VALVE ELECTRONIC

UNITED KINGDOM ATOMIC ENERGY AUTHORITY (A.E.R.E.)

CV2316 *
CV2317

Specification D.At.En/CV.2316/2317 Issue 5, dated 16th September, 1965. To be read in conjunction with K.1001	SECURITY	
	Specification Unclassified	Valve Unclassified

→ Indicates a change

TYPE OF VALVE: Electron Multiplier Photocell

ENVELOPE: Glass

PROTOTYPE: E.M.I. TYPE 6097B

MARKING
See K.1001/4.1

BASE
B15B

		Note
Max. safe interstage potential (V)	200	A
Max. voltage between anode and D.11 (V)	300	A
Max. voltage between cathode and D.1 (V)	300	A
Max. safe D.C. (or average) collector current (mA)	1	B
Max. operating D.C. (or average) collector current (mA)	0.1	C
Max. ambient temperature (°C)	70	D
Nominal overall current gain	10^7	E
Max. output current linear with respect to light input within 10% (mA)	1	E&F

CONNECTIONS

Pin	Electrode
1	Dynode 5
2	Dynode 7
3	Dynode 9
4	Dynode 11
5	Internally connected
6	Collector anode
7	Internally connected
8	Dynode 10
9	Dynode 8
10	Dynode 6
11	Dynode 4
12	Dynode 2
13	Photocathode
14	Dynode 1
15	Dynode 3

DIMENSIONS
See Drawing Page 3

NOTES

A. A protective load resistance of at least 10 K is recommended on each electrode.

B. By "safe" is meant that which will not cause permanent change or damage to the tube. Tube should not be exposed to room light when operating potentials are applied.

C. This is the maximum current advised for reliable and repeatable measurements free from errors due to fatigue, etc.

→ D. This is limit above which permanent damage may occur. Dark current roughly doubles for each 10°C rise of temperature.

E. At 160 V/Stage.

F. This can be increased by increasing volts progressively on all stages.

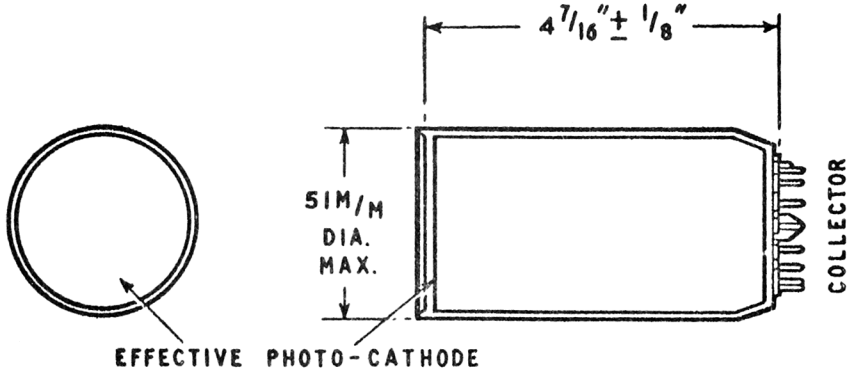
* CV2316 and 2317 are Mechanically identical. CV2317 is selected electrically to a less stringent specification.

TESTS

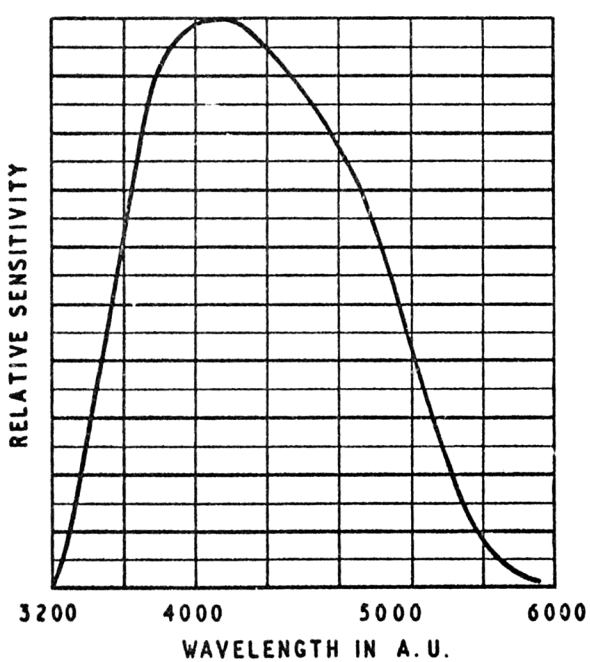
	Test Conditions	Test	Max.	Min.	No. Tested	Note
a		CAPACITANCES pF Collector to all electrodes	10		T.A.	
b	300 V. between cathode and all other electrodes tied together. Light flux 0.01 Lumens	Photocathode sensitivity µA/lumen		40 (CV2316) 10 (CV2317)	100% 100%	1.2
c	150 V. between Cathode and D1. Equal voltages between all other stages. Known low intensity light flux	Overall volts to obtain at the Collector a sensitivity of 200 A/lumen (CV2316)	1750	~~445~~ 1150	100%	3
		30 A/lumen (CV2317)	1500	750	100%	
d	Equal voltages between all stages to give sensitivity of	Anode Dark current µA				4
	200 A/lumen (CV2316)		0.05		100%	
	30A/lumen (CV2317)		0.03		100%	
E	Equal voltages between all stages to give sensitivity of 2000 A/L (CV 2316 only)	Anode Dark current µA	2.0		100%	4

NOTES

1. Light flux incident on not less than 1.1/2" diameter patch nominally at centre of cathode.
2. Tested with standard lamp source at colour temperature 2854°K.
3. Incident on a 1.1/2" diameter patch on the photo-cathode. Diffused light of the order of 10^{-7}L or by flying spot.
   Known variable light flux adequate to produce conveniently measured output current.
4. The dark current is measured at room temperature not less than 15°C after up to two hours in dark if required.



TYPICAL EQUAL ENERGY SPECTRAL
RESPONSE CURVE OF PHOTO-CATHODE



CV2316/3
~~CV2317~~/5
CV2316/CV2317/5/3 Amdt.1

CV2316/CV2317

Issue No. 5

Amendment No. 1

Page 2. Opposite 200 A/1
Under Minimum Column
Delete: 115
Insert: 1150

Page 3. Delete: "CV2317/3
CV2317/5"

Insert: "CV2316/CV2317/5/3"

JAAS
6/5/66