

DATA FOR E.I.A. REGISTRATION

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MULLARD LIMITED,
Mullard House,
Torrington Place,
LONDON, W.C.1.,
England.

JEDEC Type
9RP33
Basing ~~9R~~
12R

CATHODE RAY TUBE TYPE AL22-10

The AL22-10 is an electrostatically focused, magnetically deflected cathode ray tube for radar applications. It has a screen of 9in. diameter.

PHYSICAL SPECIFICATIONS

Base	Duodecal B7-51
Cap	J1-21
Bulb	Glass
Maximum overall length	16 ¹ / ₁₆ " (408mm)
Maximum bulb diameter	9 ¹ / ₁₆ " (230mm)
Screen diameter	7 ⁷ / ₈ " (200mm)

BASING CONNECTIONS

Pin 1 Heater	7 Internally connected
2 Grid 1	8 No pin
3 No pin	9 No pin
4 No pin	10 Grid 2
5 No pin	11 Cathode
6 Grid 4	12 Heater
	Cap Anode

GENERAL ELECTRICAL DATA

Heater voltage	6.3 Volts
Heater current	300 mAmps
Focus	Electrostatic
Deflection	Magnetic
Fluorescence	Orange
Persistence	Long

ELECTRODE CAPACITANCES

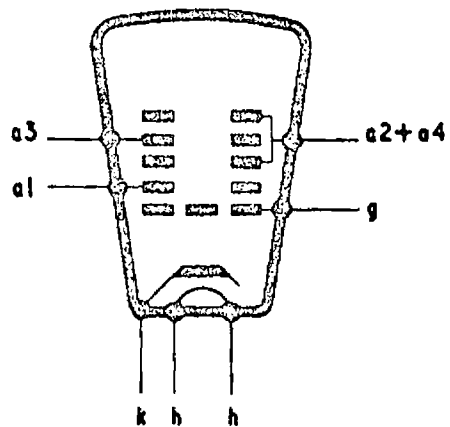
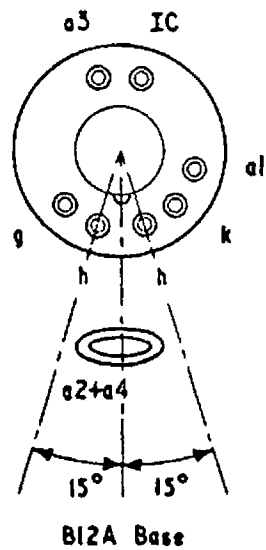
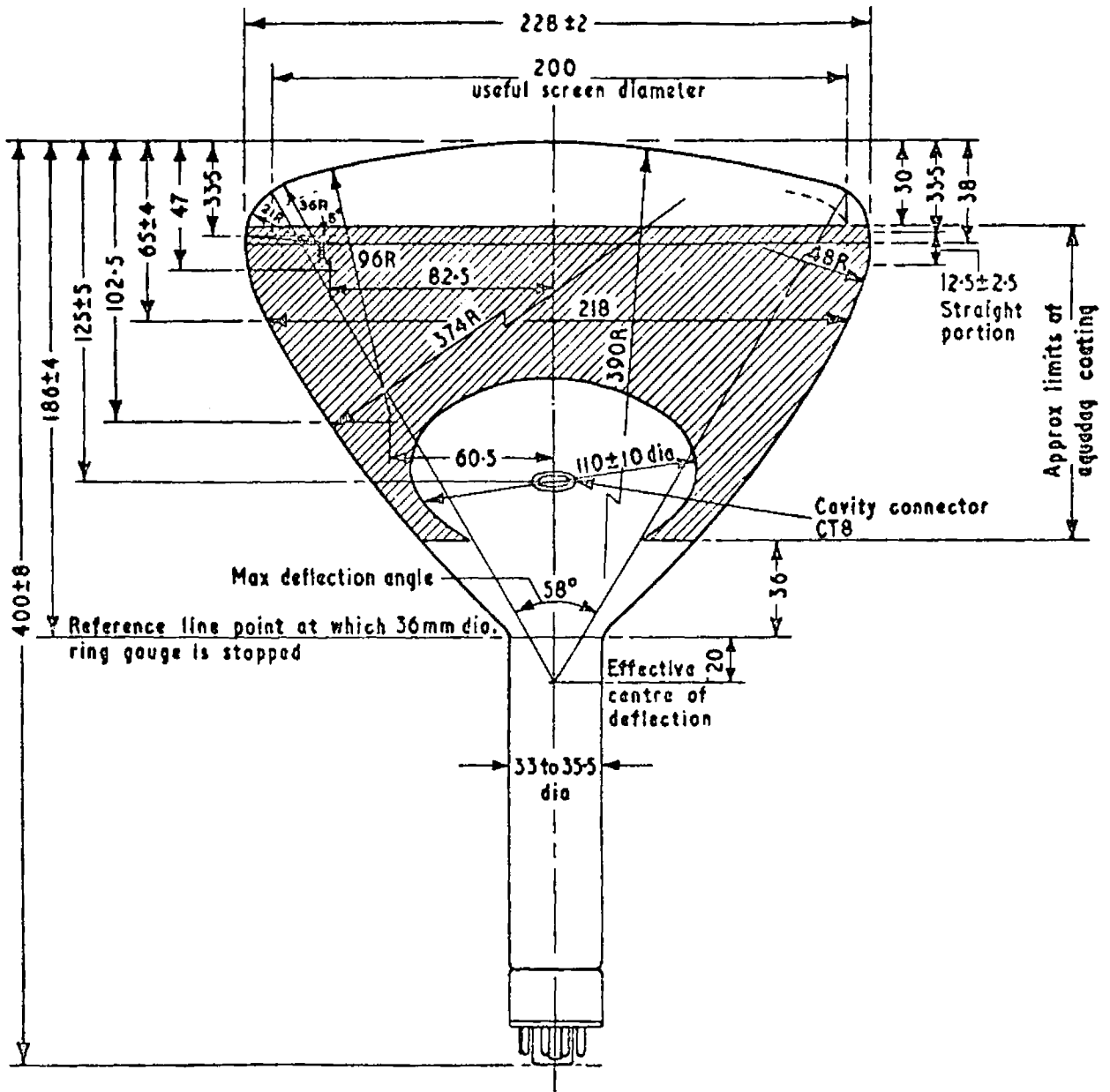
Grid No.1 to all other electrodes	8 max. µF
Cathode to all other electrodes	8 max. µF
Anode to external conductive coating	700 µF

