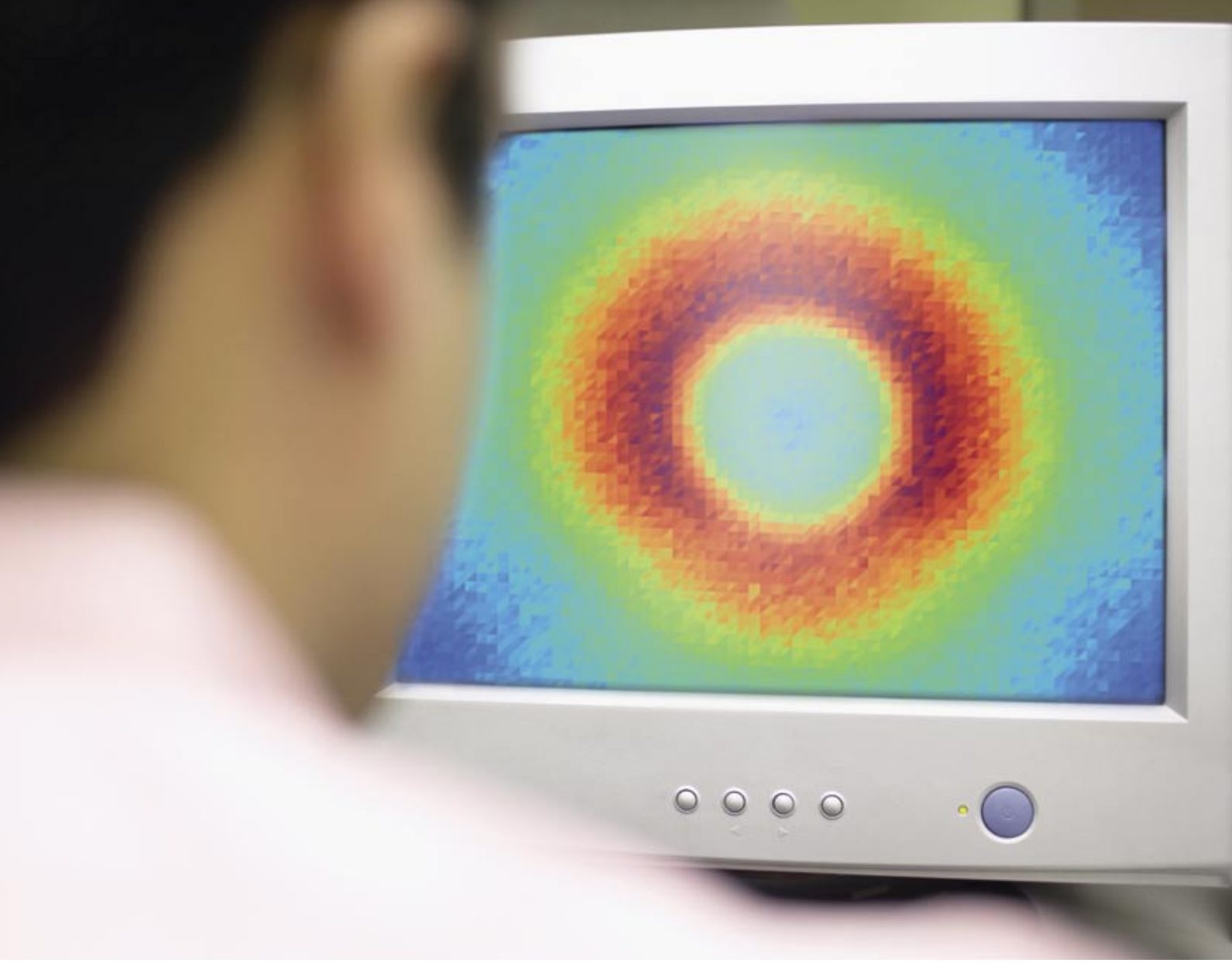


Technical information and support facilities

Philips infrared lamps

PHILIPS

Philips infrared measurement support

When designing an infrared heater, it is highly important to check that its performance matches the requirements of the application. To help OEMs to assess and optimise the quality level of their heating system, Philips application team proposes specific measurement.

Complete analysis of OEMs heating system

Measure of irradiance level (heat output, W/m^2):

- Philips Spatial Irradiance Measurement-Unique XY bench allows evaluating the heat output from infrared heaters. The objective is to make sure that it matches specific needs of the application
- The homogeneity of the beam can be analysed to make sure that it is suitable for the concerned application

Temperature measurement over lamps in order to prevent future problems of lifetime of the system and to optimise the quality of the heater.

