

# Infrared heat lamps

# Halogen for industrial process



Tubular, double-ended quartz infrared lamps are high-powered heat sources incorporating a tungsten filament within a quartz envelope. They are of the halogen type, which avoids blackening of the tube and consequently infrared depreciation throughout their whole lifetime. Benefits of these lamps for industrial purposes include high efficiency, fast heat transfer, direct response to power control, compactness and light weight. Depending on their type, these lamps have a horizontal or universal burning position.

### Applications

- Paint drying in tunnels and body shops
- Blowing of PETP bottles
- Plastics thermoforming
- Epitaxy, CVD, RTP, Oxidation processes in semiconductor industry
- Heating of food and keeping it warm
- Paper drying in paper mills
- Drying of lacquer, printing inks
- Pre-heating of wood prior to lacquering
- Heat sterilization
- Softening, melting of plastics.

SK15 clear



R7S clear



U frosted



V clear



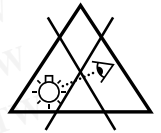
Y clear



CER + lead clear



X clear



Prolonged looking at the lamp during operation may result in damage to the eye.

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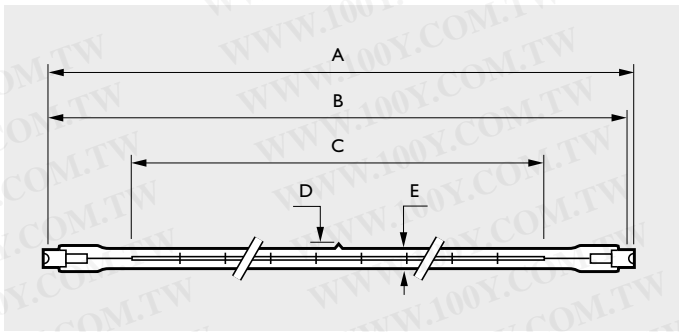


Fig. 1

Type	A max.	B	C	D max.	E max.
<b>Cap/base R7s</b>					
375T3/7	217.6	214.0±1.6	127.0±5.0	0	11
500T3/7	217.6	214.0±1.6	127.0±5.0	0	11
1600T3/7	498.6	494.0±1.6	406.0±5.0	0	11
2500T3/7	730.0	724.0±1.6	635.0±5.0	0	11
13169R	220.6	217.2±1.6	165.0±5.0	5	11
13908R	117.6	114.2±1.6	60.0±5.0	5	11