ABSOLUTE MAXIMUM RATINGS

Anode voltage	14 kVolts max.
Anode voltage	8 kVolts min.
Positive grid No.4 voltage	500 Volts max.
Negative grid No.4 voltage	-500 Volts max.
Grid No.2 voltage	500 Volts max.
Grid No.2 voltage	200 Volts min.
Grid No.1 voltage	-200 Volts max.
Grid No.1 voltage	-1 Volt min.
Heater to cathode voltage	±150 Volts.
Grid No.1 resistor	1.5 Mohms max.

TYPICAL OPERATING CONDITIONS

Anode voltage	12 kVolts
Grid No.2 voltage	300 Volts
Grid No.4 voltage	-200 to +200 Volts
Grid No.4 current	-15 to +15 μ Amps
Grid No.1 voltage for cut-off	-30 to -70 Volts



NOTE 1 - P33

A.2 Coordinates in C.I.E. system:

$$X = 0.559, Y = 0.440$$

A.3 Colour: Orange

B.1 The curves provided with the original data are the only ones which can be obtained. This phosphor cannot be used with a stationary or slowly moving spot without permanent damage to the phosphor.

B.2 Persistence: Very long

C. For use in radar tubes

D. Composition: Magnesium fluoride with a manganese activator

NOTE 2 - P32

Coordinates in C.I.E. system:

Yellowish-green component	$X = 0.340, Y = 0.515$
Purplish-blue component	$X = 0.170, Y = 0.124$

Colour: Purplish-blue fluorescence with yellowish-green phosphorescence

Persistence: Long

For use in radar tubes

Composition: cascade screen

Yellowish-green component: Zinc cadmium sulphide
with a copper activator

Purplish-blue component: Calcium magnesium silicate
with a titanium activator

NOTE 3 - P31

A.2 Coordinates in C.I.E. system:

Low brightness	$X = 0.245, Y = 0.523$
High brightness	$X = 0.206, Y = 0.414$

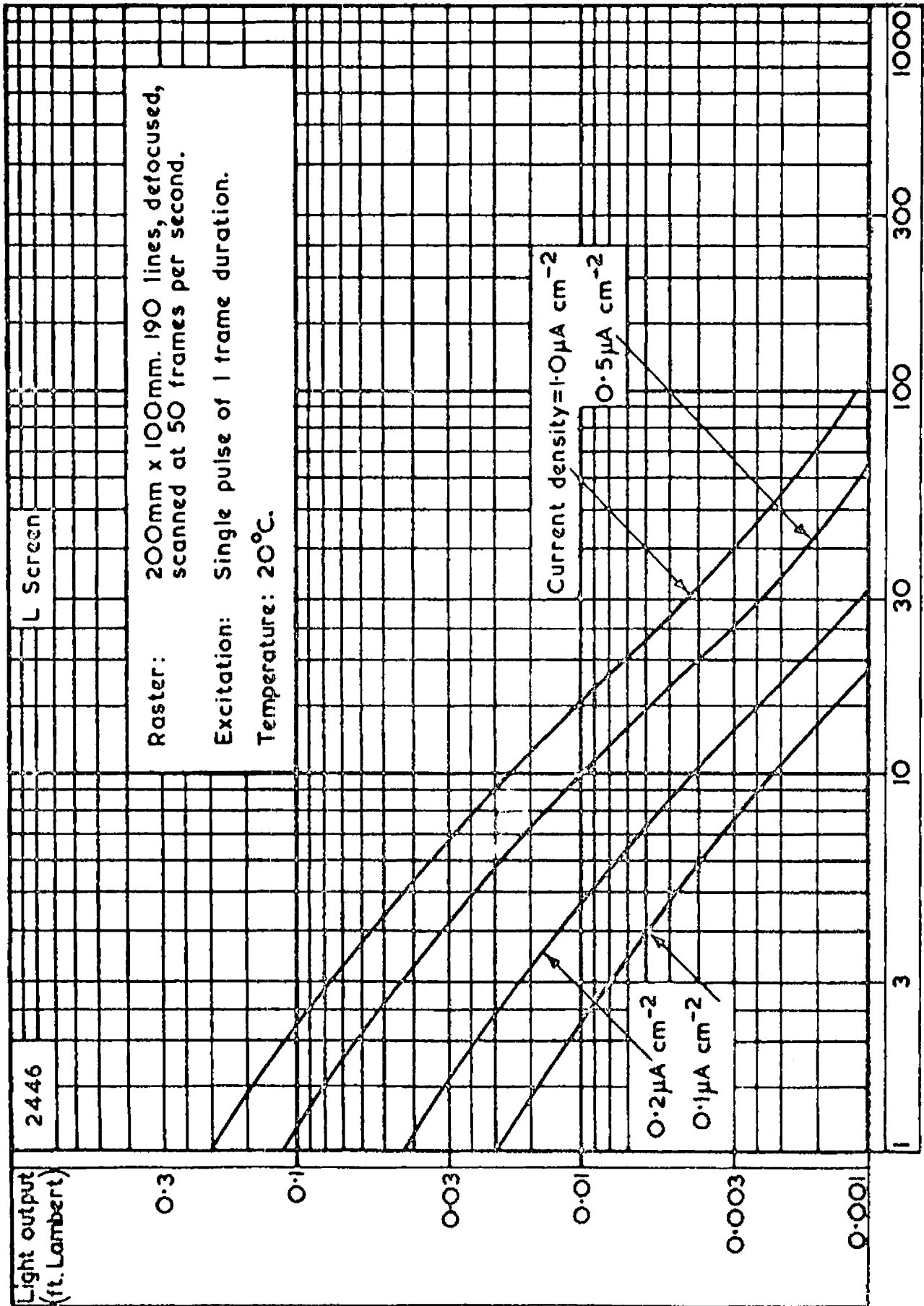
A.3 Colour: Green