- Lamp pinches temperature
- Tube temperature of the lamp, depending on the heater characteristics

Lifetime test of the switched-on lamp integrated in the heating system.

Accurate recommendations based on the conducted measures

On the basis of the obtained results, Philips' support team provides heater manufacturers with recommendations on specific matters such as reflector specification (material, pattern).

Benefits of Philips infrared measurement support or OEM:

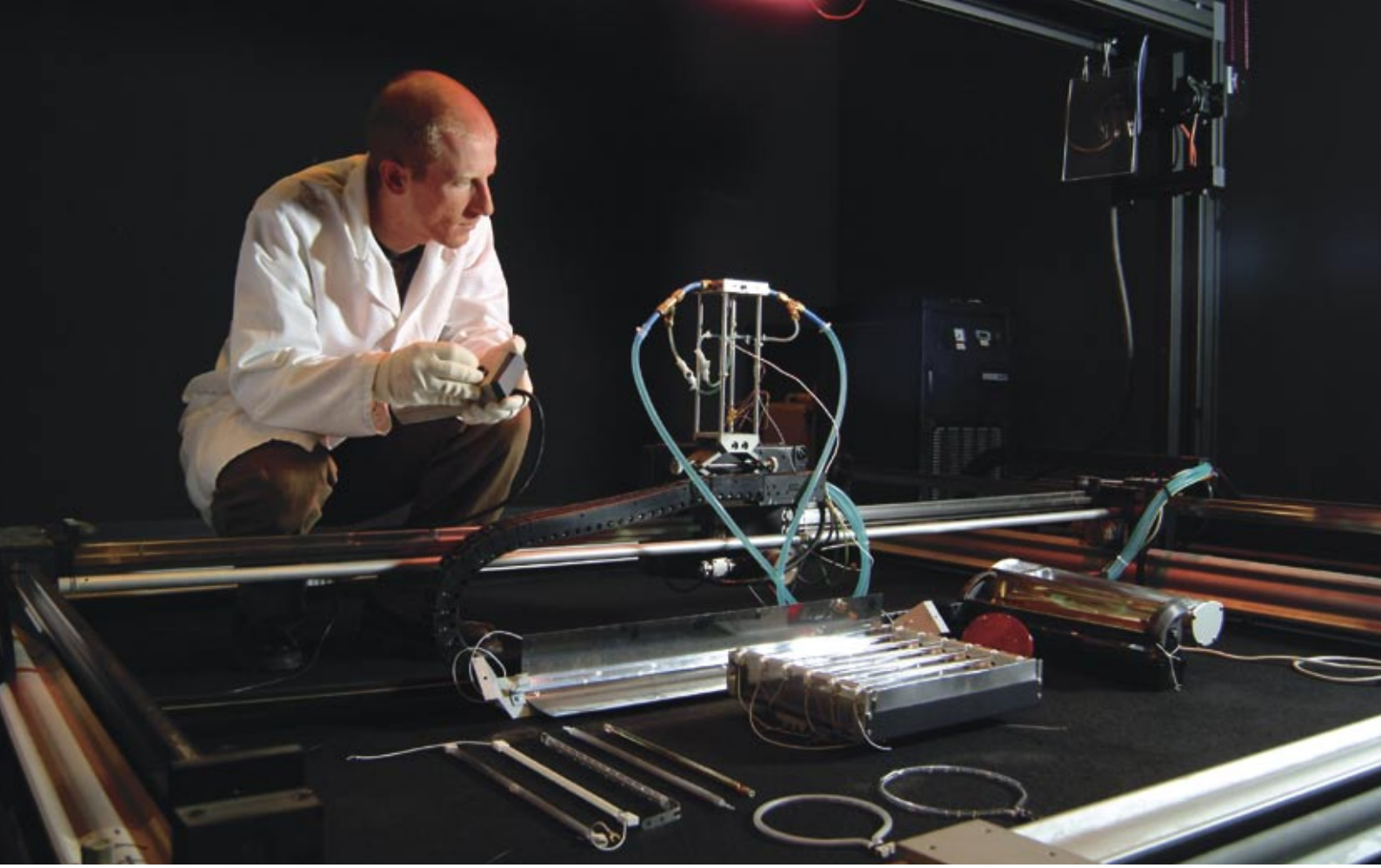
- Assess the performance of heating systems
- Define ways of improvement in terms of efficiency and systems lifetime