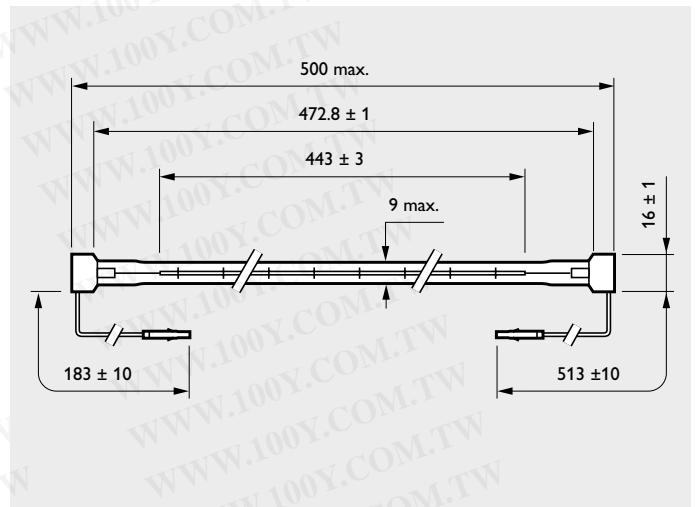


Fig. 2 - 13296C/13298C SK11

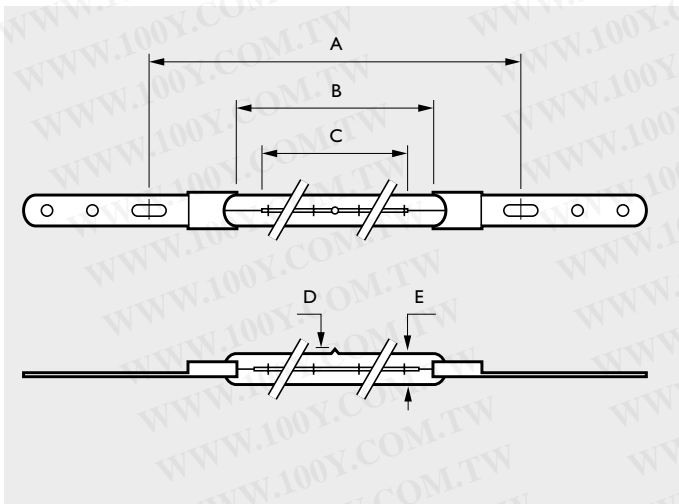


Fig. 3

Type	A	B min.	C	D max.	E max.
<b>Cap/base X</b>					
13168X	370±10	295	280±5	5	11.0
13169X	241±10	165	142±5	0	11.0
13195X	370±10	295	272±5	5	11.0
13230X	798±10	725	700±5	5	11.0
13245X	508±10	435	410±5	0	11.0
13565X	370±10	291	277±5	5	13.5
13713X	370±10	295	272±5	5	11.0
13765X	508±10	435	410±5	5	11.0
13169X/98	241±10	165	142±5	0	11.0
13195X/98	370±10	295	272±5	5	11.0
13230X/98	798±10	725	700±5	5	11.0
13245X/98	508±10	435	410±5	0	11.0
13713X/98	370±10	295	272±5	5	11.0
13765X/98	508±10	435	410±5	5	11.0

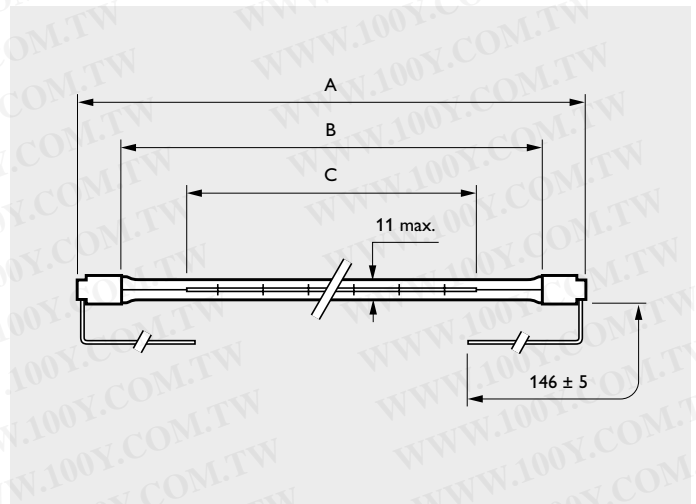


Fig. 4

Dimensions in mm

Type	A max.	B	C
<b>Cap/base U</b>			
2MT3/1CL/HT/UB/O	303.0	265±2	254±5
500T3	223.8	187±2	127±5
1000T3	351.0	313±2	254±5
1600T3	503.0	467±2	406±5
1600T3/CL	503.0	467±2	406±5
2500T3	731.0	694±2	635±5
2500T3/CL	731.0	694±2	635±5
3200T3/CL	1062.0	1025±2	815±5
3800T3	1062.0	1025±2	965±5
3800T3/CL/UB	1062.0	1025±2	965±5
5000T3/1CL/HT	731.0	694±2	635±5

