NUMERAL INDICATOR TUBES

5870S : 5870SF
5870ST : 5870TF
5870L

Display: Digits 0 to 9 and two decimal points

Ultra-long-life tubes intended for d.c. operation and for pulsed current operation with peak cathode current values up to 10mA nominal.

The five types have identical electrical characteristics but differ in minor physical features, referred to in "Mechanical Data" section.

ABSOLUTE RATINGS

		min.		max.	
Anode supply voltage, d.c.	(V)	170		—	
Cathode current		digit	d.p.	digit	d.p.
peak	(mA)	—	—	12	0,9
average	(mA)	2,5	0,1	4,0	0,3
Cathode pre-bias voltage (Note 1)	(V)	60		120	
Ambient temperature					
operating (Note 2)	(°C)	−20		+70	
storage	(°C)	−55		+80	
Altitude	(m)			21 400	
	(ft)			70 000	

CHARACTERISTICS

		min.	nom.	max.
Discharge maintaining voltage				
at I_k=2,5mA (d.p. on)	(V)	135	—	157
at I_k=3,0mA (d.p. on)	(V)	—	145	—
at I_k=4,0mA (d.p. off)	(V)	153	—	180

TYPICAL OPERATING CONDITIONS (Note 3)

Anode supply voltage	(V)	170	200	250
Anode current limiting resistor	(kΩ)	7,5	18	36
Cathode current				
digits (d.p. off)	(mA)	3,0	3,0	3,0
decimal point	(mA)	0,2	0,2	0,2
Decimal point cathode resistor (Note 4)	(kΩ)	150	270	560
Cathode pre-bias voltage	(V)	67	67	67
Luminance, approx.	(cd/m²)	280	280	280

Note 1. Pre-bias voltage is that between the operating and non-operating cathodes. At lower values of pre-bias, current to non-operating cathodes is increased and display legibility will be impaired by background haze: for this reason a minimum pre-bias of 60V is recommended.

Note 2. If a tube is operated with its bulb temperature below 0°C, variation of characteristics will increase and tube life will be shortened. For d.c. operation when large temperature variations occur a high supply voltage and appropriate anode series resistor should be used.

Note 3. To prolong tube life, the discharge should be stepped frequently from one cathode to another. Where a static condition exists, it is desirable to step the discharge at least once in 100 hours: the decimal point may be run continuously.

Note 4. This resistor essential only when no digit cathode is conducting: if a decimal point is never used without a digit cathode, the resistor is not necessary.

Mechanical Data

Dimensions for 5870S and 5870SF

	mm		in.	
A	13,0	max.	0,510	max.
B*	7,62		0,300	
C	34,0	max.	1,330	max.
D	30,5	max.	1,200	max.
E	12,7	max.	0,500	max.
F	15,00		0,590	
G	4,06	min.	0,160	min.
	4,83	max.	0,190	max.
H	5,10		0,200	
J	7,47		0,294	
K*	13,5		0,530	
L	6,48		0,255	
M	24,4	max.	0,960	max.
N	0,46		0,018	
P	2,46		0,097	
Q	2,29		0,090	
R	0,35	min.	0,014	min.
	0,43	max.	0,017	max.
S	6,50		0,256	
T	0,61	max.	0,024	max.
U	3,07	min.	0,121	min.
	3,28	max.	0,129	max.

* luminous size

Metric dimensions derived from original inch dimensions

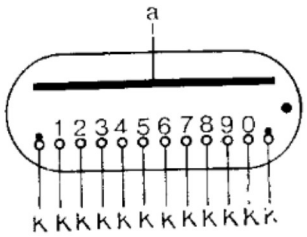
Dimensions of 5870ST, 5870TF and 5870L are as above with following exceptions:

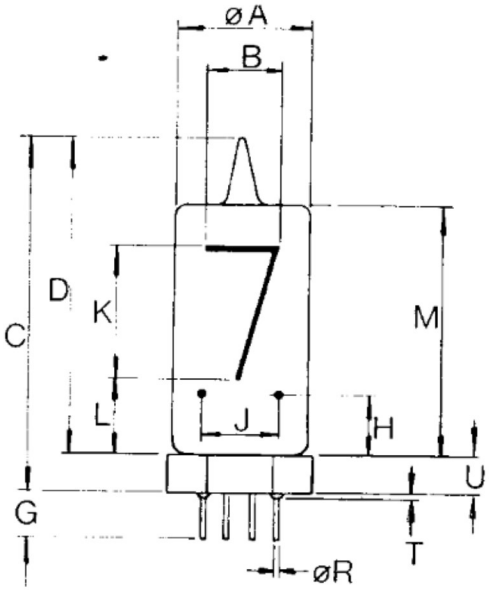
5870ST	U= 5,69mm max.
	C=36,41mm max.
5870TF	G= 7,24mm max.
5870L	G= 34mm max

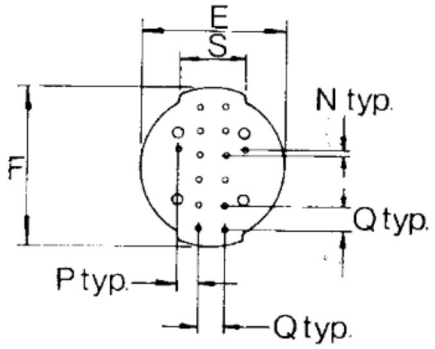
Bulbs
5870S, 5870ST, 5870L—Clear
5870SF, 5870TF—Red-lacquer filter

Tube weight 3,3g

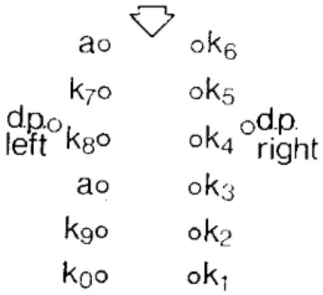
Base 14 leads







Display aperture



Basing–bottom view