Technical characteristics of Philips XY bench:

- Maximum weight of heater: 50KG
- Maximum scanned surface: 168 x 168 cm
- Maximum measurable irradiance: 250 000 W/m^2
- Minimum measured irradiance: 180 W/m^2
- Wavelength bandwidth: 600 to 15000 nm
- Maximum power: 2*10 KW (50A; 500 v)

Accuracy of the results provided by Philips is granted by specific measurement control system

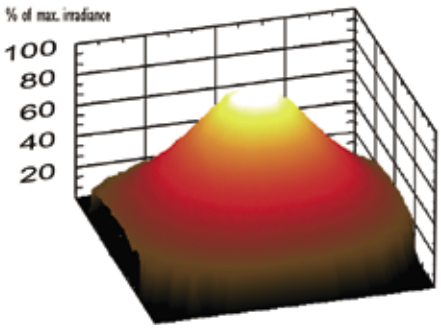
Measurements are conducted in black chamber to avoid any disturbance. Lamp voltage and flux meters temperature are under constant control during measurements.



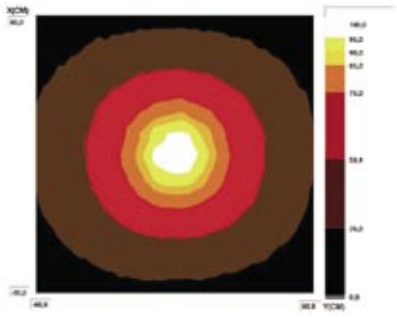
Philips XY bench unique principle and output

A Cartesian bench supports a carriage chuck on which there is a flux meter. The carriage chuck moves under the heating system in order to obtain whether a cross irradiance or a cartography.

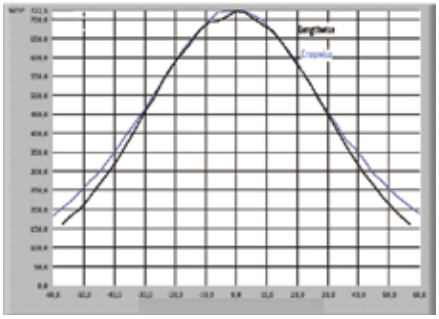
Cartography 3D



Cartography 2D



Cartography 2D



Philips infrared modeling support

Since time to market is a key issue for heater manufacturers developing new systems, Philips developed infrared modeling support: completely unique and innovative optical modeling software based upon our in house know how.

Time and cost optimization in the design phase

Philips infrared modeling support allows heating systems manufacturers:

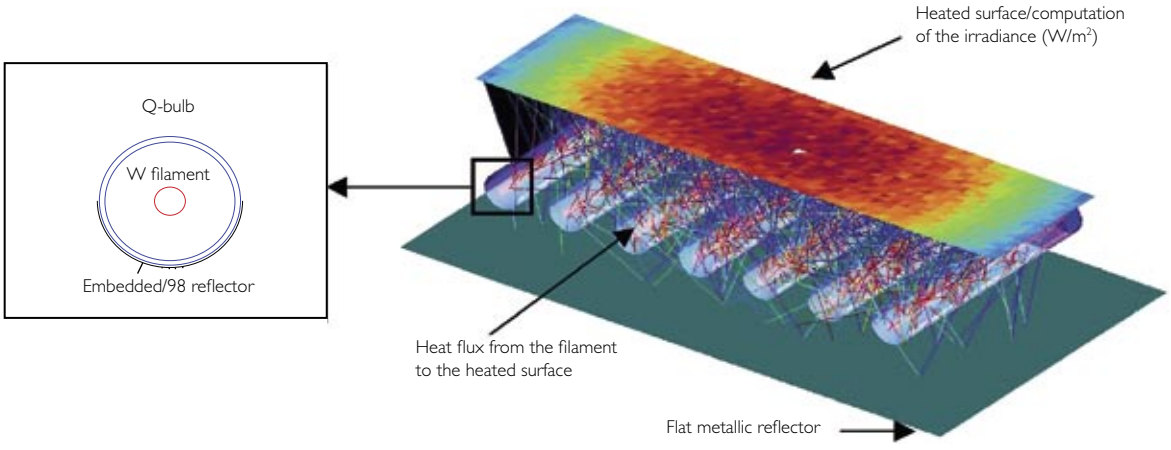
- To predict system heat flux output by simulation without any tooling or prototyping (results are insured by comparison with measurements based over significant lamp and reflector database).
- To anticipate technical bottlenecks in the design phase.