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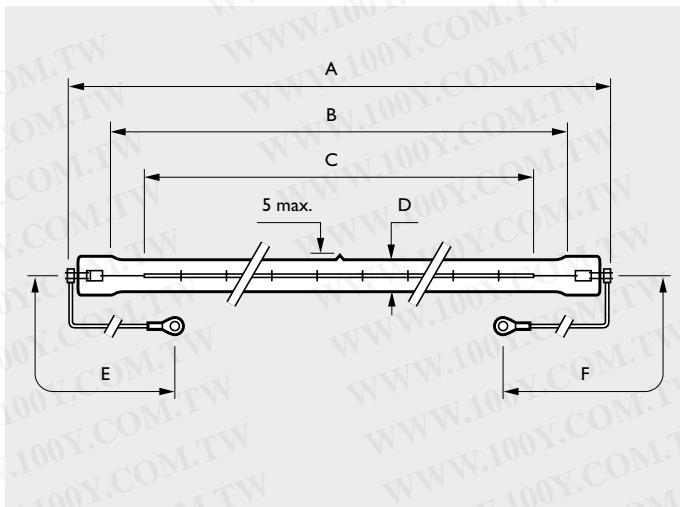


Fig. 5

Type	A max.	B	C	D max.	E	F
Cap/base V						
13168V	350	309±2	280±5	12.0	117±5	138±5
13565V	350	309±2	280±5	13.5	117±5	138±5