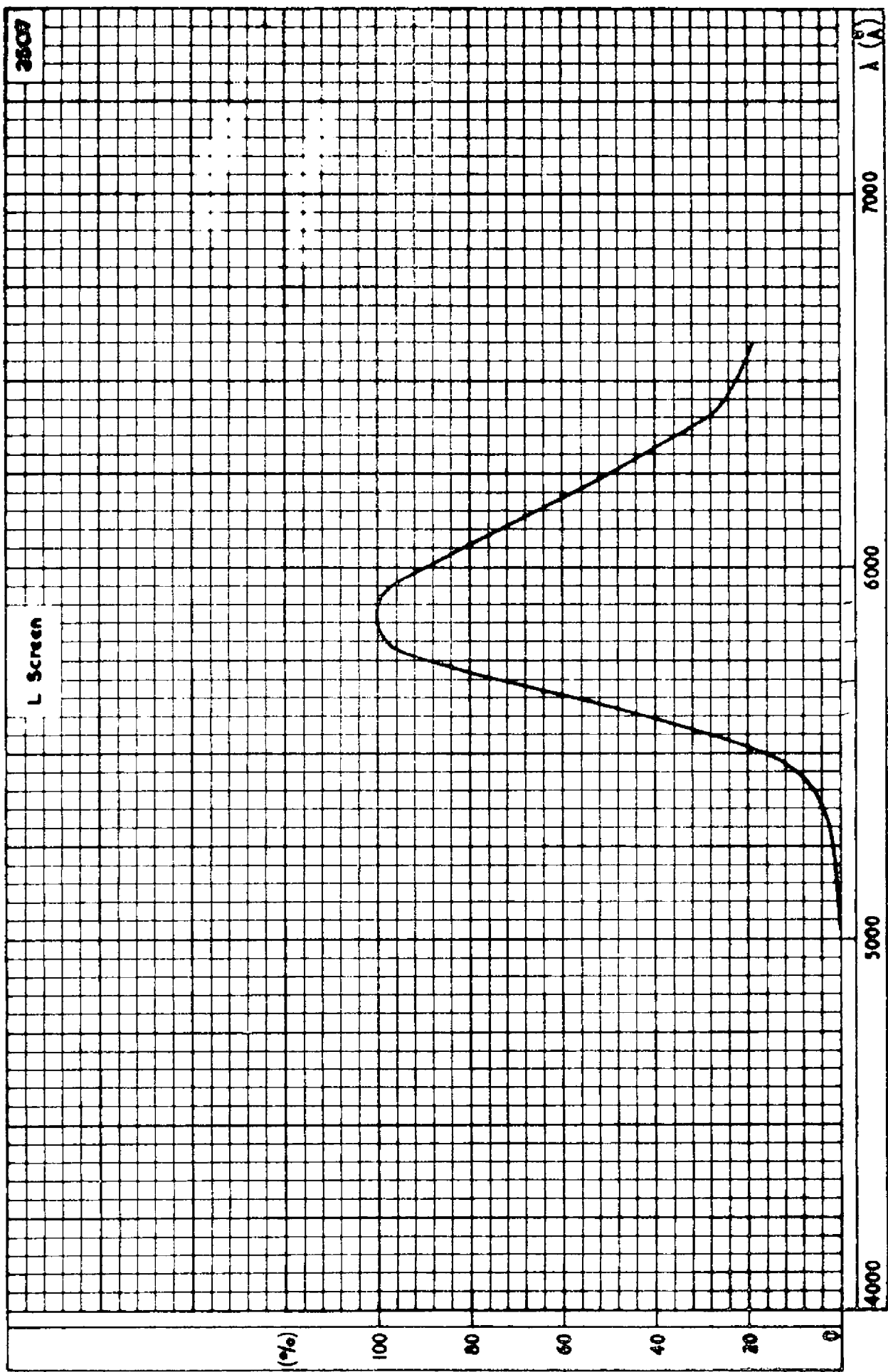
B.2 Persistence: Medium short

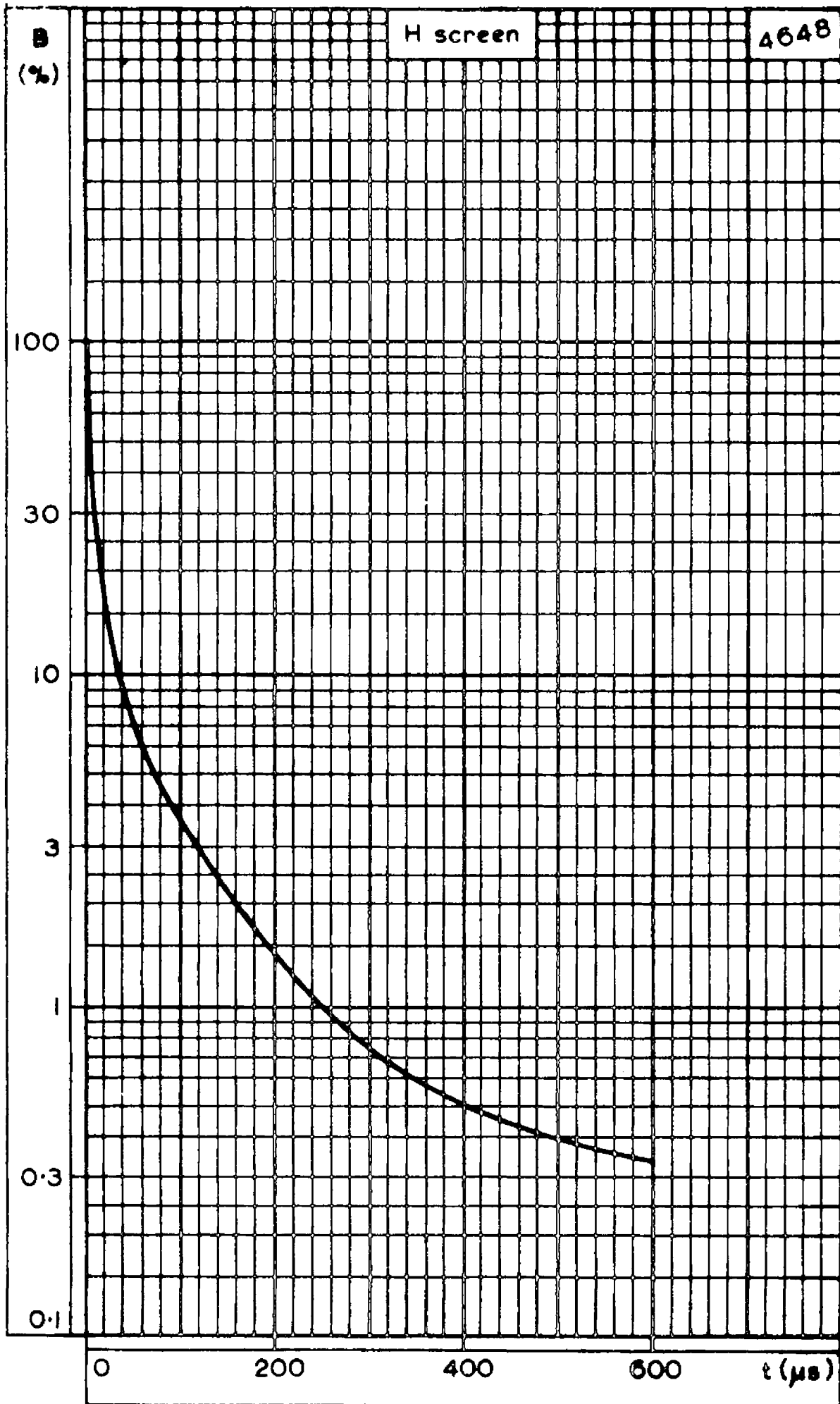
C. For use in oscillograph tubes

D. Composition: Zinc sulphide with a copper activator

Phosphor Designation P33







H screen

(%)