It means a real advantage in term of rapidity and cost reduction for the creation and development of heating systems.

Three adapted levels of modeling support

An efficient way to match OEMs requirements in the design phase:

- Optimization of existing heater reflector design
- Design of new heater reflector based upon application requirements
- Design of heaters layout (number, position) based upon application requirements



Benefits of creating or optimizing heating systems with Philips infrared modeling support:

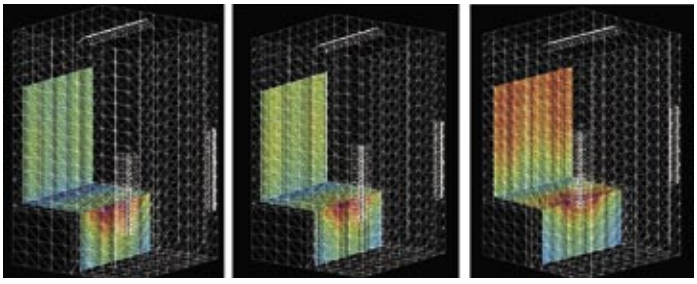
- Reduced time to market thanks to shortened development phase
- Optimization of development costs
- Optimization of overall efficiency during the design phase

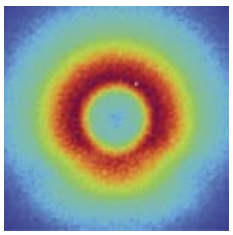
Optimization of existing reflector: typical example

- Entry data: a customer heater under development (CAD drawing), integrating a circular infrared halogen lamp
- Customer request: to analyse the reflector and propose optimization for more homogeneous heat distribution (at a given distance)

Improvement of existing system installation: typical example:

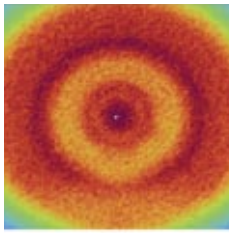
- Entry data: an infrared cabin with certain configuration
- Simulation: the heater setting has been optimised to improve user comfort by an homogeneous smooth heat distribution over the cabin (red zones), by keeping the same installed power and same reflector shape in the three simulations.





Before optimization

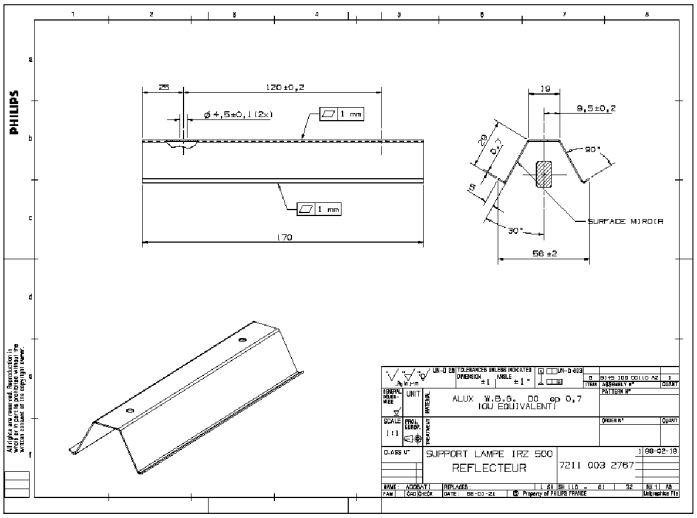
Lack of uniformity of the heat distribution. Concentrated beam (red) with cold spot in the beam center (green and blue).



After optimization

Homogeneous heat distribution over targeted surface with a smoother beam.

Design support for new reflectors: typical example



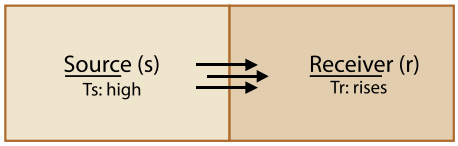
Infrared principles

Philips infrared lamps are designed and used for all kinds of heating and drying applications.

Heating principle

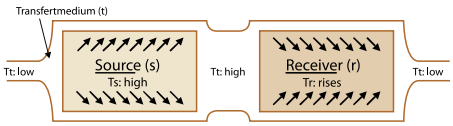
Basically there are three main heating principles:

Conduction



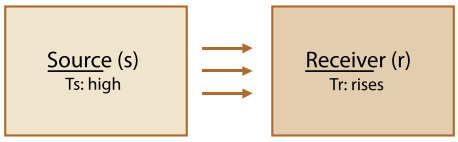
Heat transfer is by direct contact between the source and the object.