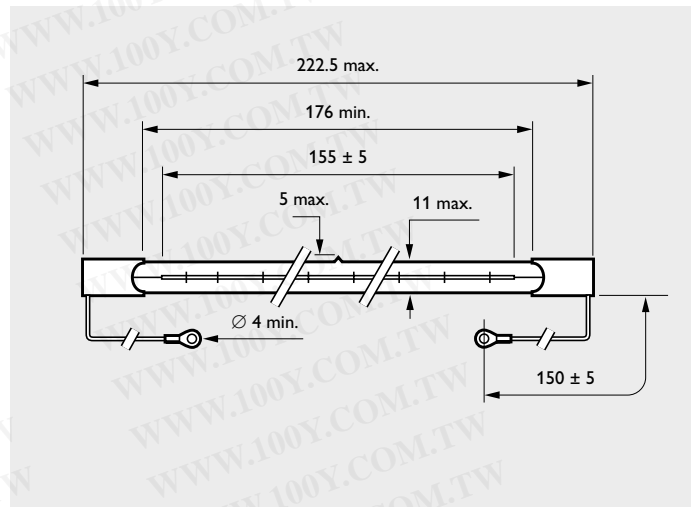


Fig. 6 - 13561Y/00, 13568Y/00

Dimensions in mm

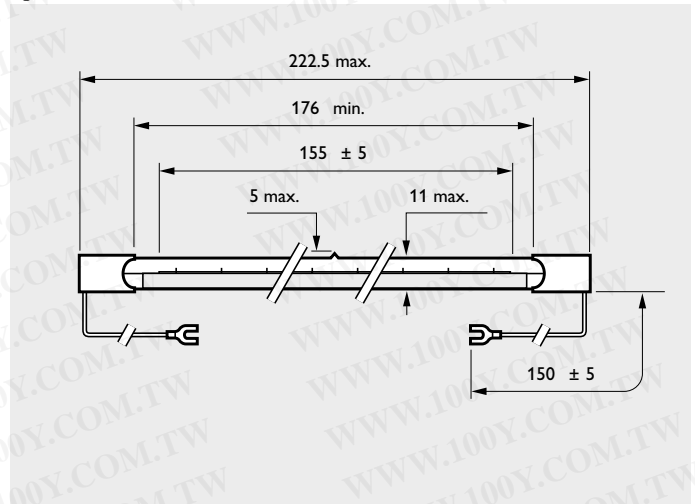


Fig. 7 - 13561Y/98, 13568Y/98

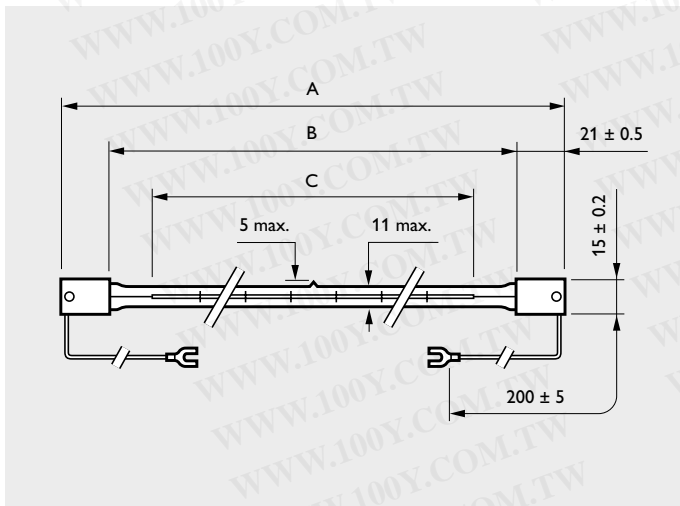


Fig. 8

Type	A max.	B	C
Cap/base SK15			
13169Z	227.5	180.0±2	165±5
13169Z/98	227.5	180.0±2	165±5
13713Z/98	357.5	310.0±3	272±5
13168Z/98	357.5	310.0±3	280±5
13393Z	787.5	740.0±3	700±5
13195Z/98	357.5	310.0±3	272±5

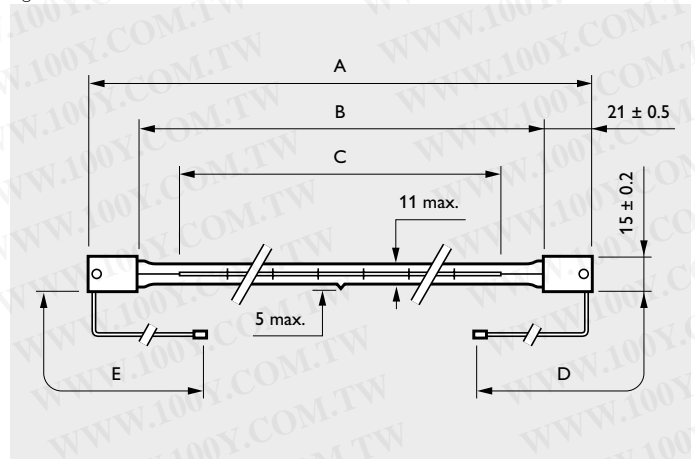


Fig. 9

Type	A max.	B	C	D	E
Cap/base SK15					
14103Z/98	357.5	310±3	280±5	230±5	230±5
14117Z	787.5	740±3	700±5	230±5	1200±5
13842Z	213.0	170±3	150±5	140±5	140±5
13214Z/98	658.0	604±3	500±5	500±5	500±5
14107Z/98	787.5	740±3	700±5	500±5	500±5

