

TUNGSRAM 

special lamps



TUNGSRAM LIGHT SOURCES

Incandescent lamps

Fluorescent lamps

High pressure discharge lamps

Vehicle lamps

Photo, cinema and theatre lamps

Special lamps

Xenon lamps

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What TUNGSRAM can offer!

GENERAL REMARKS

In this catalogue light sources for special fields of application are shown; miniature lamps, glow discharge lamps, and such radiating lamps which serve mainly not to produce visible light. Miniature lamps for vehicle lighting are shown in our catalogue under the title "Vehicle lamps".

Dimensions

Dimensions and their marks figuring in our catalogue are in accordance with Systeme International accepted by I.S.O. in 1960 as well as with Hungarian Standard MSZ 0620 based on the above.

Figures

The figures of the lamps indicate the maximum total length and the average bulb diameter.

Validity

The issue of this catalogue supersedes any previous TUNGSRAM miniature, glow discharge, infrared or quartz lamp publications.

When ordering

When ordering customers are requested to give the following information:

- denomination and type number (where the catalogue presents it)
- power or current consumption
- mains supply
- cap type

MINIATURE LAMPS

The construction, power consumption and life of the miniature lamps suit the wide range application of these types of light sources.

Flashlight lamps

cap: E 10/13

Type no.	V	A	life (hour)
2779	2,5	0,1	15
2780	2,5	0,2	15
2781	2,5	0,3	15
2782	3,5	0,2	15
2784	3,8	0,3	15

Packing: 500 pcs

Lens bulb flashlight lamps

cap: E 10/13

Type no.	V	A	life (hour)
2792	2,2	0,18	15
2797	3,0	0,125	5

Packing: 500 pcs

Radio panel lamps

cap: E 10/13

Type no.	V	A	life (hour)
6908	4,0	0,1	1000
6918	4,0	0,3	1000
6865	6,3	0,15	1000
6975	6,3	0,3	1000
6978	6,3	0,5	1000
6969	6,5	0,1	1000
6976	7,0	0,3	1000
6984	12,0	0,1	1000
6995	18,0	0,1	1000
6990	24,0	0,05	1000

Packing: 500 pcs

Radio panel lamps

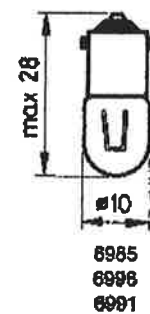
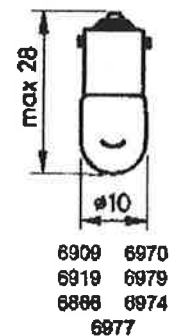
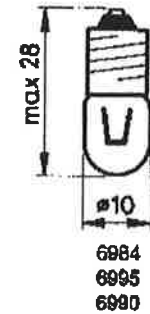
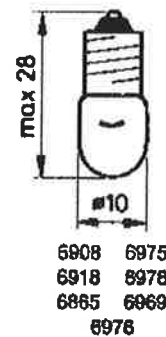
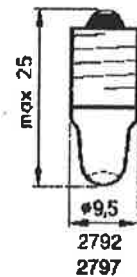
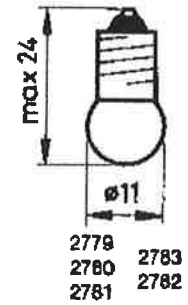
cap: BA 9s/13

Type no.	V	A	life (hour)
6909	4,0	0,1	1000
6919	4,0	0,3	1000
6866	6,3	0,15	1000
6974	6,3	0,3	1000
6979	6,3	0,5	1000
6970	6,5	0,1	1000
6977	7,0	0,3	1000
6985	12,0	0,1	1000
6996	18,0	0,1	1000
6991	24,0	0,05	1000

Packing: 500 pcs

Main fields of application

- flashlight lamps
for dry battery, button accumulator and dynamo operated flashlight
- radio panel lamps
for mains supply, battery and car radio panel lighting as well as for mirror instruments
- subminiature lamps
as signal lamps for semiconductor and measuring instruments as well as for medical instruments i. e. endoscopes etc.