Convection



Heat transfer is by a flow of liquid or gas which is itself heated by a heat source.

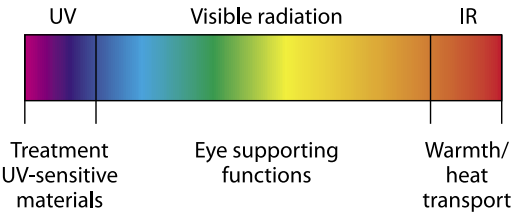
Radiation

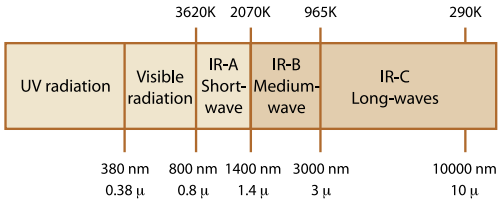


Heat transfer is by the emission of radiation from a hotter object such as the sun, an open fire or an infrared lamp to its cooler surrounding environment. Objects which receive this radiation from the heat source absorb it and become hotter.

Philips infrared lamps use this radiation principle. They directly heat an object or person at which they are directed without heating the surrounding air. This is what makes them highly efficient heat sources.

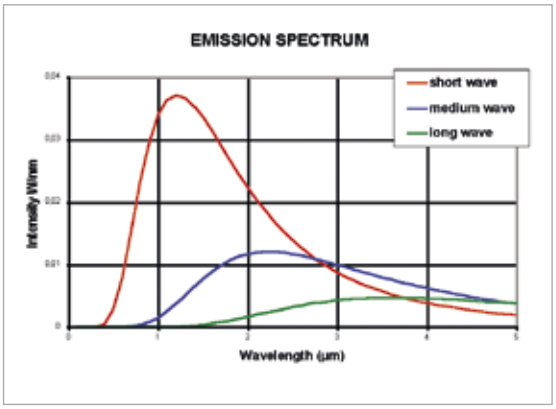
Infrared within the optical spectrum





The infrared part of the optical spectrum is split into three parts:
Short wave: IR-A
Medium wave: IR-B
Long wave: IR-C

Philips infrared lamps have a broad spectrum (see graph below), but most of the radiation they produce is in the IR-A part. For most industrial heating applications this is the region that gives the highest heating efficiency.



The radiation in the three wavelength ranges has a number of differences which are shown in the table below. This table shows that infrared emitters (heat sources) radiate their energy over a range of wavelengths.

The main range of Philips infrared lamps mainly emit radiation in the short wavelengths. This means that medium and long wave emitters (e.g. steel tube and ceramic radiators) have a higher thermal inertia and lower temperature than our short wave infrared lamps.

Infrared wave	Short wave	Medium wave	Long wave
Emiter	Infrared halogen and incandescent lamp	Quartz emiter	Resistance
Material	Tungsten coil in sealed quartz tube	Fe-Cr-Al alloy in quartz tube	Fe-Cr-Al alloy in closed steel tube
Radiant efficiency	92%	60%	40%
Switch ON/OFF time (90% output)	1 sec	30 sec	5 min
Emission peak	1,2 µm	2,2 µm	4,0 µm
Visible	6%	0,5%	0,05%
IR-A	34%	3,5%	1%
IR-B	50%	50%	14%
IR-C	10%	46%	85%
Colour temperature	2500 K	1300 K	800 K
Heating principle	Radiation	Radiation and convection	Convection
Air draught sensitivity	No	High	Very high
Focusing with reflectors	Good focusing recommended	Possible	Hardly not relevant
Colour sensitivity	High	Medium	Low

Basically Philips infrared offers two types of infrared lamps:

Infrared halogen lamps

The main lamp range, used for a wide range of applications, such as comfort heating, semiconductor industry, bottle-blowing, thermoforming, infrared heating cabins, car paint drying, food warming etc.

Infrared incandescent lamps

Lamps used for healthcare applications, animal care and various other industrial applications.