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Type	Wattage	Voltage	Fig.	Max. overall length	Heating length	Cap/base	Finish	Burning position	Lamp life 50% h	Ordering number	EOC
	W	V		mm	mm						
<b>GENERAL INDUSTRIAL COLOUR TEMPERATURE 2450K</b>											
13169X	500W	120V	3	241.0	142.0	X	CLEAR	P15	5000	9238 500 32300	216793
13169X/98	500W	120V	3	241.0	142.0	X	REFLECTOR	P15	5000	9238 502 32300	217400
500T3	500W	120V	4	223.8	127.0	U	TRANSLUCENT	P15	5000	9245 176 36300	517630
13169Z	500W	235V	8	227.5	165.0	SK15	CLEAR	P15	5000	9245 308 44500	497338
13169Z/98	500W	235V	8	227.5	165.0	SK15	REFLECTOR	P15	5000	9238 527 44500	217417
13842Z	700W	240V	9	213.0	150.0	SK15	CLEAR	P15	5000	9245 270 45500	496089
13195Z/98	1000W	235V	8	357.5	272.0	SK15	REFLECTOR	P15	5000	9238 543 44500	217455
13195X	1000W	235V	3	370.0	272.0	X	CLEAR	P15	5000	9238 510 43900	217424
13195X/98	1000W	235V	3	370.0	272.0	X	REFLECTOR	P15	5000	9238 514 43900	519429
13713X	1000W	235V	3	370.0	272.0	X	CLEAR	UNIVERSAL	5000	9238 515 43900	214720
13713X/98	1000W	235V	3	370.0	272.0	X	REFLECTOR	UNIVERSAL	5000	9238 960 44500	214737
13713Z/98	1000W	235V	8	357.5	272.0	SK15	REFLECTOR	UNIVERSAL	5000	9238 535 44500	214744
1000T3	1000W	240V	4	351.0	254.0	U	TRANSLUCENT	P15	5000	9245 178 43800	517654
13561Y/00	1200W	144V	6	222.5	155.0	Y	CLEAR	P15	5000	9239 207 57700	491572
13561Y/98	1200W	144V	7	222.5	155.0	Y	REFLECTOR	P15	5000	9245 033 57700	055699
13568Y/00	1600W	144V	6	222.5	155.0	Y	CLEAR	P15	5000	9239 457 57700	491596
13568Y/98	1600W	144V	7	222.5	155.0	Y	REFLECTOR	P15	5000	9245 032 57700	055682
1600T3	1600W	240V	4	503.0	406.0	U	TRANSLUCENT	P15	5000	9245 182 45500	051769
1600T3/CL	1600W	240V	4	503.0	406.0	U	CLEAR	P15	5000	9245 181 43800	517685
14103Z/98	2000W	235V	9	357.5	280.0	SK15	REFLECTOR	P15	5000	9245 347 44900	498342
13168V	2000W	235V	5	350.0	280.0	V	CLEAR	UNIVERSAL	5000	9238 504 44500	496324
13168X	2000W	235V	3	370.0	280.0	X	CLEAR	UNIVERSAL	5000	9238 525 43900	216779
13168Z/98	2000W	235V	8	357.5	280.0	SK15	REFLECTOR	UNIVERSAL	5000	9238 536 44500	216786
2MT3/ICL/HT/UBO	2000W	240V	4	303.0	254.0	U	CLEAR	UNIVERSAL	5000	9245 185 45500	517722
13214Z/98	2000W	230V	9	658.0	500.0	SK15	REFLECTOR	P15	5000	9245 323 44200	498236
13245X	2000W	400V	3	508.0	410.0	X	CLEAR	P15	5000	9238 530 57900	496331
13245X/98	2000W	400V	3	508.0	410.0	X	REFLECTOR	P15	5000	9238 529 57900	214706
13765X	2000W	400V	3	508.0	410.0	X	CLEAR	UNIVERSAL	5000	9238 531 57900	214751
13765X/98	2000W	400V	3	508.0	410.0	X	REFLECTOR	UNIVERSAL	5000	9245 054 57900	055750
2500T3	2500W	480V	4	731.0	635.0	U	TRANSLUCENT	P15	5000	9245 183 51600	517708
2500T3/CL	2500W	480V	4	731.0	635.0	U	CLEAR	P15	5000	9245 264 51600	517807
14107Z/98	3000W	230V	9	787.5	700.0	SK15	REFLECTOR	P15	5000	9245 363 44200	498526
13565V	3000W	235V	5	350.0	277.0	V	CLEAR	UNIVERSAL	5000	9245 143 44500	055941
13565X	3000W	235V	3	370.0	277.0	X	CLEAR	UNIVERSAL	5000	9239 456 44500	055330
13230X	3000W	400V	3	798.0	700.0	X	CLEAR	UNIVERSAL	5000	9238 540 57900	217486
13230X/98	3000W	400V	3	798.0	700.0	X	REFLECTOR	UNIVERSAL	5000	9238 541 57900	217493
3200T3/CL	3200W	240V	4	1062.0	815.0	U	CLEAR	P15	5000	9245 326 45500	001689
3800T3	3800W	575V	4	1062.0	965.0	U	TRANSLUCENT	P15	5000	9245 184 51100	517715
3800T3/CL/UB	3800W	575V	4	1062.0	965.0	U	CLEAR	UNIVERSAL	5000	9245 173 51100	517616
<b>LOW COLOUR TEMPERATURE LAMPS 2000K</b>											
13296C	400W	110V	2	500.0	443.0	SK11	CLEAR	P4	5000	9239 470 31900	055378
13298C	630W	110V	2	500.0	443.0	SK11	CLEAR	P4	5000	9245 012 31900	055675
14117Z	750W	230V	9	787.5	700.0	SK15	CLEAR	UNIVERSAL	5000	9245 405 44216	518569
13393Z	1300W	235V	8	787.5	700.0	SK15	CLEAR	UNIVERSAL	5000	9239 454 44500	055323
<b>OTHER APPLICATIONS COLOUR TEMPERATURE 2450K - R7S</b>											
13908R	300W	230V	1	117.6	60.0	R7S	CLEAR	P15	1000	9238 503 43300	491558
375T3/7	375W	120V	1	217.6	127.0	R7S	TRANSLUCENT	P15	5000	9245 205 34600	517784
500T3/7	500W	120V	1	217.6	127.0	R7S	TRANSLUCENT	P15	5000	9245 177 34600	517647
13169R	500W	235V	1	220.6	165.0	R7S	CLEAR	P15	5000	9239 468 44500	055354
1600T3/7	1600W	240V	1	498.6	406.0	R7S	TRANSLUCENT	P15	5000	9245 190 43800	517760
2500T3/7	2500W	480V	1	730.0	635.0	R7S	TRANSLUCENT	P15	5000	9245 191 51600	517777