100

80

60

40

20

0

High brilliance

Low brilliance

4000

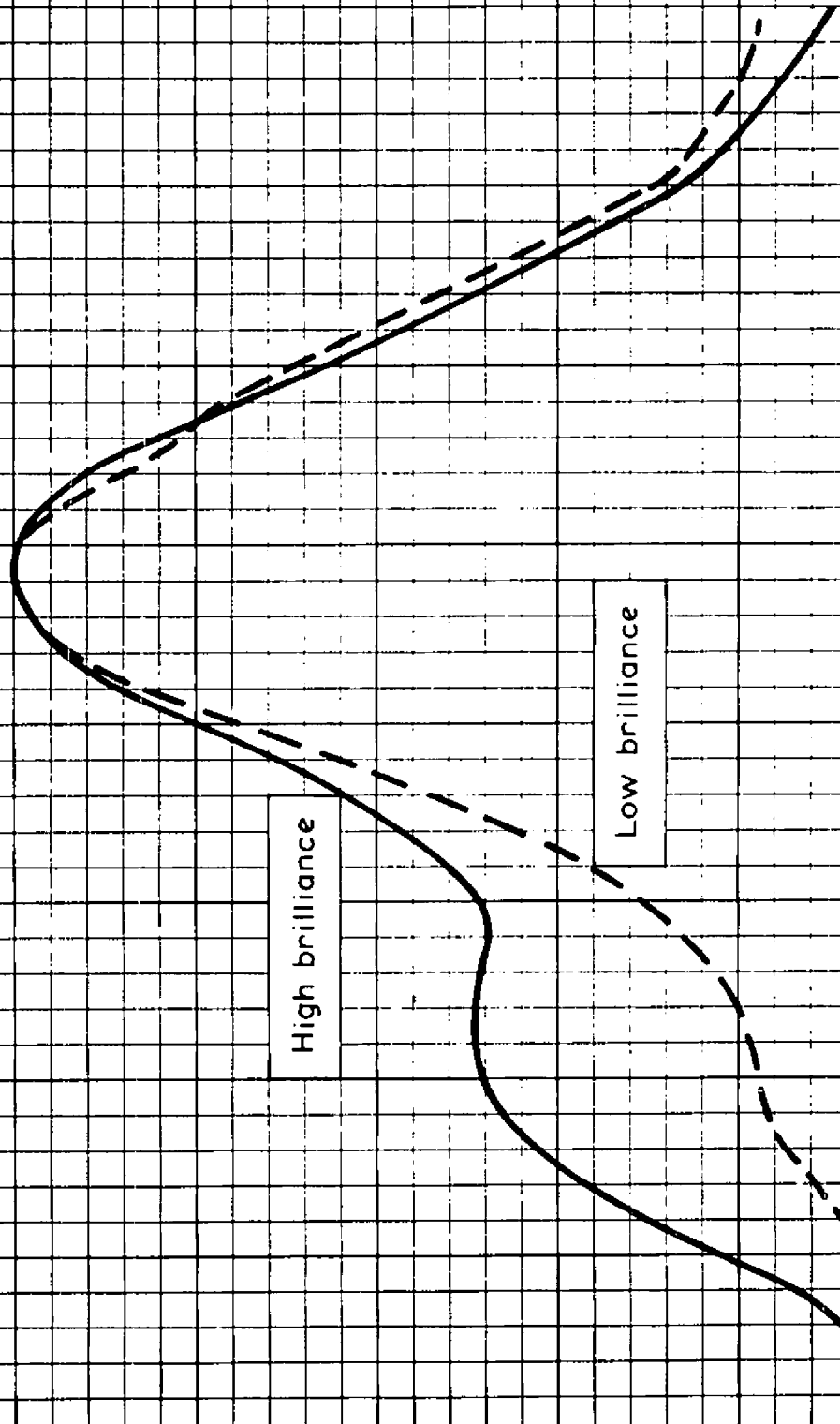
4500

5000

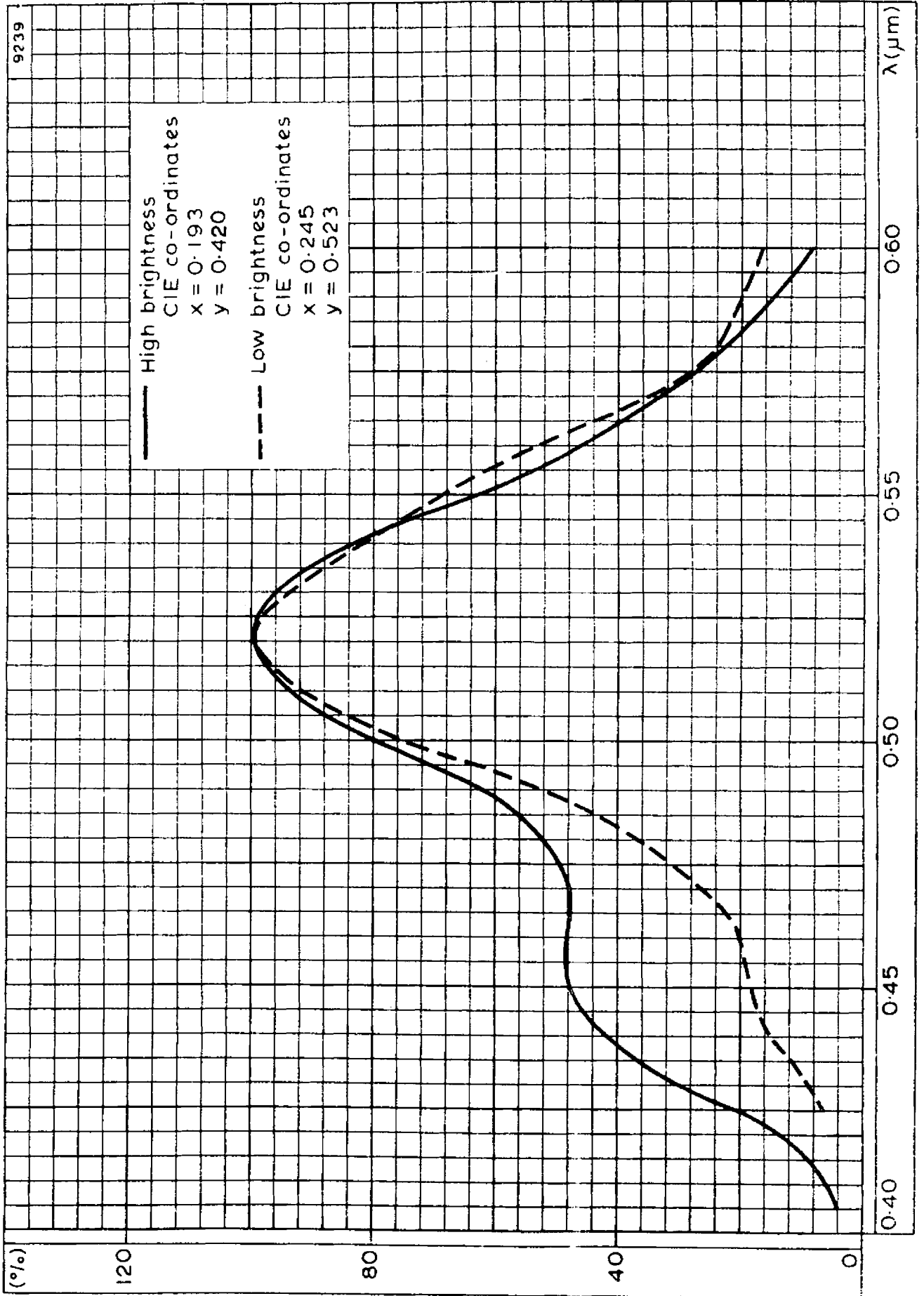
