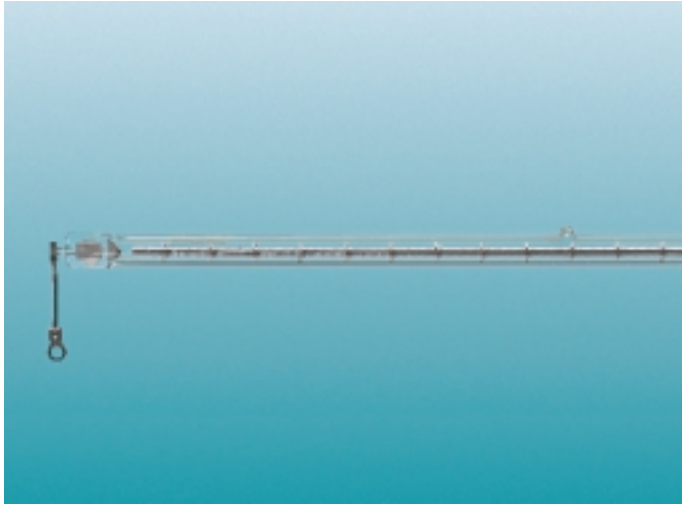


Infrared heat lamps



Double-ended



Single-ended

Halogen for semiconductor industry

Tubular double-ended and single-ended quartz halogen lamps are high-power infrared heat sources. Supports centre the filament within the tube for sturdiness. The lamps are of the halogen type, which means that blackening of the tube and consequently infrared depreciation negligible during life, which ensures very high stability for semiconductor processing. High radiant energy concentrations are provided by IRK lamps. Full power is reached within a few hundred milliseconds of switching on. The power of the lamps is fully controllable, the required radiation level can be adjusted instantly between 0 and 100%. This means that silicon wafer temperature can be modulated accurately according to the process specification over a wide range.

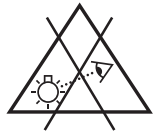
Process reproducibility is achieved by providing exactly the same heat dose to the silicon wafer every time.

Applications

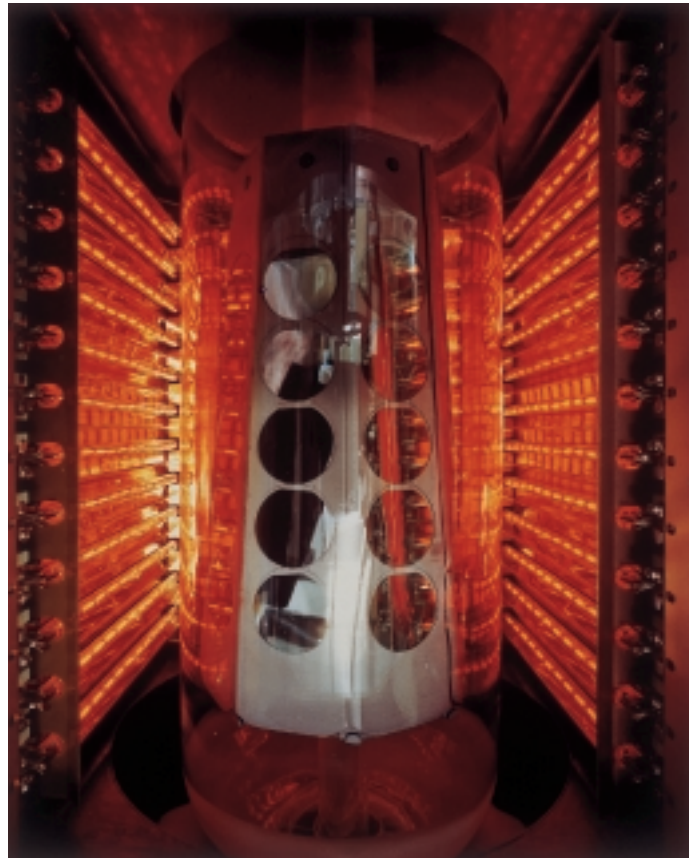
Philips Lighting offers a range of Quartz Infrared Halogen Lamps as heat sources for semiconductor manufacturing processes:

- Epitaxy
- CVD (Chemical Vapor Deposit)
- RTP (Rapid Thermal Process)
- Ion implant annealing
- Etching

Philips lamps fit in most of the equipment used in the semiconductor industry.