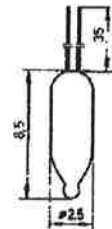


Subminiature lamps

cap: with terminal outlet

Type no.	V	mA	life (hour)
8514	3,5	20	1000
8515	4,0	20	1000
8516	5,0	50	1000
8517	6,0	50	1000

Packing: 25 pcs, small collecting box contains 250 pcs big collecting box contains 3500 pcs



8514 8516
8515 8517

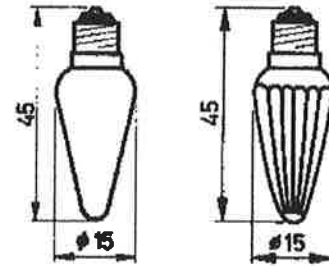
Christmas tree lamps

Christmas tree lamps are available in clear and colour (red, yellow, green and blue) as well as in smooth and grooved bulb.

cap: E 10/13

Type no.	V	W
8011	7	3
8017	14	3
8019	14	3
8026	16-18	3
8028	16-18	3
8036	28-30	3
8038	28-30	3

Packing: 500 pcs



8011 8019
8017 8028
8026 8038
8036

GLOW DISCHARGE LAMPS

Fields of application

TUNGSRAM glow discharge lamps can favourably be applied for marking out purpose as well as for switching and regulating elements in several fields. Glow discharge lamps can eventually ensure at the same time both purposes.

Characteristics

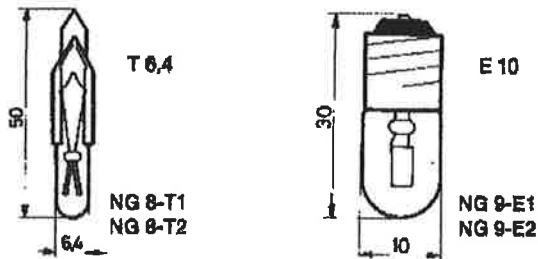
The variety of TUNGSRAM glow discharge lamps is wide both in respect of their construction and geometrical dimensions. They are manufactured both in capped type and with connecting cable. Both types are available with built-in current limiting resistance indispensable for their operation. The current limiting resistance connected in series with the glow discharge lamp - if it is not built-in the lamp or it is not connected

to the wire -- has to be selected in a way that the current flowing to the lamp should not exceed respective limits indicated in the Tables. Exceeding the indicated current limits decreases the life which is however very long if the prescribed maximum current limits are kept. The life of the lamp is not affected by the frequency and number of switches provided that operating current is accordingly ensured. Especially in case of requirements for long life it is advisable to operate the lamps with less current load than maximum limits indicated in the tables.

In case of A. C. supply both electrodes of the glow discharge lamps are covered by glow discharge while in case of D. C. supply only the negative electrode is covered by the same.

TUNGSRAM glow discharge lamps are of high light intensity, economic, characteristic hue, operation- and shock-proof lamps and they will withstand the fluctuation of the supply voltage.

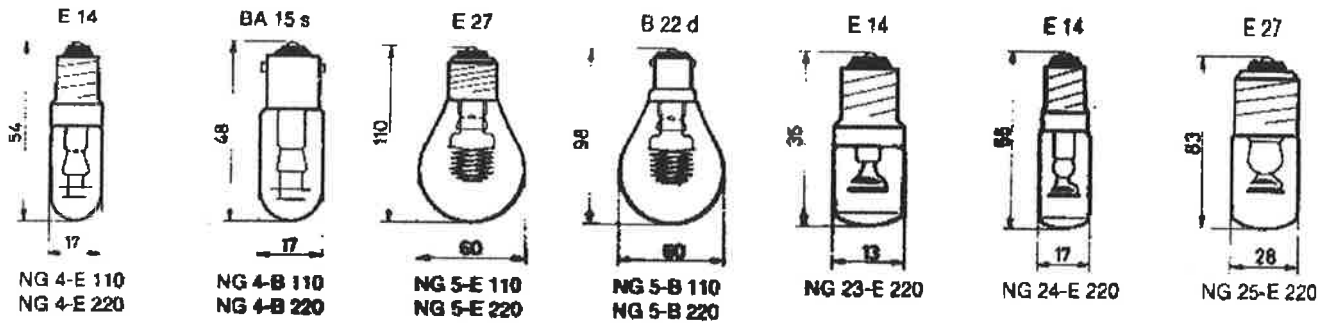
Glow discharge lamps without built-in resistance



Type mark	mains supply (V)	starting voltage (V)	max. current (mA)	value of current limiting resistance (kOhm)
NG 6	220	< 220	0,3	270
NG 8-1	110	< 110	0,2	180
NG 8-2	220	< 160	0,2	390
NG 8-T1	110	< 110	0,2	180
NG 8-T2	220	< 160	0,2	390
NG 9-E1	110	< 110	0,3	150
NG 9-E2	220	< 180	0,3	330

