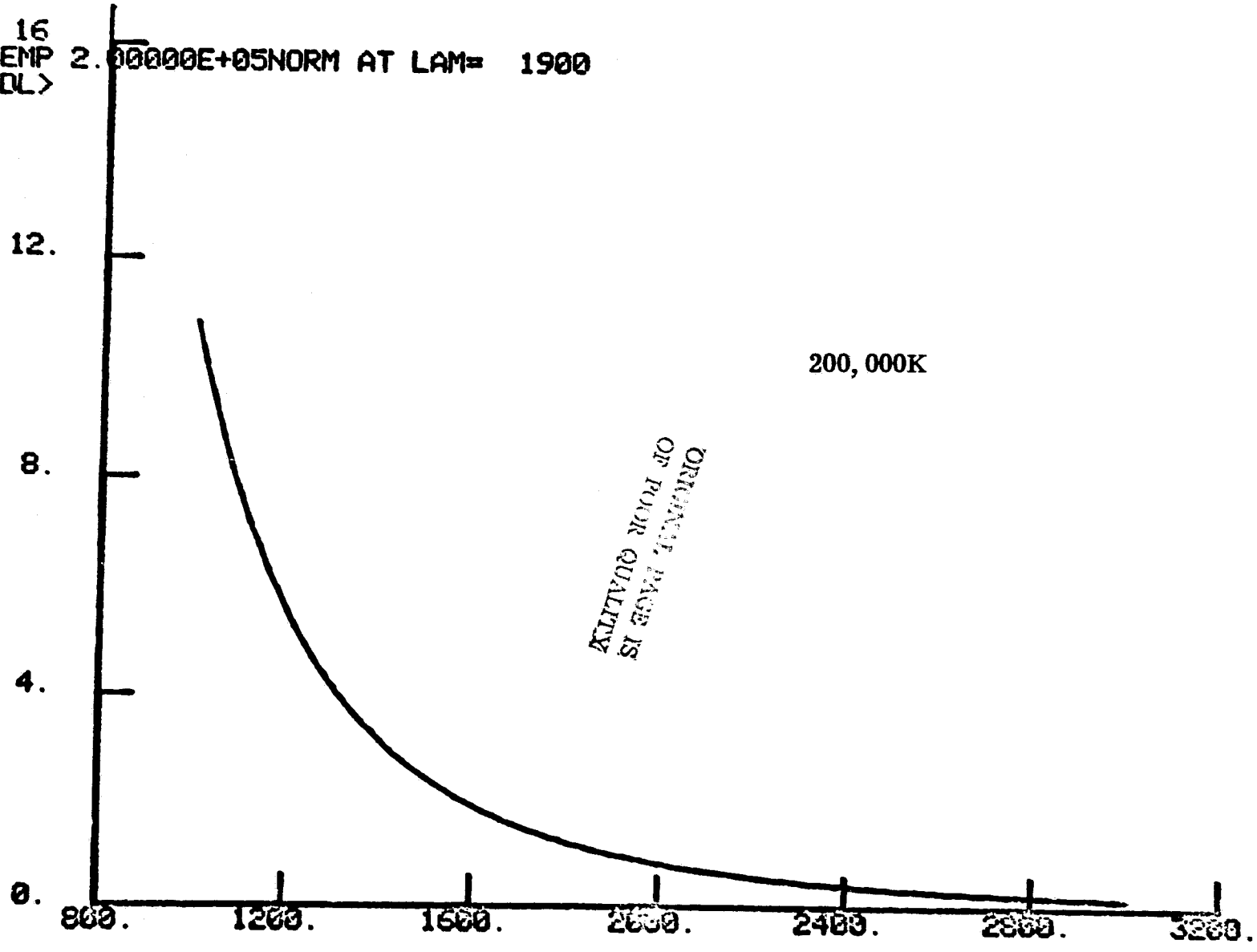
2400.

2800.

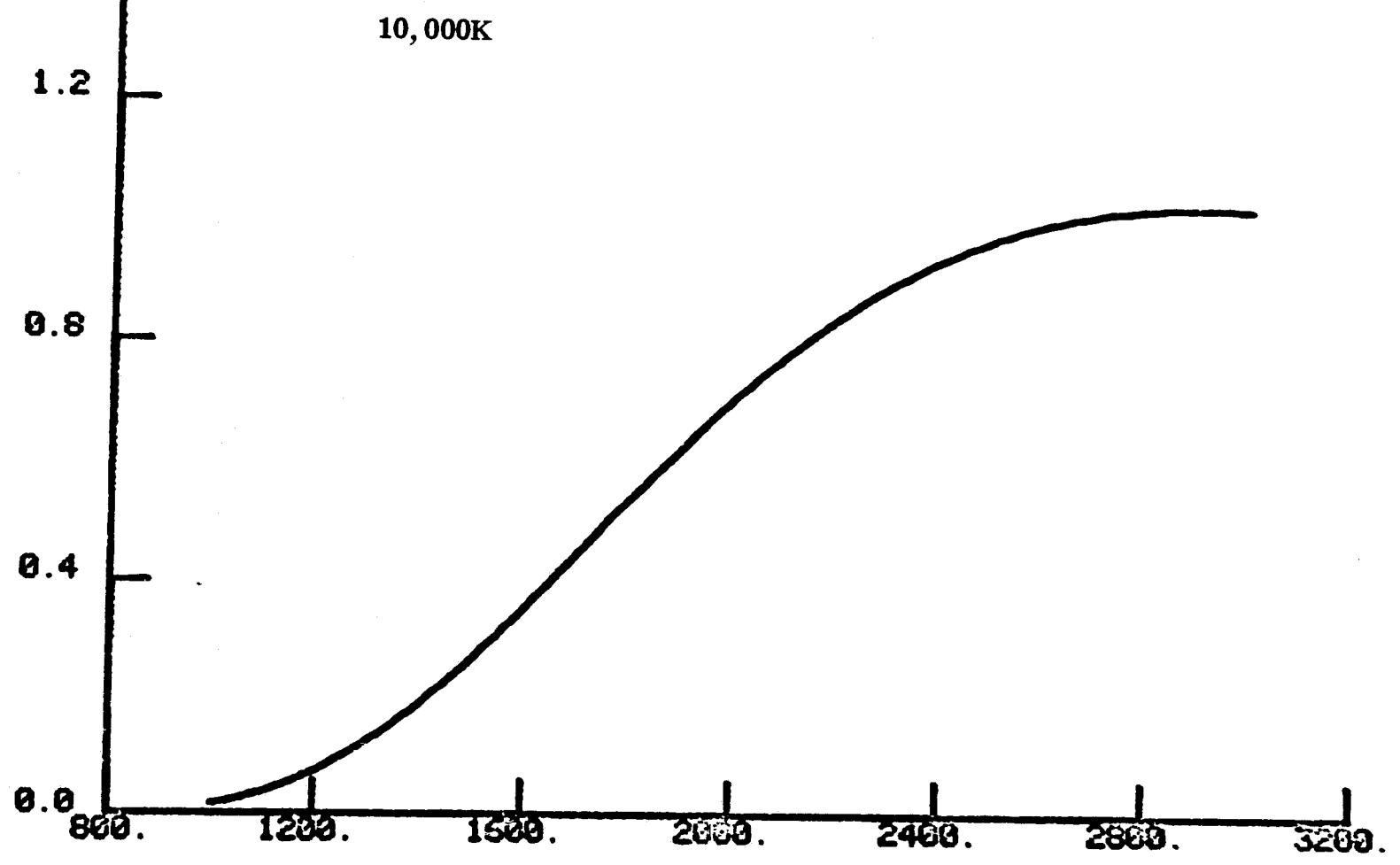
3200.