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



Infrared heat lamps

Halogen for semiconductor industry

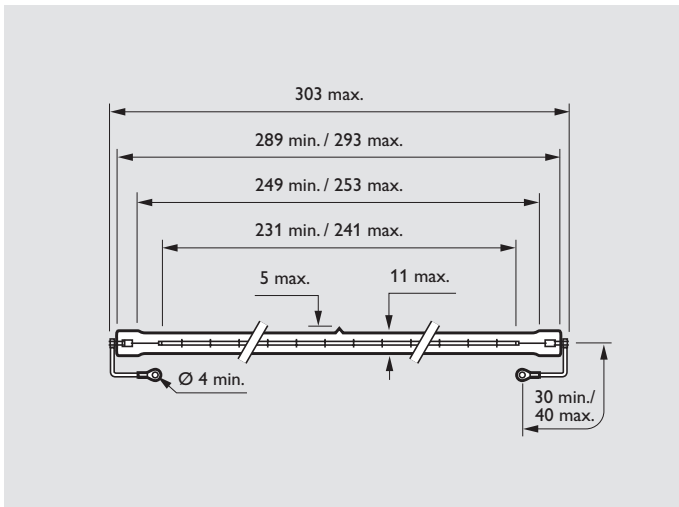


Fig. 1

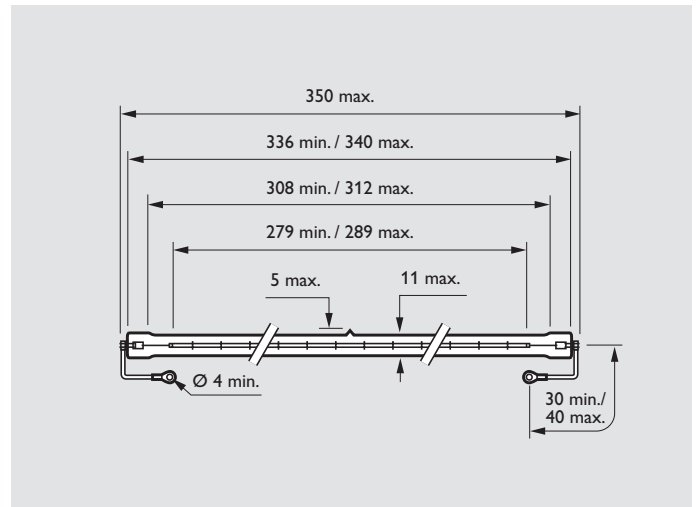


Fig. 2

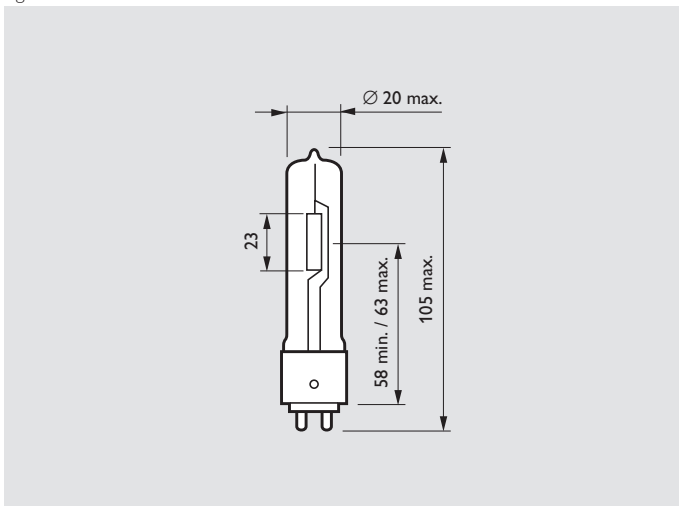


Fig. 3

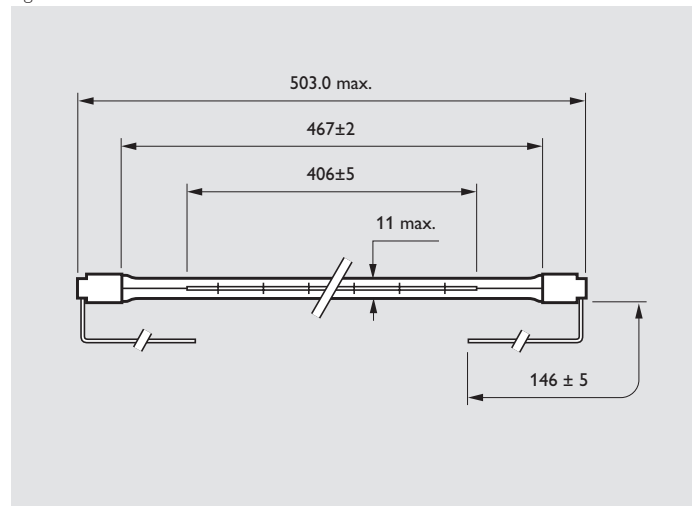


Fig. 4

Dimensions in mm

| Type | Wattage W | Voltage V | Fig. | Max. overall length mm | Heating length mm ±5 | Diam. mm | Lamp density W/cm | Cap/base | Finish | Colour temp. K | Burning position | Average Life h | Ordering number | EOC |
|---------------------|--------------|--------------|------|---------------------------|-------------------------|-------------|----------------------|--------------|--------|-------------------|------------------|-------------------|----------------------|--------|
| Double-ended | | | | | | | | | | | | | | |
| 1600T3/CL | 1600 | 240 | 4 | 503.0 | 406.0 | 11.0 | 39.4 | U | CLEAR | 2500 | P15 | 5000 | 9245 181 43800 | 517685 |
| 13136V | 4600 | 400 | 1 | 303.0 | 236.0 | 12.0 | 194.9 | V | CLEAR | 3000 | P4 | 1000 | 9238 508 49100 | 491565 |