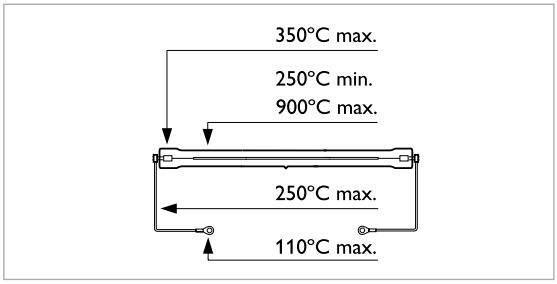
Our infrared catalogue presents all our infrared lamps for various applications. In addition to these standard products, we also supply a number of lamps designed to meet the specific requirements of our key partners.

Key benefits of Philips infrared lamps

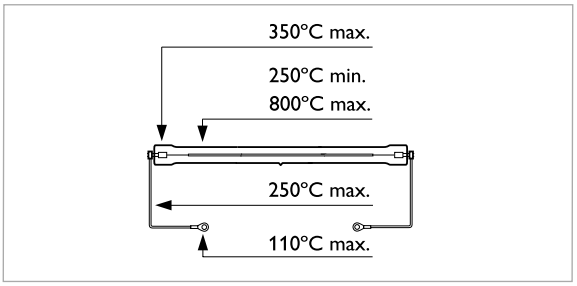
Features	Benefits
Instant heat	Full emitted power within milliseconds after switch-on
No emissions or pollution	Clean and environmental friendly
Quartz envelope for infrared halogen lamps	Heat shock resistant and safe
90% of the energy is transmitted as infrared heat	Efficient and economical heat source
Dimmable	Output accurately controllable from 0 to 100% to match your needs
Infrared halogen technology	No blackening of the bulb and so no depreciation infrared emission during life time.
Long lifetime	Low maintenance
Same optical properties as light	Heat can be focused by reflectors
Compact design	Allows design of compact heat sources and systems

Additional information about Philips infrared halogen lamps

Standard permissible temperatures



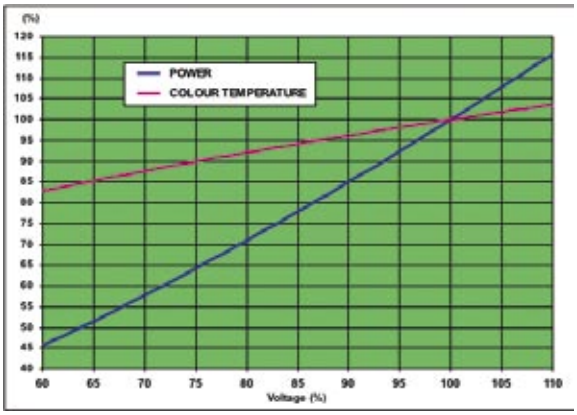
Philips infrared lamps with HeLeN technology permissible temperatures



Recommendations:

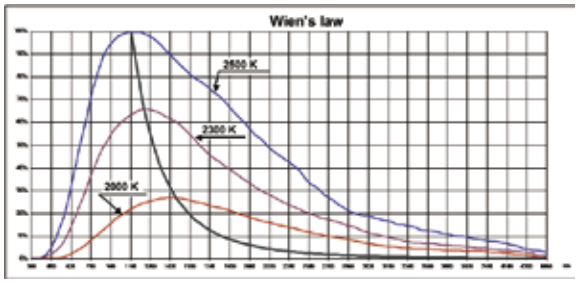
- To avoid pinch damages: pinch temperature has to be inferior to 350°C
- To ensure a proper halogen cycle: tube temperature has to be superior to 250°C
- To avoid tube damages: tube temperature has to be lower than 900°C and lower than 800°C for HeLeN

Lamp power and colour temperature as a function of voltage in percentage of nominal values



Power and colour temperature of the lamp quickly vary according to the voltage.

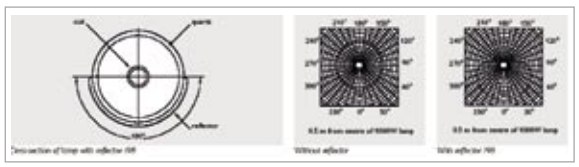
Wien's law: variation of the maximum of emission as a function of colour temperature



Remark: 100%=maximum irradiance level of the 2500K lamp

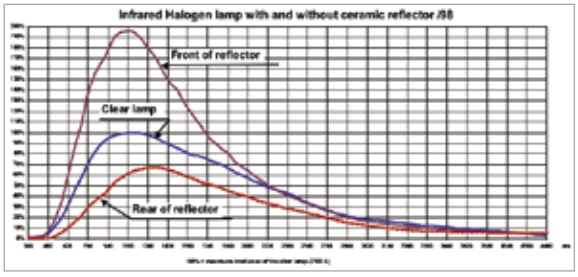
When the colour temperature decreases, the maximum of emission moves towards longer waves lengths.