Packing: for NG 9 25 pcs, for all other types 10 pcs; the collecting box contains: 500 pcs

Glow discharge lamps with built-in ballast



Type mark	mains supply (V)	starting voltage (V)	current (mA)
NG 4-E 110	110	< 110	3
NG 4-E 220	220	< 200	3
NG 4-B 110	110	< 110	3
NG 4-B 220	220	< 200	3
NG 5-E 110	110	< 110	3 ●
NG 5-E 220	220	< 200	18
NG 5-B 110	110	< 110	18 ●
NG 5-B 220	220	< 200	18
NG 23-E 220 ¹⁾	220	< 150	2
NG 24-E 220 ²⁾	220	< 150	2 ●
NG 25-E 220 ³⁾	220	< 190	6

Luminance: ¹⁾ 0,12 cd/cm², ²⁾ 1,10 cd/cm², ³⁾ 0,12 cd/cm²

Life: 2000 hours, 3000 hours, 2000 hours

Packing: for NG 5 individual, collecting box contains 25 pcs, for all other types 100 pcs

Decoration glow discharge lamps

By applying these lamps pleasant atmosphere can be ensured both in homes and places of entertainment. Besides varieties shown in the figures – in case of reasonable quantity demand – other varieties can be ordered (i. e. with company emblems, ad-

vertising words). These lamps including built-in lamps in the socket for high signal light are manufactured with built-in ballast. Therefore they can directly be connected to the respective mains supply.

Type mark	colour*	mains supply (V)	power consumption	current (mA)
NG 91-E 27/220	r	200 ... 240	2,5	14
NG 91-B 22/220	r	200 ... 240	2,5	14
NG 92-E 27/220	g	200 ... 240	3,0	16 ●
NG 93-E 27/220	r	200 ... 240	1,5	8 ●
NG 93-B 22/220	r	200 ... 240	1,5	8
NG 94-E 27/220	r	200 ... 240	2,5	10 ●
NG 94-E 27/110	r	100 ... 120	1,5	10
NG 94-B 22/220	r	200 ... 240	2,5	10
NG 94-B 22/110	r	100 ... 120	1,5	10
NG 94-E 14/220	r	200 ... 240	2,5	10 ●
NG 94-E 14/110	r	100 ... 120	1,5	10
NG 95-E 27/220	g	200 ... 240	2,0	8 ●
NG 95-B 22/220	g	200 ... 240	2,0	8
NG 96-E 27/220	r	200 ... 240	2,0	8 ●
NG 96-B 22/220	r	200 ... 240	2,0	8
NG 96-E 14/220	r	200 ... 240	2,0	8
820-P	r	200 ... 240	2,0	2

* r = red, g = green

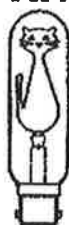
Packing: for 820-P 100 pcs; for all other types 25 pcs

E 27



NG 91-E 27/220

B 22 d



NG 91-B 22/220

E 27



NG 92-E 27/220

E 27



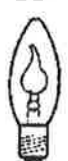
NG 93-E 27/220

B 22 d



NG 93-B 22/220

E 27

NG 94-E 27/220
NG 94-E 27/110

B 22 d

NG 94-B 22/220
NG 94-B 22/110

E 14

NG 94-E 14/220
NG 94-E 14/110

E 27



NG 95-E 27/220

B 22 d



NG 95-B 22/220

E 27



NG 96-E 27/220

B 22



NG 96-B 22/220

E 14



NG 96-E 14/220



820-P

SPECIAL RADIATING LAMPS

Ultraviolet radiating lamps

Lamps type HgV and HMV are manufactured with bulbs absorbing light in the visible range but permitting UV radiation in the range between 310 ... 410 nm. Lamp type HgV 125 can be operated with the ballast for 125 W high pressure mercury vapour lamp. Lamp type HMV 116 requires no ballast.

The 365.5 nm mercury line giving most of the lamp radiation excites several materials to luminesce. This way these lamps are suitable for industrial, and scientific tests and for lighting effects based on luminescence in shop-windows, stages, night clubs and discos etc.