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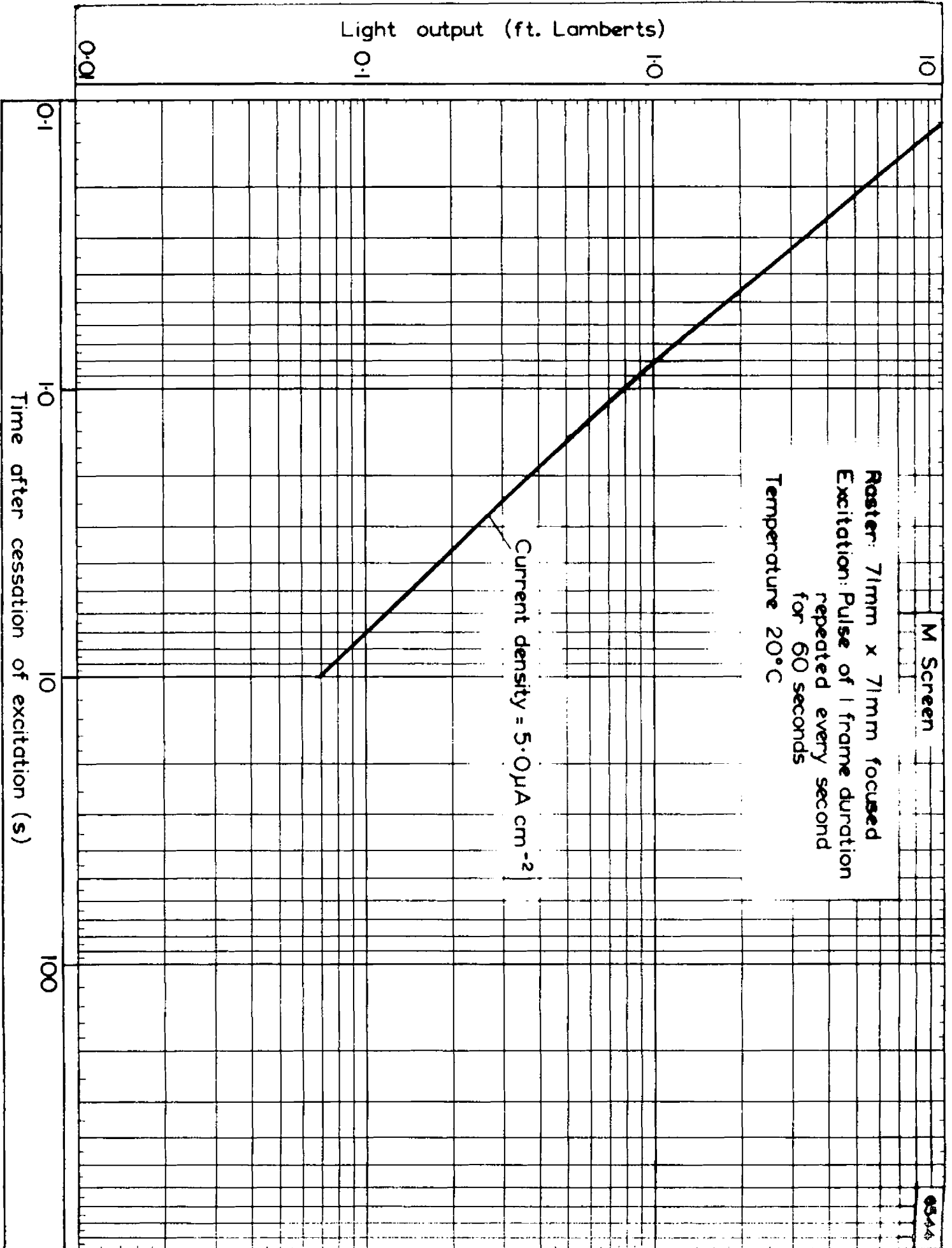
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