| 13170V | 6000 | 480 | 2 | 350.0 | 284.0 | 12.0 | 211.3 | V | CLEAR | 2900 | P4 | 1000 | 9245 298 51700 | 491619 |
| 13138V | 6000 | 480 | 1 | 303.0 | 236.0 | 12.0 | 254.2 | V | CLEAR | 3000 | P4 | 1000 | 9245 340 51700 | 498267 |
| 14118V | 6850 | 480 | - | 303.0 | 242.0 | 10.0 | 283.1 | V | CLEAR | 3000 | P15 | 1000 | 9245 412 51700 | 518637 |
| Single-ended | | | | | | | | | | | | | | |
| J1D100-500 | 500 | 100 | - | 95.0 | - | 14 | - | E11 | CLEAR | 2950 | UNIVERSAL | 2000 | available on request | - |
| J1D120-500 | 500 | 120 | - | 95.0 | 24.0 | 14 | - | E11 | CLEAR | 2950 | UNIVERSAL | 2000 | available on request | - |
| 6990P metal | 1000 | 120 | 3 | 100.0 | 19.0 | 20 | 526.3 | G9.5 metal | CLEAR | 3100 | UNIVERSAL | 450 | 9245 208 36300 | 498502 |
| 14302P ceramic | 1000 | 120 | 3 | 100.0 | 19.0 | 20 | 526.3 | G9.5 ceramic | CLEAR | 3100 | UNIVERSAL | 450 | 9245 382 36300 | 498663 |
| 13756 | 2000 | 120 | - | 149.0 | 34.0 | 26.5 | 588.2 | G22 ceramic | CLEAR | 3000 | UNIVERSAL | 2000 | available on request | - |