Lamps type HgV 125 and HMV 160

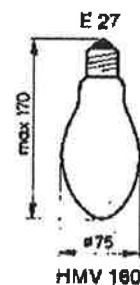
Power consumption (W)	125	160
mains supply (V)	—	220-230
operating current (A)	1,15	0,75
luminous flux (lm)	<math>< 10^{-1}</math>	
burning position	optional	
cap	E 27/30 ¹⁾	

¹⁾ upon special request available with B 22d 25 x 26 cap

Packing: 16 pcs

Radiated energy

Wave length (nm)	energy (W)	
	HgV 125	HMV 160
313,0	0,08	
334,2	0,16	
365,6	2,75	
390,5	0,03	
404,7	0,03	
407,8	0,03	



Infrared lamps

Infrared lamps functioning like inside reflector floodlighting lamps have an ever increasing scope in industry and health treatment.

INFRASEC and INFRASATIN lamps

These lamps serve industrial drying and heating purposes. Their radiation infiltrates without significant loss relatively deeply under the treated surface, thus their drying or heating effects are realized in thicker stratum.

Advantages

- by applying these lamps drying and heating equipment can be established at low expense
- INFRASEC lamps with clear bulb top and INFRASATIN lamps with frosted bulb can be installed as simply as the incandescent lamps. The heat radiation of these lamps is directed by the mirror layed on the inside wall of the bulb therefore they do not require luminaire equipped with heat turning element.
- immediately after turning on they radiate with full heat capacity
- their high heat density makes short treatment periods possible
- they can easily be cleaned

INFRASEC and INFRASATIN lamps

150, 250 W, cap: E 27/30

Type	W	V	Type no.	life (hour)
INFRASEC	150	230	9040	3000
INFRASATIN	250	130, 220 230, 240	9043	3000

Packing: 9 pcs

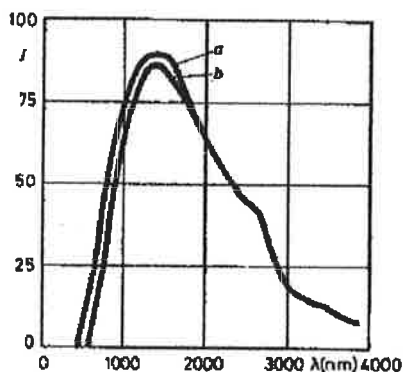
INFRARUBIN lamps

150, 250 W, cap: E 27/30

Type	W	V	Type no.	life (hour)
INFRARUBIN	150	230	9040	3000
	250	130, 220 230, 240	9043	3000

Packing: 9 pcs

Relative spectral distribution of INFRASEC and INFRASATIN (a) and INFRARUBIN (b) lamps



- high radiating capacity
- their radiation can be precisely directed
- distance from the object to be treated - adjusted for the heat requirement of the surface to be treated - can easily be set (see radiation curves)
- they are outstandingly suitable for the surface treatment of materials of poor thermal conductivity
- heat radiation is stopped right after turning off

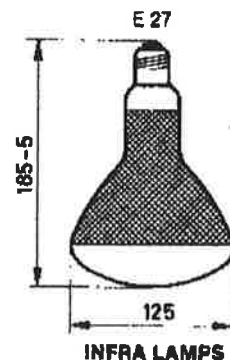
Fields of application

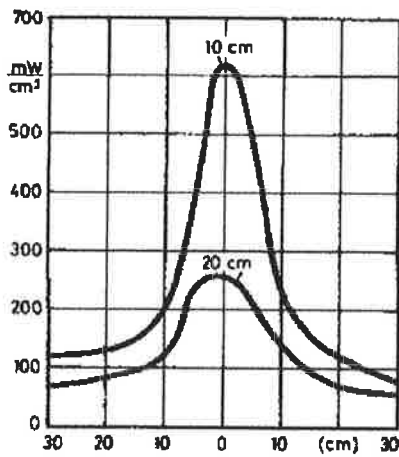
Drying, burning in, heating, distillation, carbonization, vulcanization, softening, melting, evaporation, pasteurizing, polymerization.