200,000K

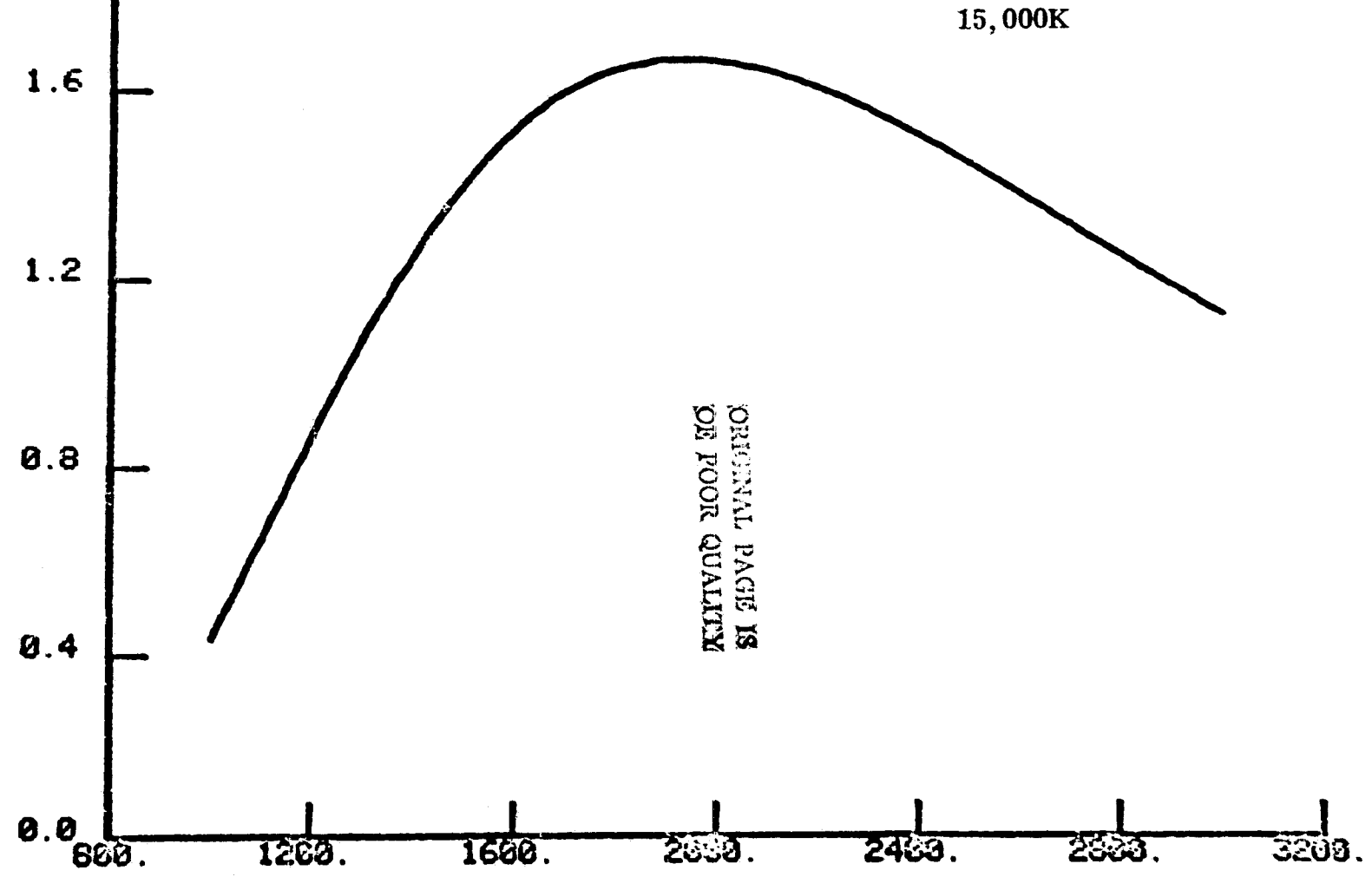
ORIGINAL PAGE IS
OF POOR QUALITY



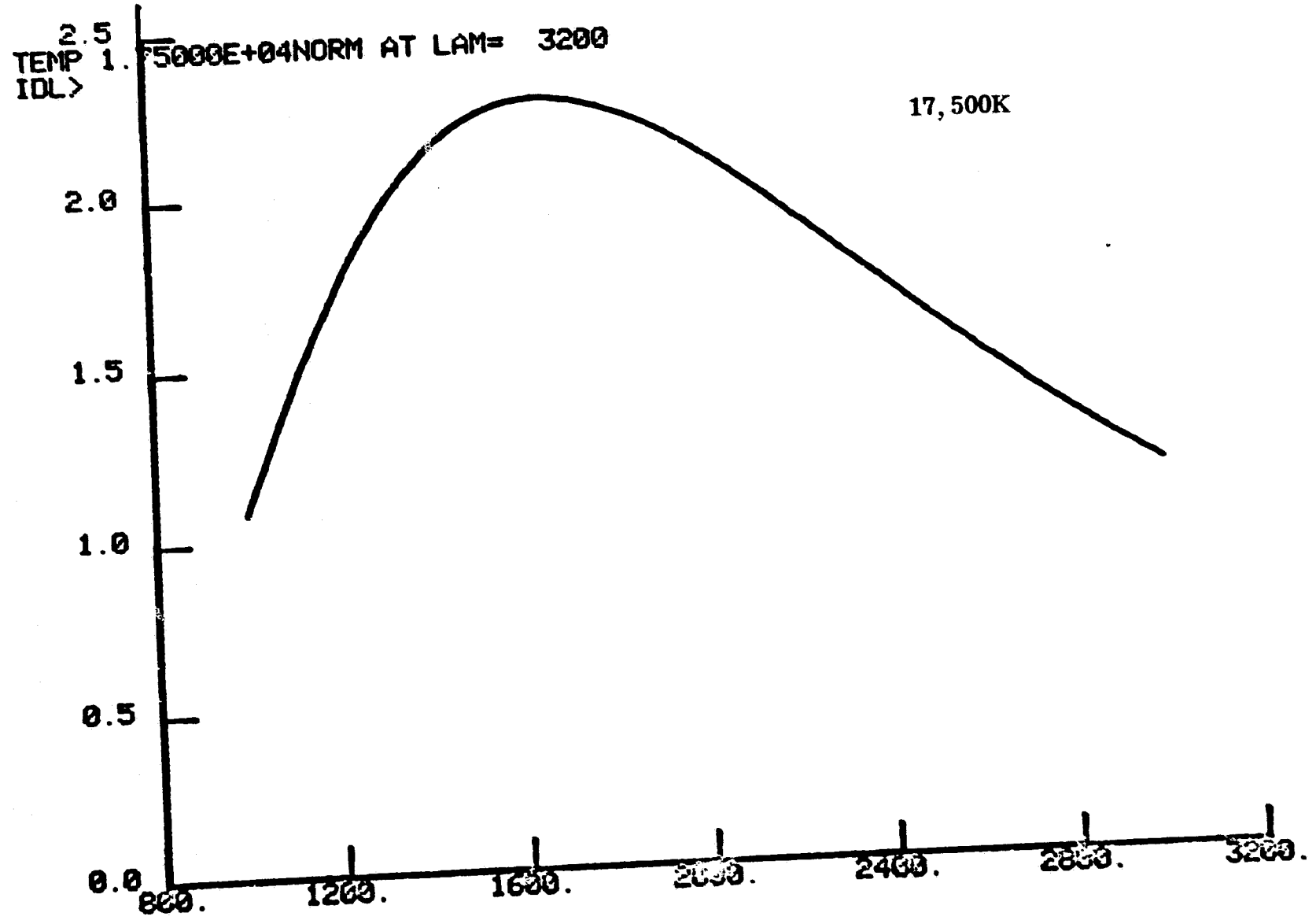
1.6
TEMP 1.00000E+04 NORM AT LAM= 3200
IDL>



2.0
TEMP 1.50000E+04 NORM AT LAM= 3200
IDL>



ORIGINAL PAGE IS
OF POOR QUALITY



4.0
TEMP 2.00000E+04 NORM AT LAM= 3200
IDL>

3.0

20,000K

2.0

ORIGINAL PAPER IS
OF POOR QUALITY

1.0

0.0

800.

1200.

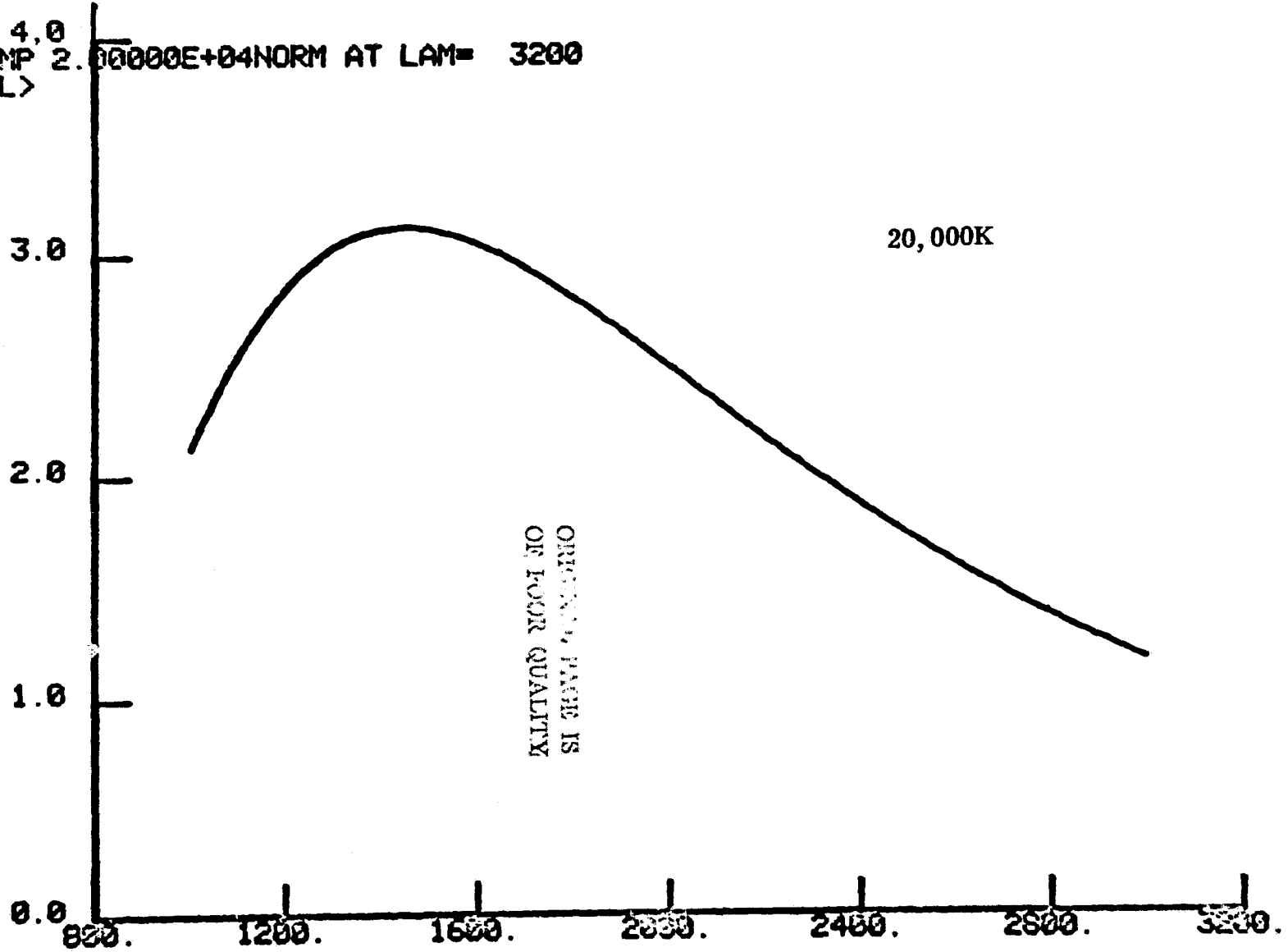
1600.

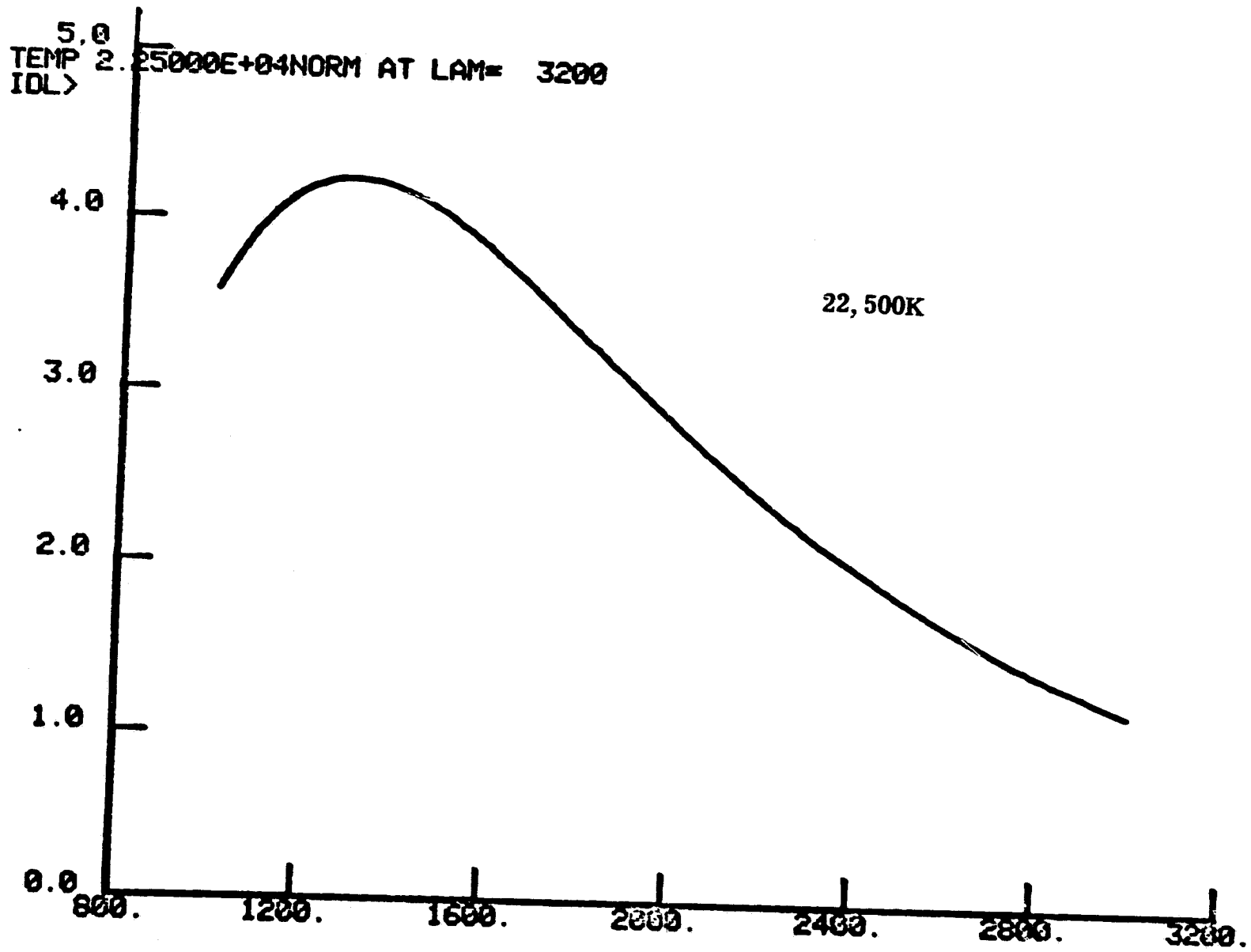
2000.