Embedded reflector



The reflector directs heat radiation in one direction from 180° towards desired area.

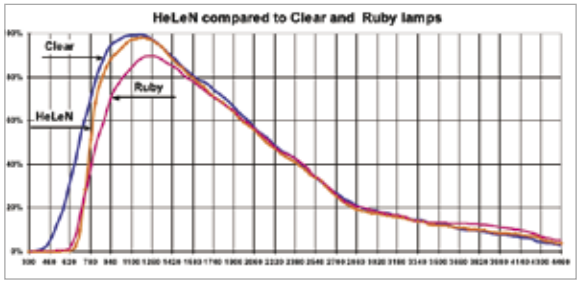
The emission spectra of infrared halogen lamps with and without reflector



Remark: 100%=maximum irradiance level of the clear lamp

The heat radiation level obtained in front of an embedded reflector is two times the level of the equivalent clear lamp.

Philips infrared lamps with HeLeN technology glare reduction filter



Remark: 100%=maximum irradiance level of the clear lamp

Philips infrared lamps with HeLeN technology a glare reduction filter, which cuts the visible part of the spectrum and has almost the same efficiency and the same heat radiation as the equivalent clear lamp.

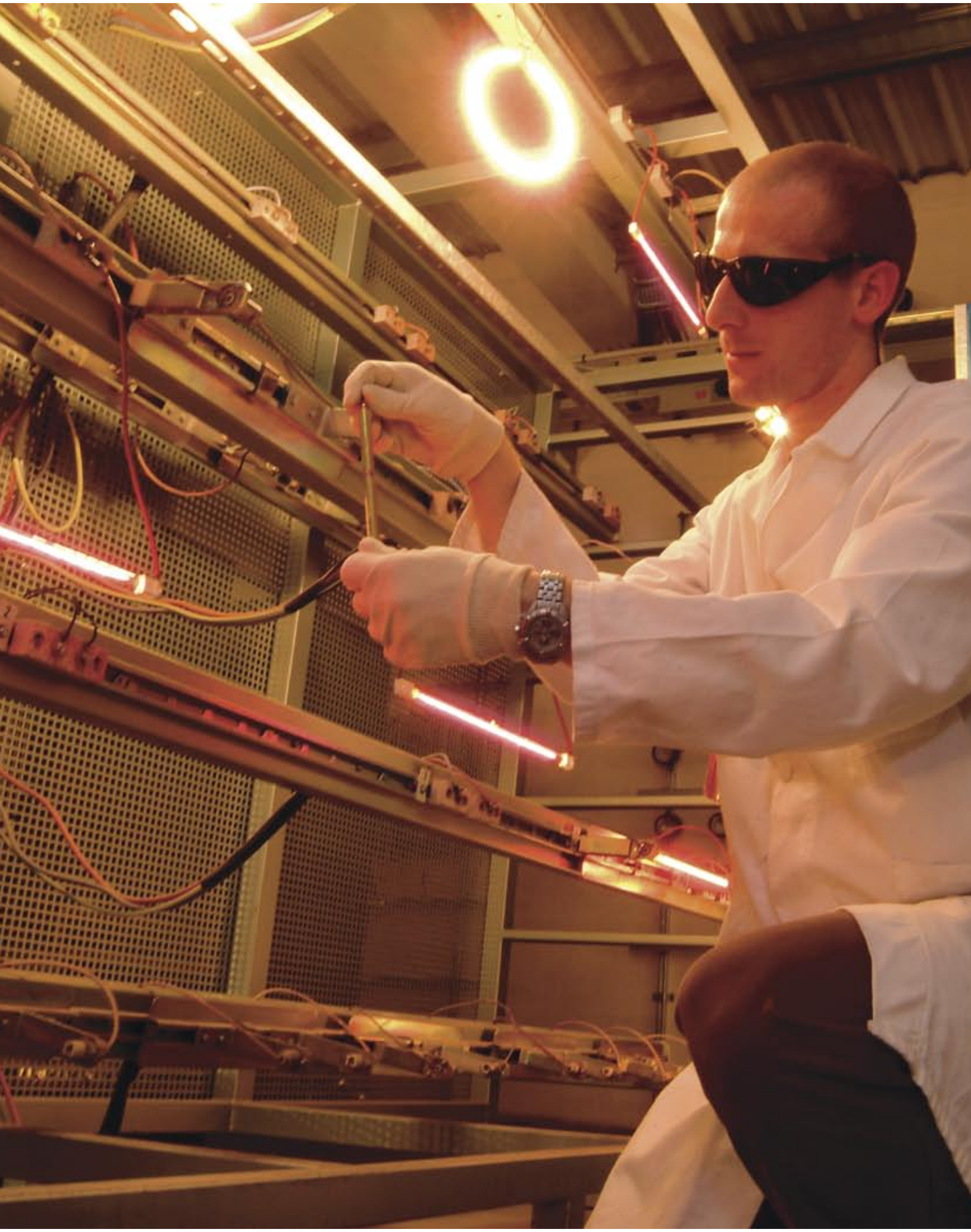
Logos description

Preferably do not touch quartz with bare hands. If grease or chemical compound have been deposited on quartz, simply clean before lighting with cloth moistened with alcohol.

Disconnect installation from power supply before removing or installing a lamp.

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

Keep dry.



Philips infrared lamps with HeLeN technology for comfort heating

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Heating length (mm)	Diameter (mm)	Finish	Burning position	Average lamp life	Cable (mm)	Cable connection	12nc	EOC	US Product Number
	(W)	(V)		C	W	D			(h)					
15011Z	500	235	SK15	227,5	162	11	HeLeN	Horizontal	5.000	300	Splice	9245.299.43216	871150049641625	-
15024Z	1.000	120	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Faston	9245.453.36316	871150051936825	365163
15007Z	1.000	235	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Faston	9245.242.45516	871150049611925	280503
15008X	1.000	235	X	370,0	280	11	HeLeN	Horizontal	5.000	-	-	9245.273.44516	871150049613325	-
15009Z	1.000	235	SK15	355,0	280	11	HeLeN	Universal	5.000	900	Faston	9245.274.44916	871150049614025	-