## Replacement table

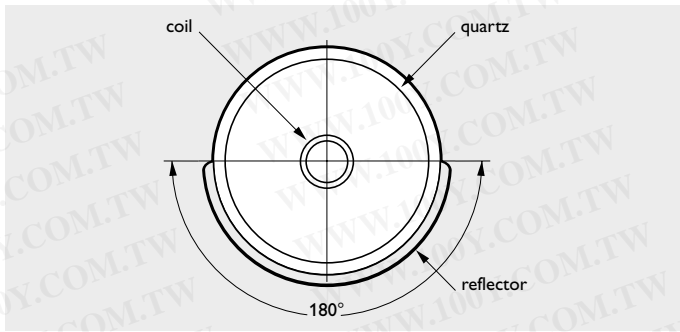
W	Old type Z cap	Corresponding new type SK15 cap
2000	13213Z/98F	14103Z/98

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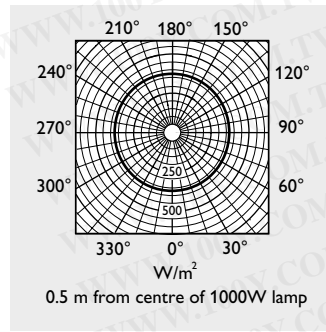


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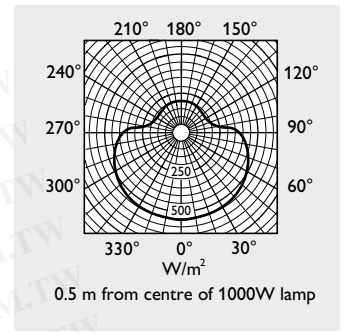
# Halogen for industrial process



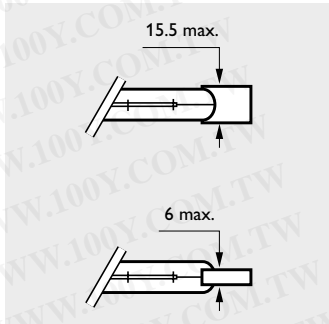
Cross-section of lamp with reflector 198