2400.

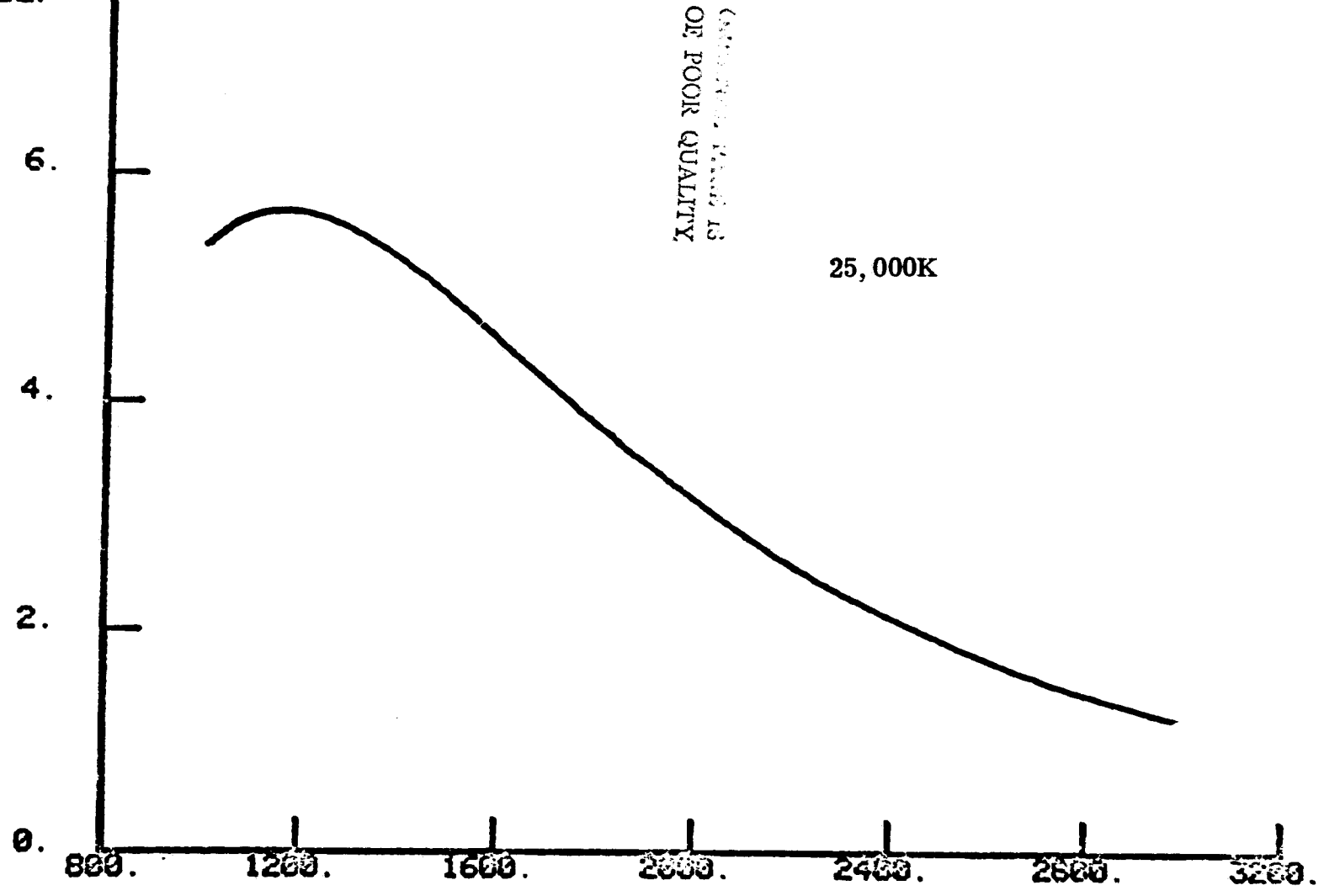
2800.

3200.

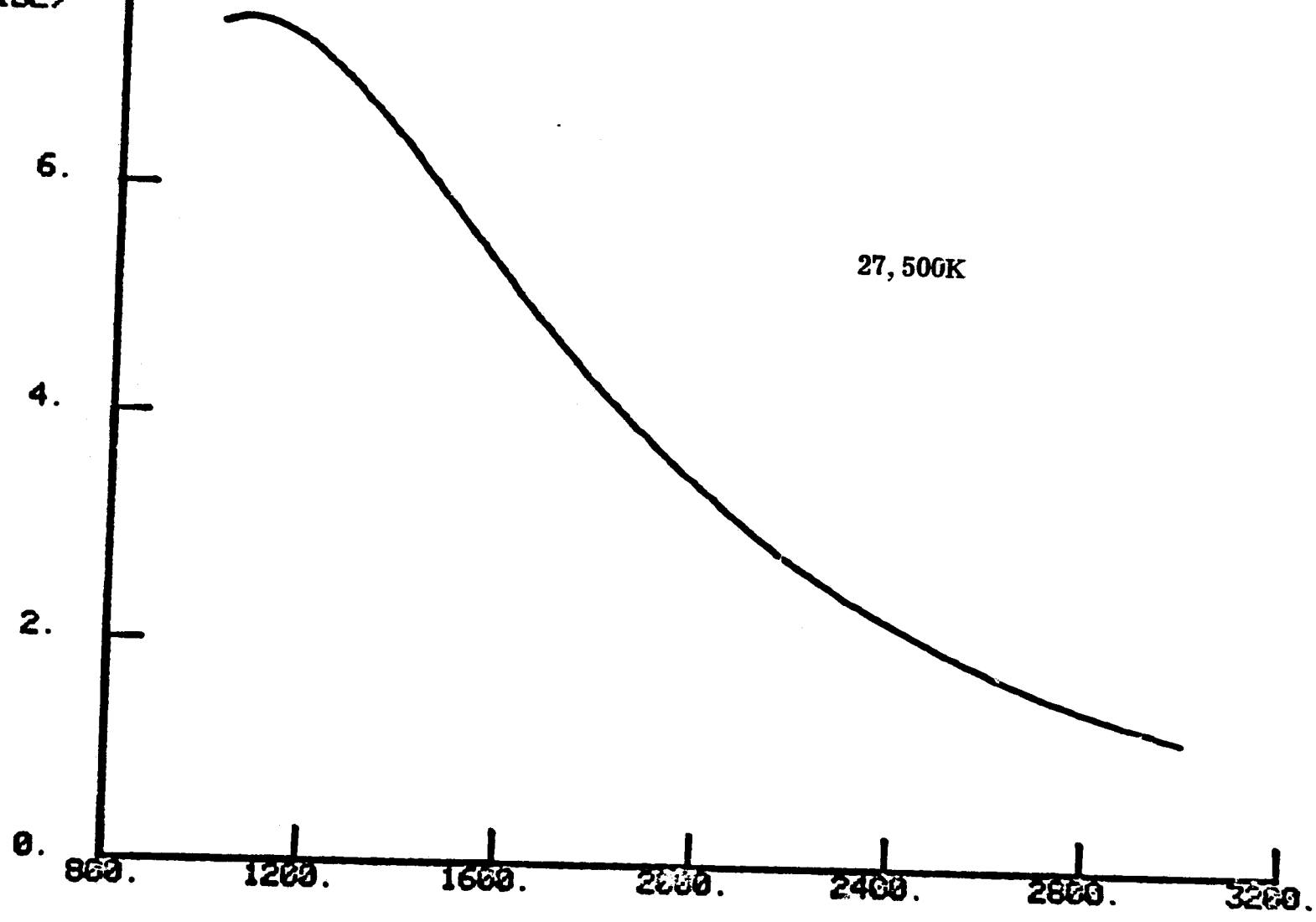




8.
TEMP 2.50000E+04 NORM AT LAM= 3200
IDL>



S.
TEMP 2. 5000E+04NORM AT LAM= 3200
IDL>



10.
TEMP 3.00000E+04NORM AT LAM= 3200
IDL>

8.

6.

4.

2.

0.

800.

1200.

1600.