INFRARUBIN lamps

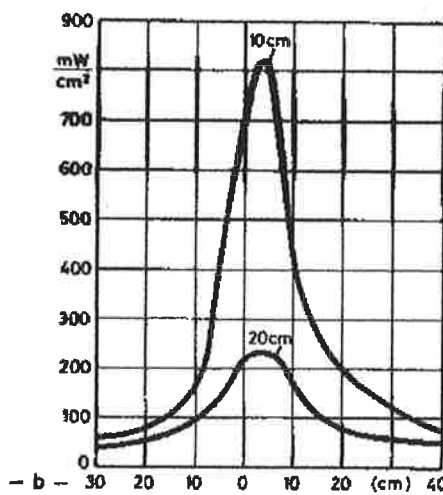
These inside mirror intralamps in ruby colour bulb serve first of all for medical purposes. Their radiation infiltrates even into strata under the skin thus they are applicable for assisting in the cure of rheumatic, and other muscular complaints. When using them doctor's instructions should be given special attention.

INFRARUBIN lamps are applicable for irradiating animals (i. e. for poultry incubators, for heating livestock barn etc.) as well as for quick and effective drying of cereals. Inflammable or heat sensitive materials must not be put within 40 cm distance from the bulb top.

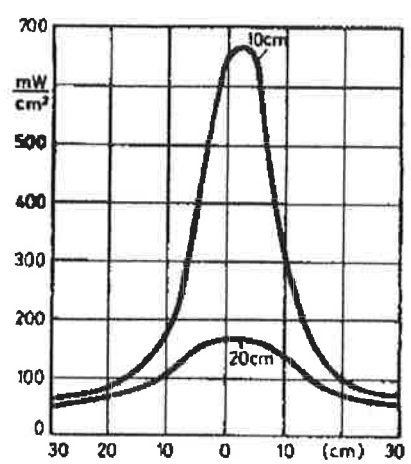




- a -



- b -



- c -

Irradiation

When designing above the irradiation produced by the applied lamp on the surface to be treated and the thermal features of the treated surface must be taken into consideration. In case the latter data is not available the optimum arrangement of the lamps has to be determined by experiments.

Irradiation produced by 220 V/250 W Infralamps measured in function of lateral distance from lamp axis 10 and 20 cm from the bulb top.

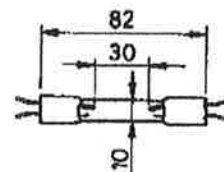
- a - INFRASEC
- b - INFRASATIN
- c - INFRARUBIN

Quartz lamps

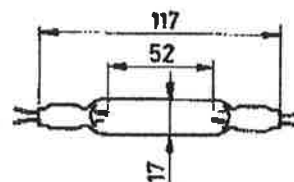
The application of quartz lamps type HgOM ensures ozontree performance suitable for medical purposes.

Their radiation promotes the healthy browning of the skin, the production of vitamine D and in some instances has a beneficial effect on skin complaints. Qualified medical advise must be obtained when using these lamps for this purpose. Their regular use (according to operation instructions attached to the complete lamps available in commercial distribution) is recommended in winter for nurseries kindergartens and households. Their light must not reach the eye.

Quartz lamps type HgO can reasonably applied first as ultraviolet radiation sources for biological, physical, and chemical experiments also for sterilization, ozone production ionization of the air, artificial ageing of plastic materials.



HgOM 125
HgM 125



HgOM 250
HgM 250

125 ... 400 W medical quartz lamps HgOM

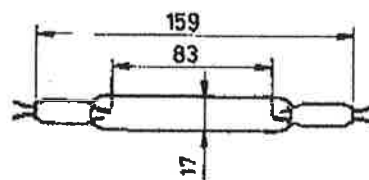
Type mark	HgOM 125	HgOM 250	HgOM 400
power consumption (W)	125	250	400
mains supply (V)	220	220	220
operating current (A)	1,2	2,2	3,5
ballast (ohm)	114	52	37
irradiation in 1 m distance from the lamp (μ W/cm ²)			
UV-A	40	160	300
UV-B	25	90	240
UV-C	4	18	30

Packing: 25 pcs

125 ... 400 W quartz lamps HgO mainly for scientific and industrial purposes

Type mark	HgO 125	HgO 250	HgO 400
power consumption (W)	125	250	400
mains supply (V)	220	220	220
operating current (A)	1,2	2,2	3,5
ballast (ohm)	114	52	37
irradiation in 1 m distance from the cap (μ W/cm ²)			
UV-A	30	110	215
UV-B	25	90	240
UV-C	10	40	70

Packing: 25 pcs



HgO 400
HgM 400

Circuit diagram

- 1 = main supply, 220 V
- 2 = lamp
- 3 = ballast
- 4 = starter resistance, 20 kohm
- 5 = starter resistance, 20 kohm