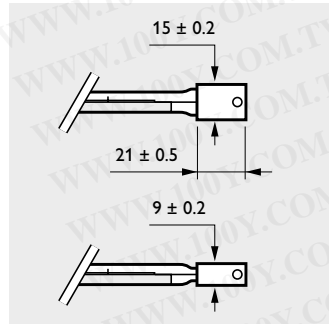
Without reflector



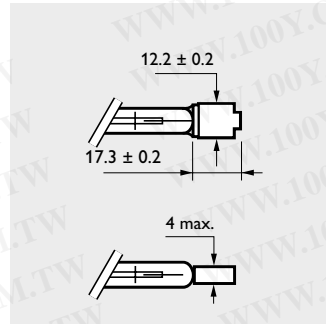
With reflector 198



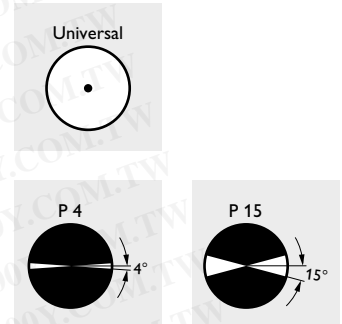
Detail of Y-version



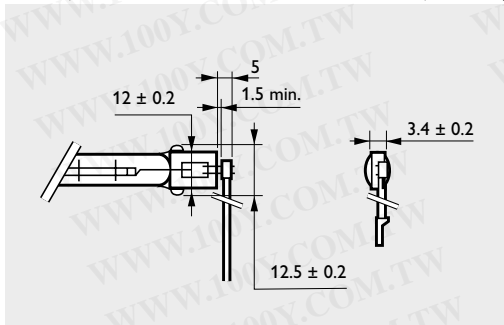
Detail of SK15-cap version



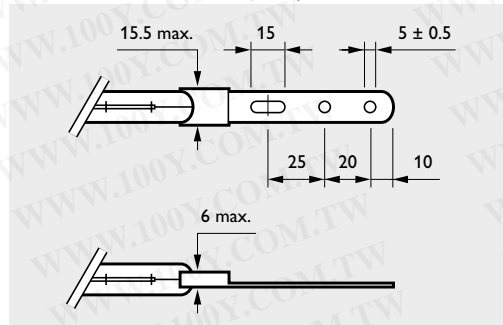
Detail of U-clip version



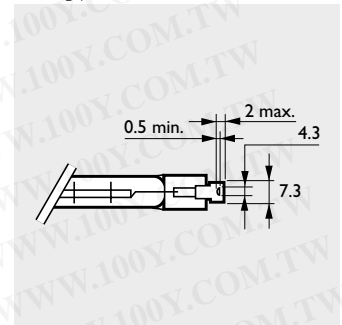
Burning positions



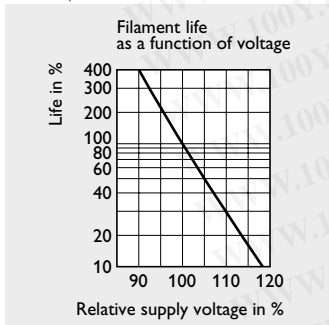
Detail of V-version



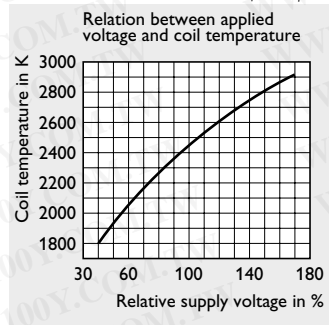
Detail of X-clip version



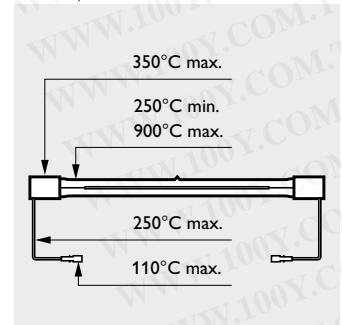
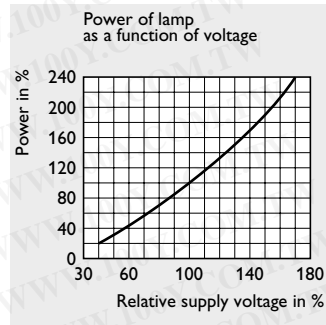
Detail of R7S-version



Special diagrams



Remark: 100 % = 2450 K



Permissible temperatures

Prolonged storage in high moisture warehouse may result in lamp depreciation. Philips Lighting is also able to meet special customer demands. If you have any questions, please contact your local Philips Lighting organisation.

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