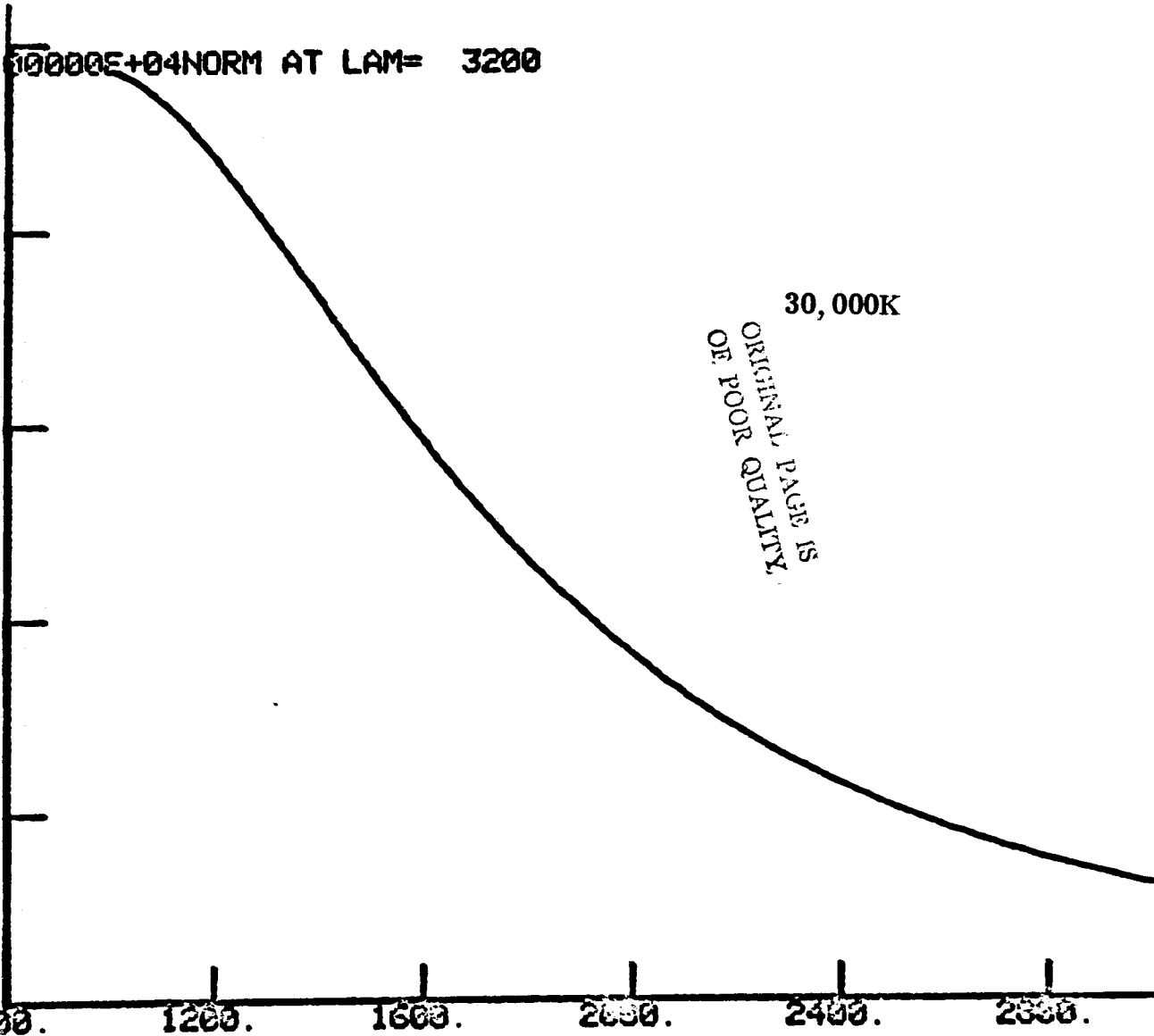
2000.

2400.

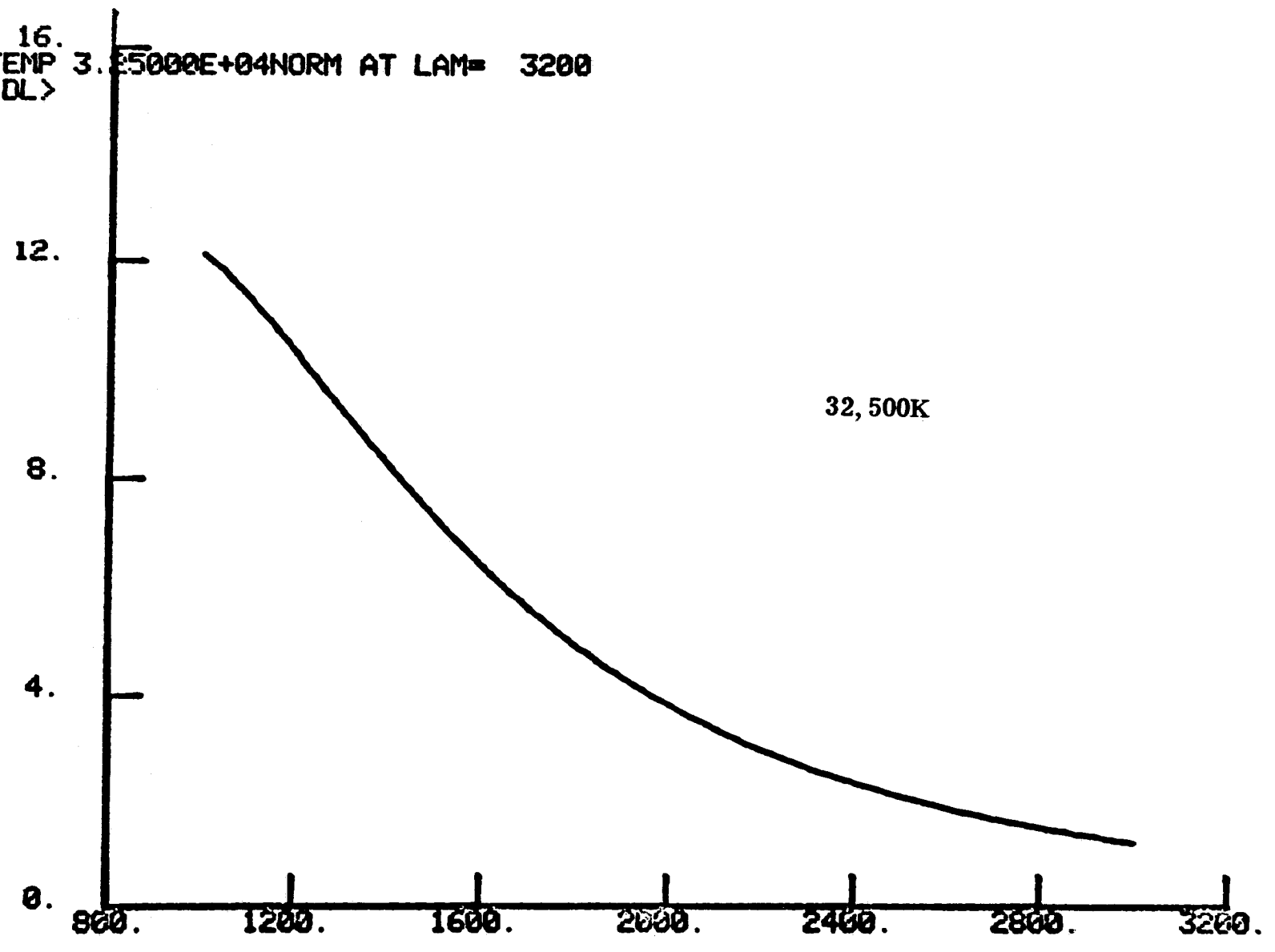
2800.

3200.

30,000K
ORIGINAL PAGE IS
OF POOR QUALITY



16.
TEMP 3.25000E+04 NORM AT LAM= 3200
IDL>



16.
TEMP
IDL>

3.50000E+04 NORM AT LAM= 3200

12.

35,000K

8.

ORIGINAL PAGE IS
OF POOR QUALITY

4.

0.

800.

1200.

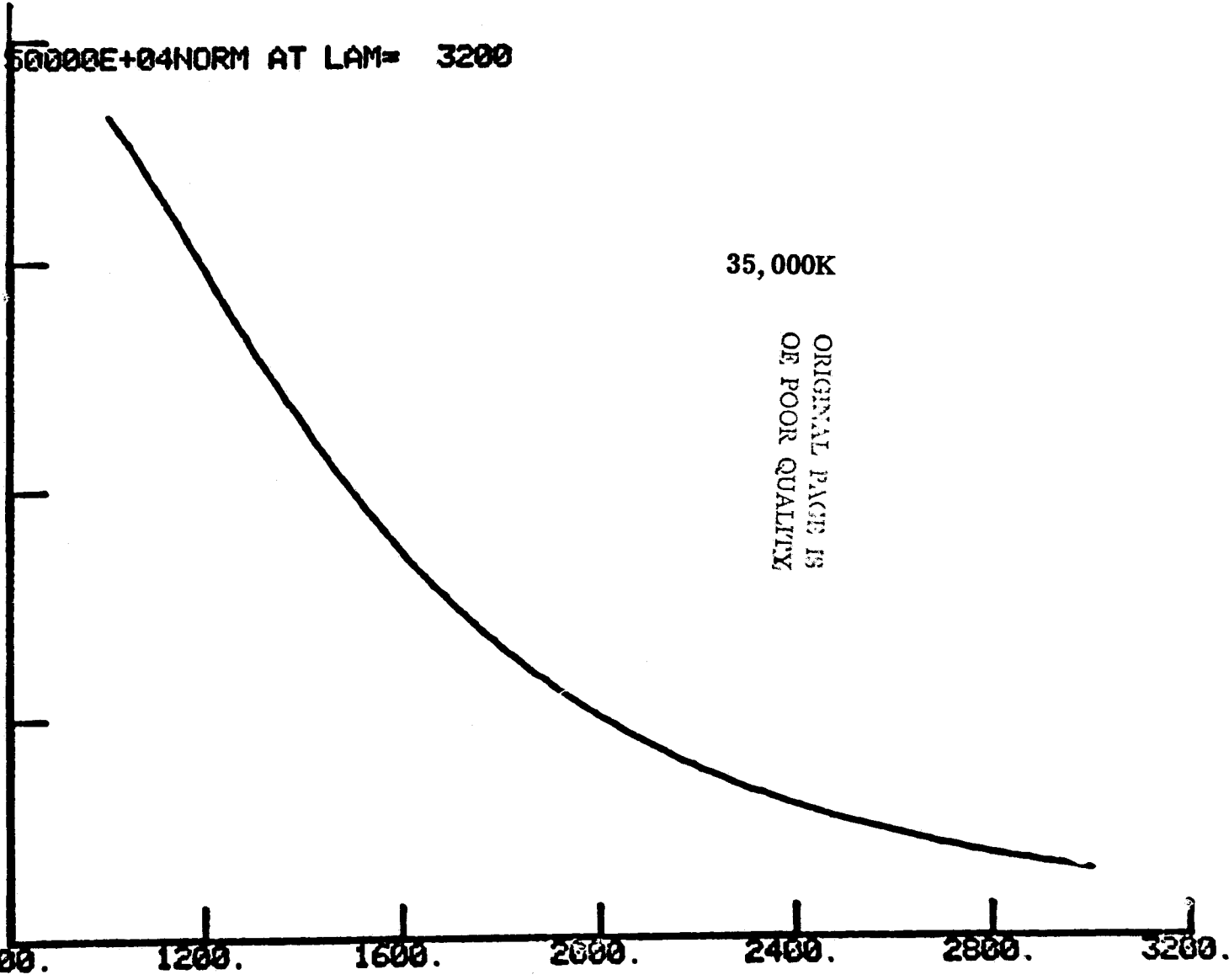
1600.

2000.