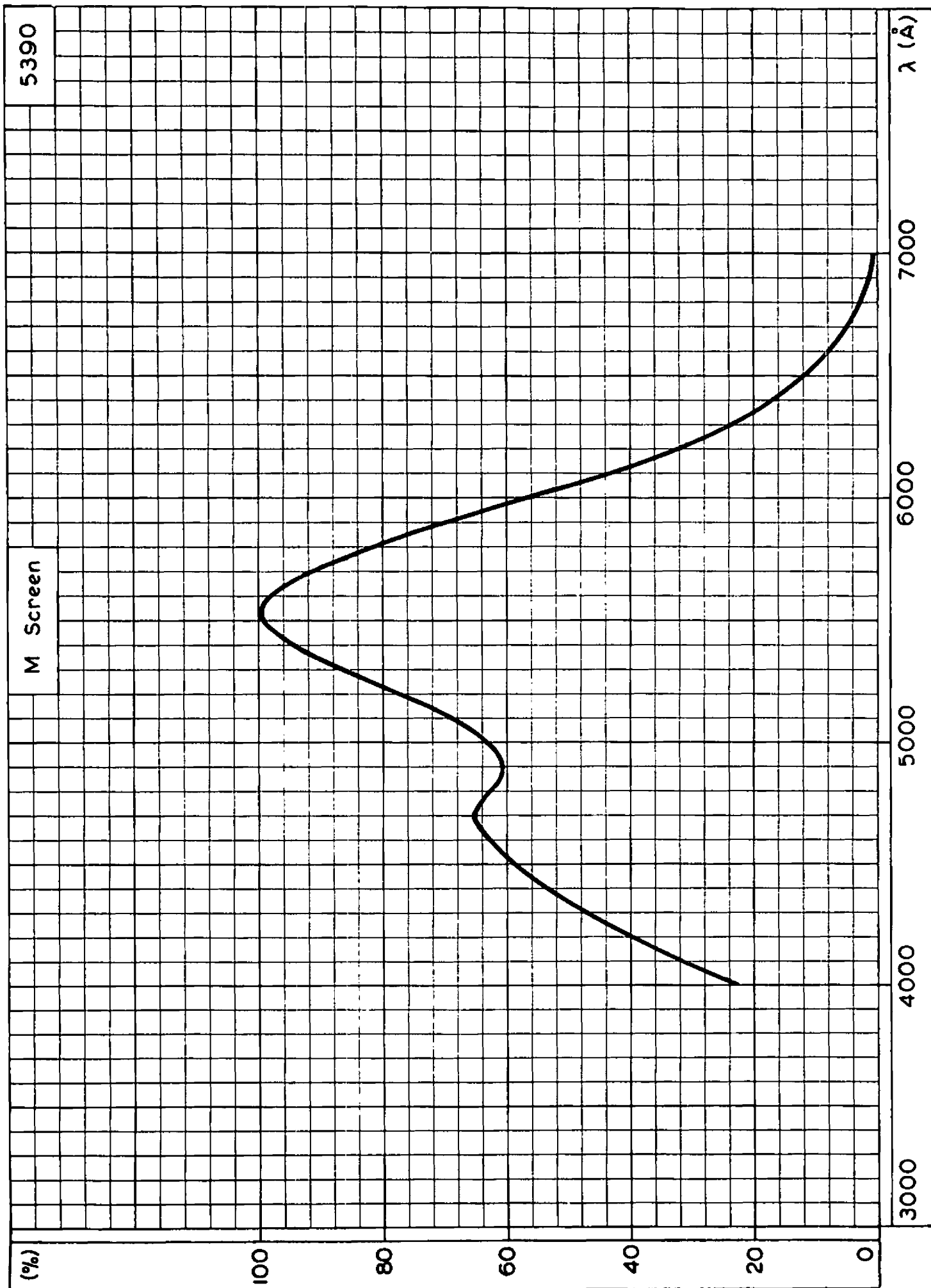
λ (Å)



F31







5390

M Screen

(%)

100

80

60

40

20

0

3000

4000

5000

6000

7000

λ (Å)