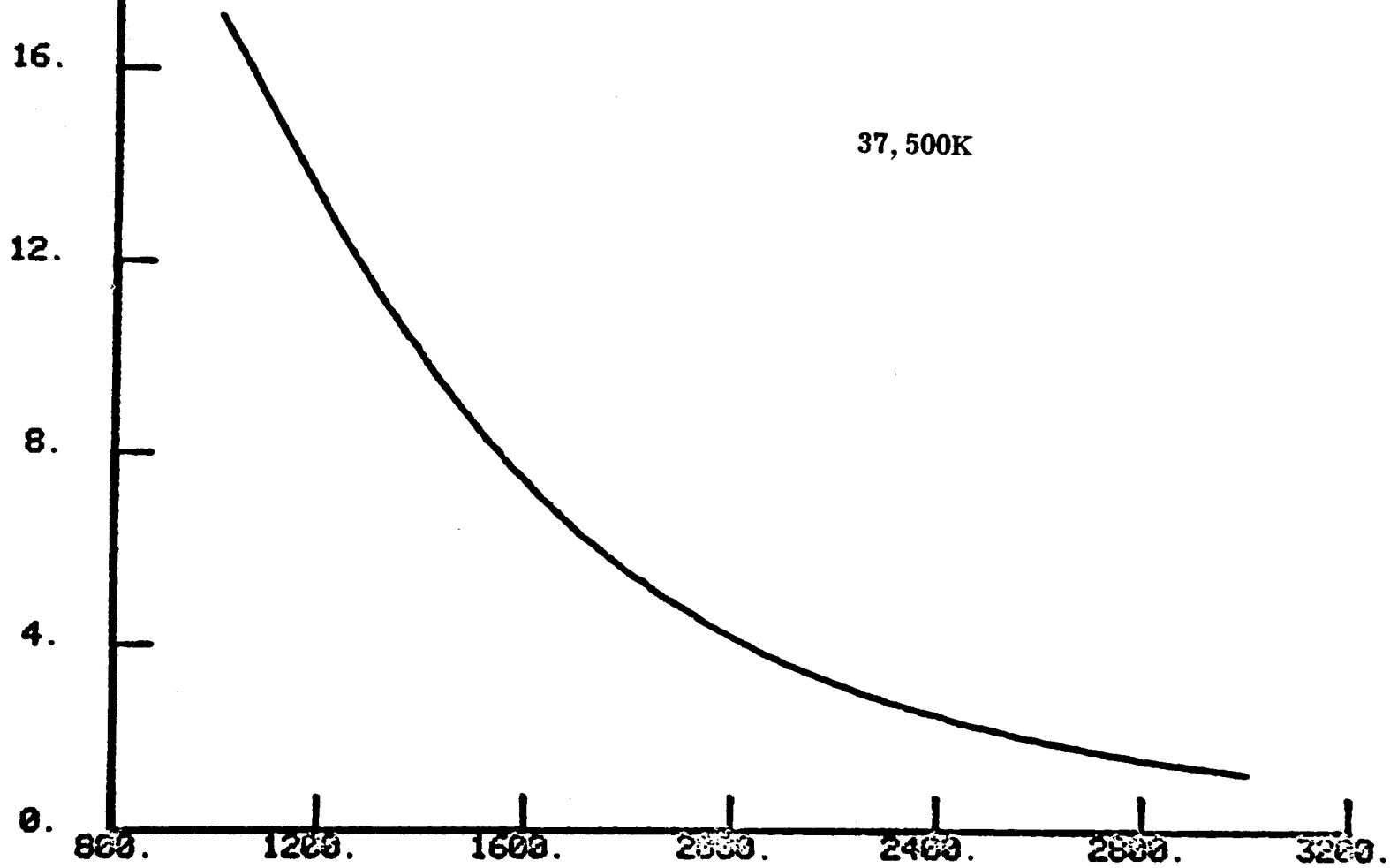
2400.

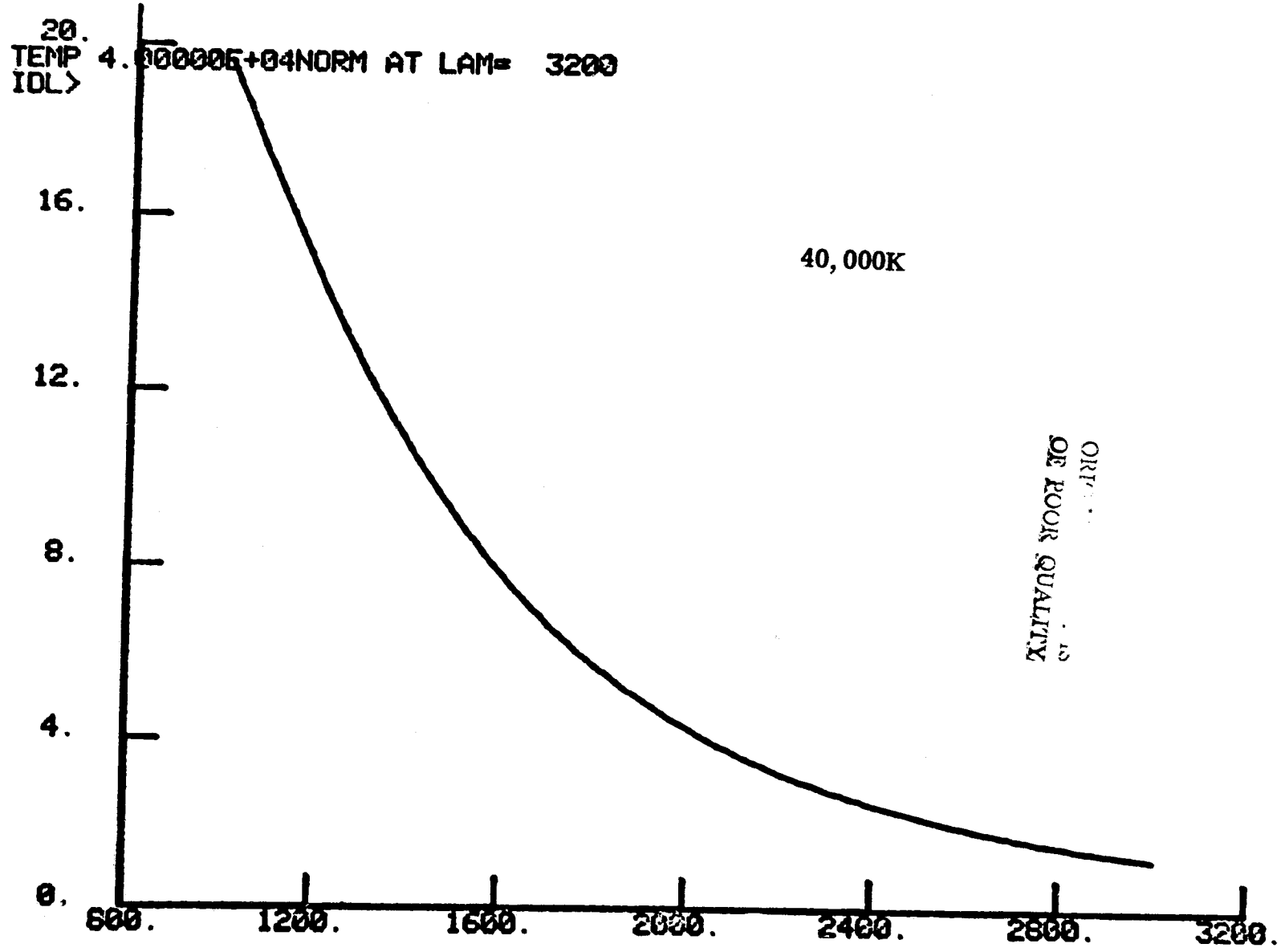
2800.

3200.



20.
TEMP 3. $5000E+04$ NORM AT LAM= 3200
IDL>





40.
TEMP 5.00000E+04NORM AT LAM= 3200
IDL>

30.

50,000K

20.

10.

0.

800.

1200.

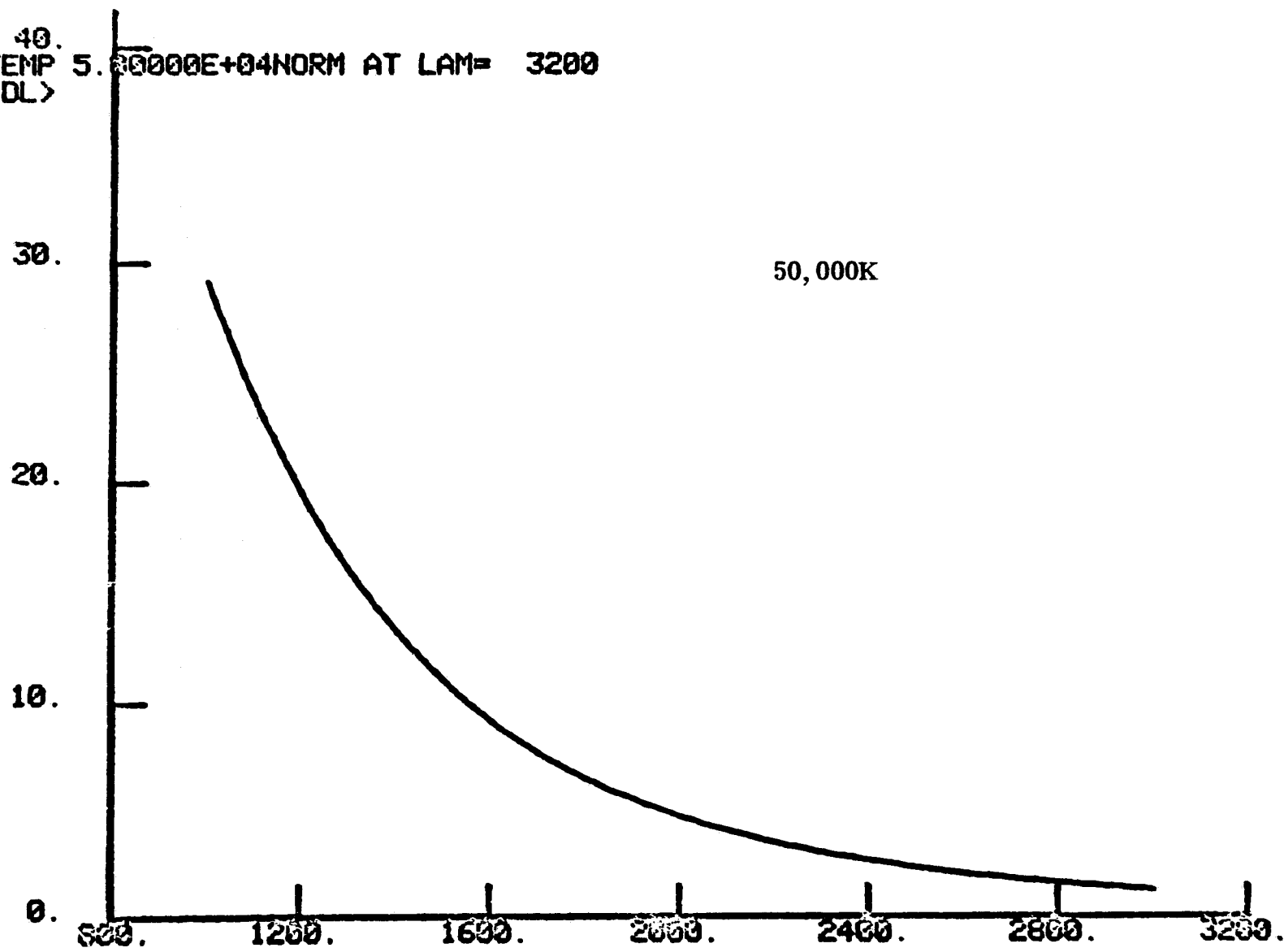
1600.

2000.

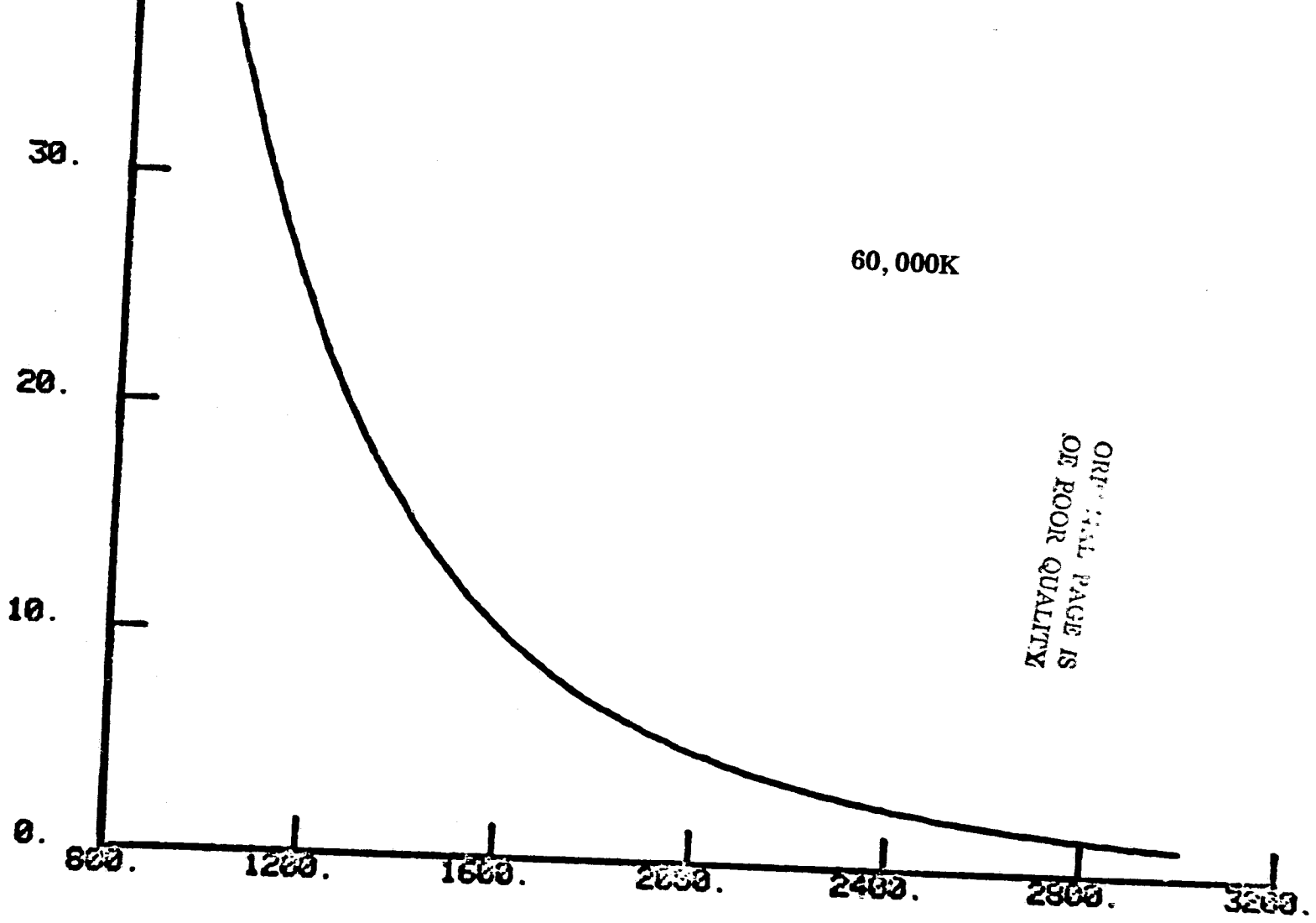
2400.

2800.

3200.

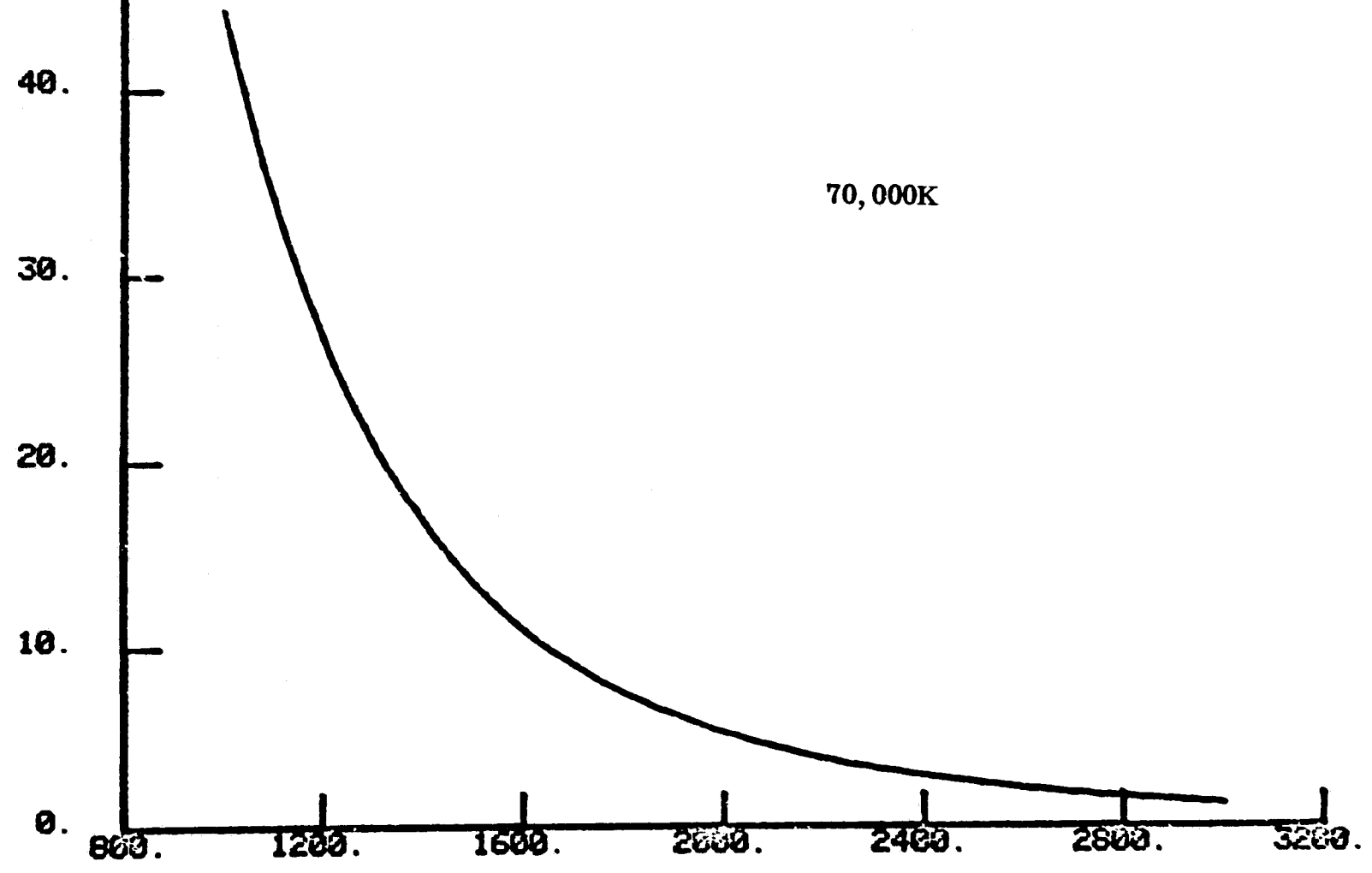


40.
TEMP IDL> 6 00000E+04NORM AT LAM= 3200

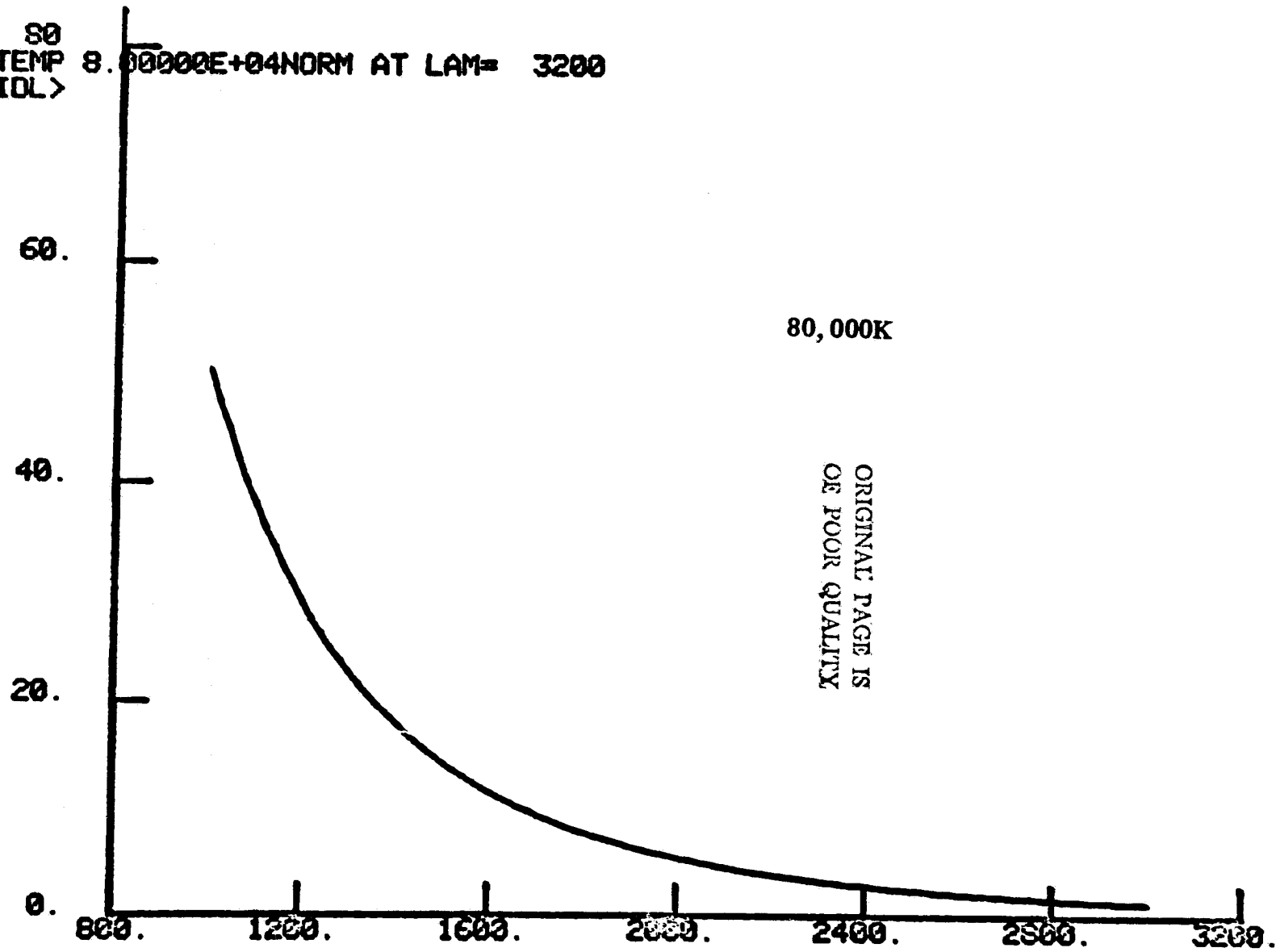


ORIGINAL PAGE IS
OF POOR QUALITY

50.
TEMP 7.00000E+04 NORM AT LAM= 3200
IDL>



S0
TEMP 8.00000E+04NORM AT LAM= 3200
IDL>



80.
TEMP 9.00000E+04 NORM AT LAM= 3200
IDL>

60.

40.

20.

0.

800.

1200.

1600.

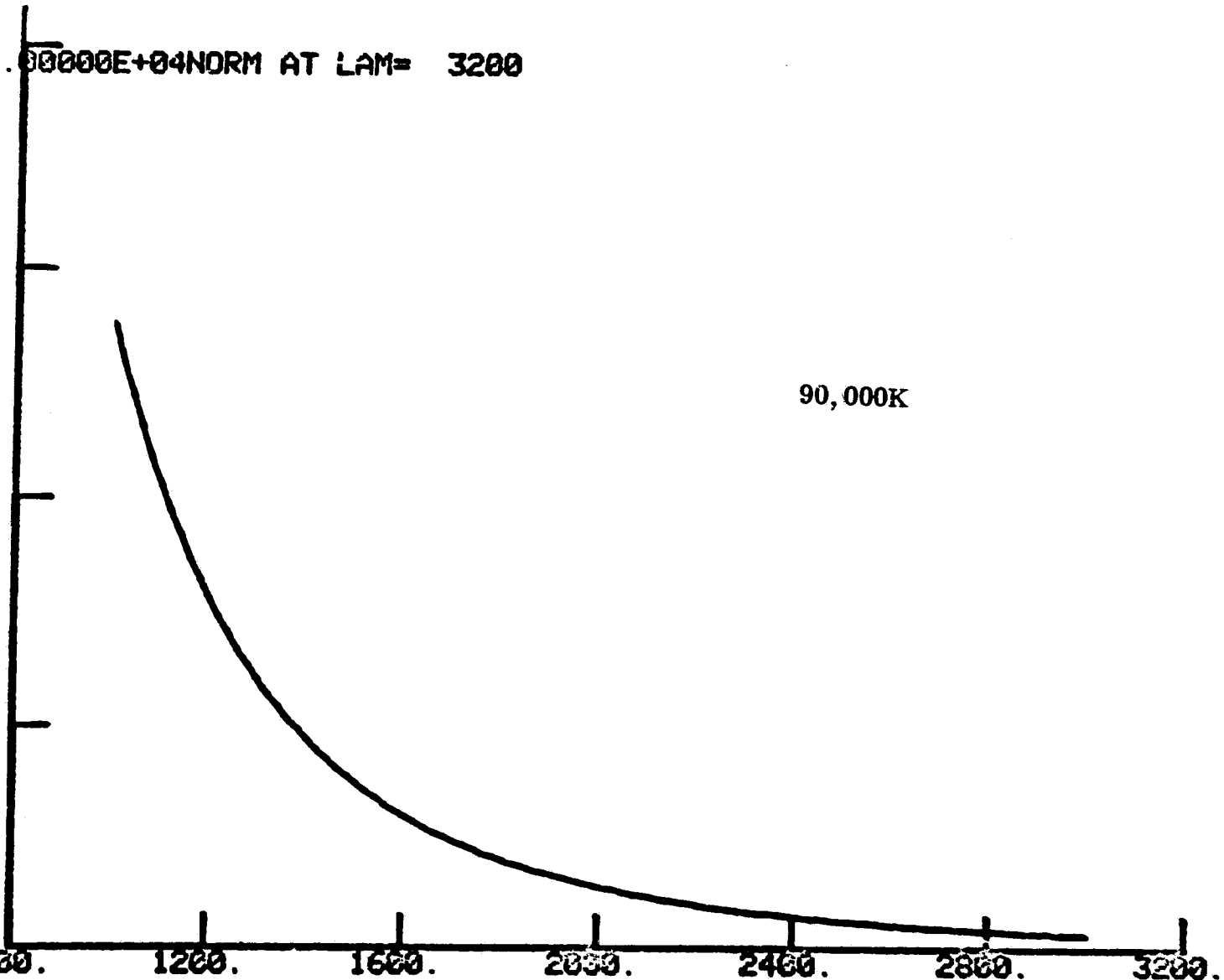
2000.

2400.

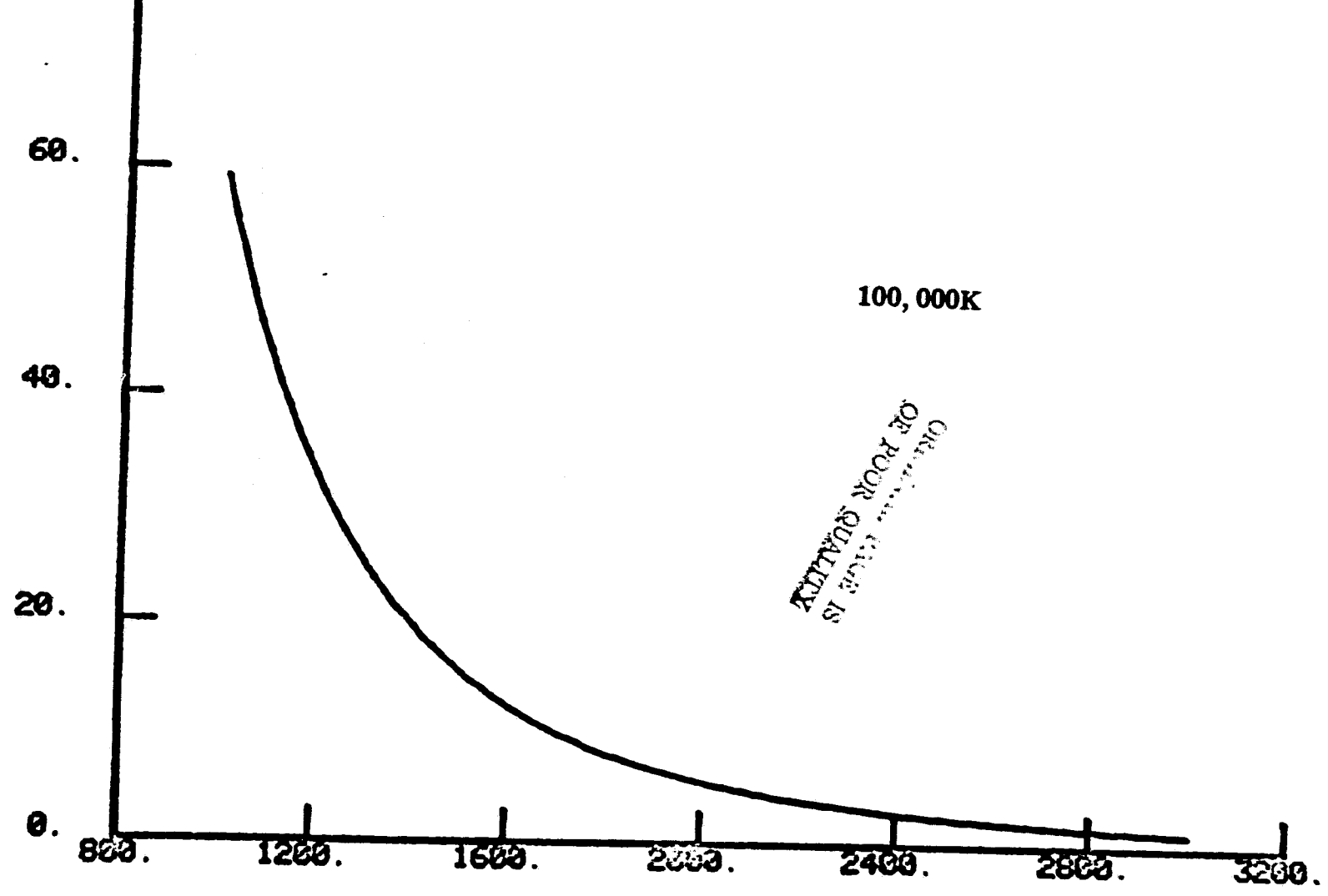
2800.

3200.

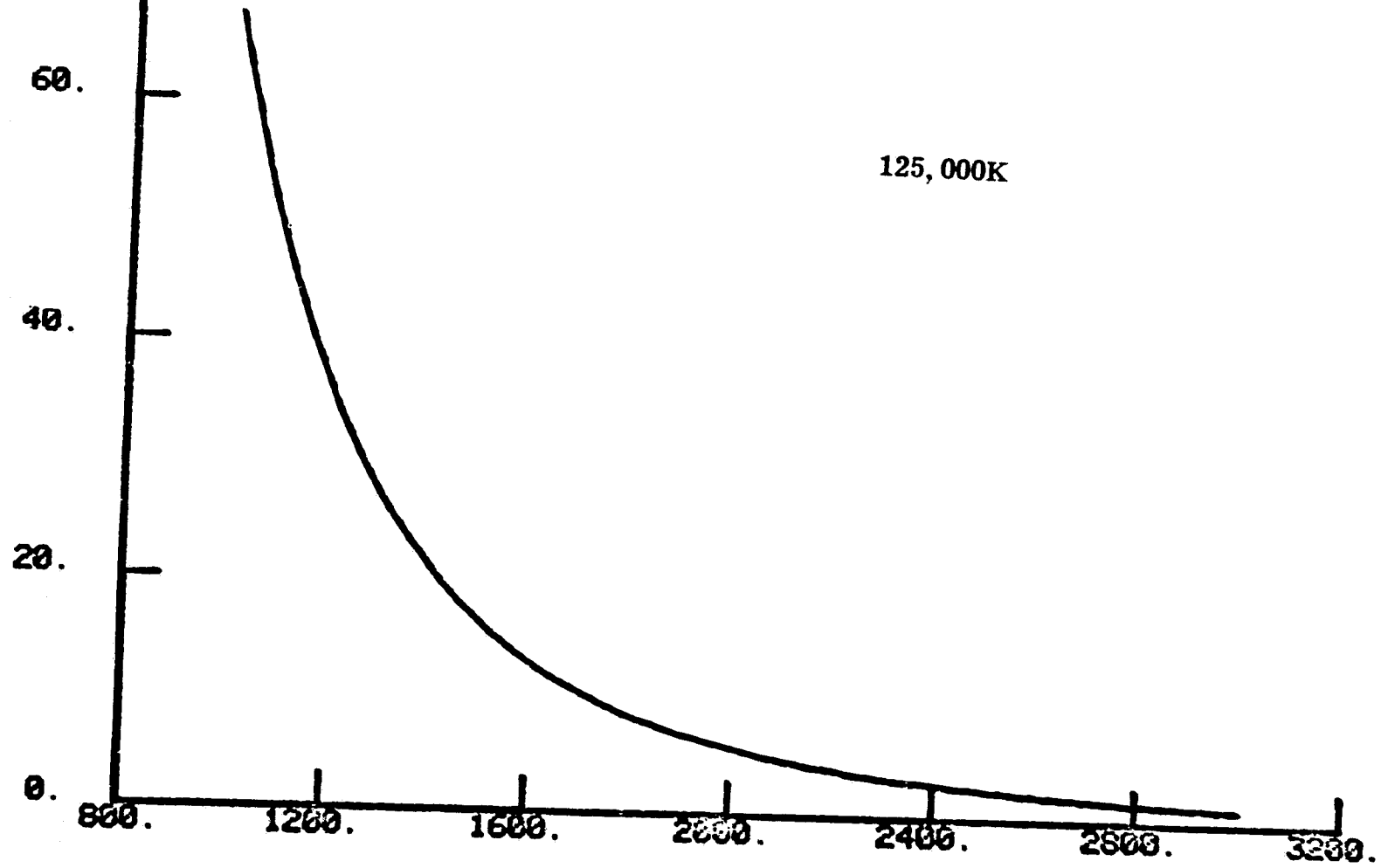
90,000K



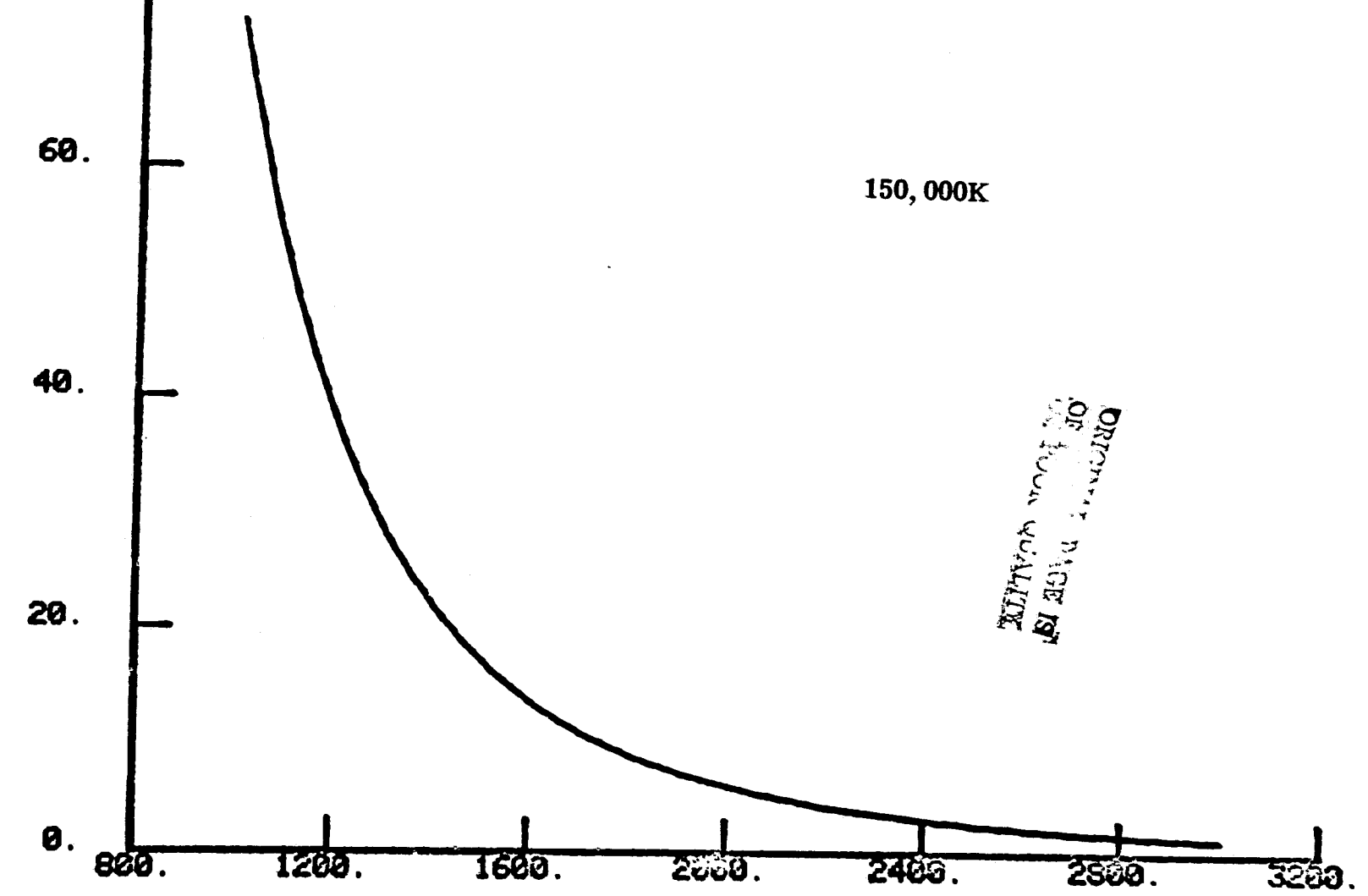
80.
TEMP 1.00000E+05 NORM AT LAM= 3200
IDL>



80.
TEMP 1.25000E+05 NORM AT LAM= 3200
IDL>



SO.
TEMP 1.50000E+05 NORM AT LAM= 3200
IDL>



DRIVING FORCE IS
OF FOUR QUANTUM

100
TEMP
IDL>

2.00000E+05NORM AT LAM= 3200

80.

60.

40.

20.

0.

800.

1200.

1600.

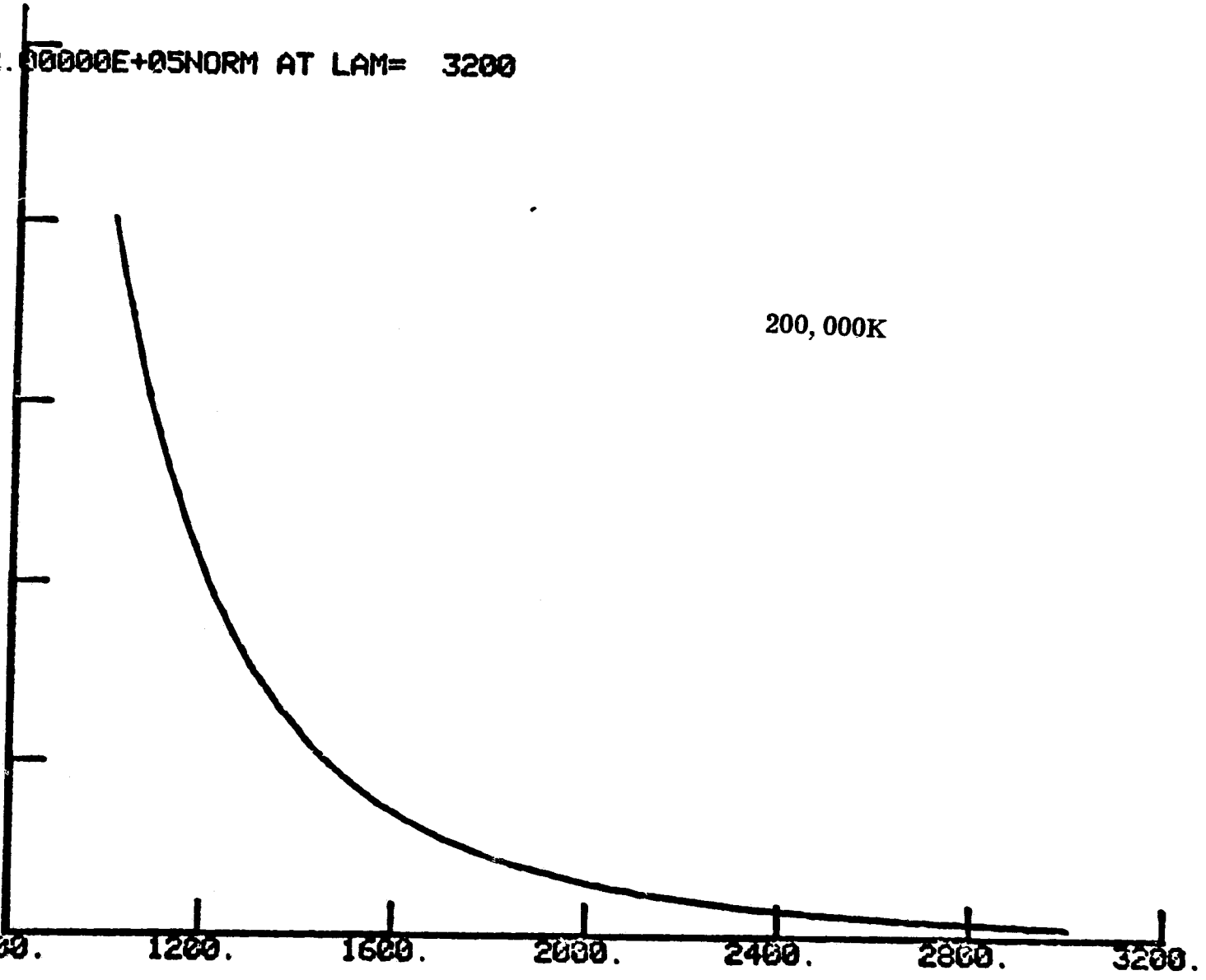
2000.

2400.

2800.

3200.

200,000K



BIBLIOGRAPHIC DATA SHEET

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Blackbody Curves for the IUE Spectral Range 1150 to 3200 from 6,000 to 200,000K		5. Report Date August 1980	
		6. Performing Organization Code 685	
7. Author(s) W. A. Feibelman		8. Performing Organization Report No.	
9. Performing Organization Name and Address Laboratory for Astronomy and Solar Physics Goddard Space Flight Center Greenbelt, Maryland 20771		10. Work Unit No.	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract <p>Two sets of blackbody curves are presented for the wavelength region covering the IUE spectrographs. One set is normalized to unity at 3200A, the other is normalized at 1900A for those astronomers primarily interested in data for the SWP range. The blackbody curves extend from 1150 to 3200A and cover the temperature range from 6,000 to 200,00K.</p>			
17. Key Words (Selected by Author(s)) Blackbody curves; IUE.		18. Distribution Statement	
19. Security Classif. (of this report) unclassified	20. Security Classif. (of this page) unclassified	21. No. of Pages 41	22. Price*