15019Z	1.000	235	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Faston	9245.411.44916	-	289256
15007R	1.000	235	R7S	350.0	272	11	HeLeN	Horizontal	5.000	-	-	9245.718.44916	871150049687425	-
15015Z	1.500	120	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Fork	9245.338.31916	871150049824325	508044
15004Z	1.500	235	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Faston	9245.231.45516	871150005607825	-
15034Z	1.500	235	SK15	355,0	280	11	HeLeN	Universal	5.000	300	Faston	9245.567.44916	871150018591425	-
15010Z	1.500	240	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Fork	9245.297.45516	871150049640925	-
15005Z	2.000	235	SK15	355,0	280	11	HeLeN	Horizontal	5.000	300	Faston	9245.244.45516	871150049612625	-
15021Z	2.000	235	SK15	355,0	280	11	HeLeN	Universal	5.000	300	Faston	9245.443.44916	871150051906125	-
15012U	3.000	235	U	503,0	423	11	HeLeN	Universal	5.000	146	Splice	9245.310.45524	871150049744425	249615
15049Z	1000	120	SK15	355,0	280	11	HeLeN	Universal	5.000	300	Faston	9245.751.36316	871150050697925	-

Philips infrared halogen lamps for infrared cabins

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Heating length (mm)	Diameter (mm)	Finish	Burning position	Average lamp life	Colour temp.	Cable (mm)	Cable (mm)	Cable connection	12nc	EOC
	(W)	(V)		C	W	D			(h)	(K)	X1	X2			
14142Z	500	235	SK15	787,5	700	11,0	Translucent	Universal	5.000	1750	1200	230	Splice	9245.556.44916	871150018555625
14157Z	500	235	SK15	787,5	700	11,0	Translucent	Universal	5.000	1750	1200	230	Splice	9245.629.44916	871150018671325
14117Z	750	235	SK15	787,5	700	11,0	Clear	Universal	5.000	2000	1200	230	Splice	9245.405.44216	871150051856925
14124Z	750	235	SK15	787,5	700	11,0	Translucent	Universal	5.000	1750	1200	230	Splice	9245.479.44216	871150051972625
14155Z	750	235	SK15	787,5	700	11,0	Clear	Universal	5.000	1750	1200	230	Splice	9245.622.44216	871150018651525
13393Z	1.300	235	SK15	787,5	700	11,0	Clear	Universal	5.000	2000	200	200	Fork	9245.454.44516	871150005532325
14181Z	300	120	SK15	433.0	380	11,0	Clear	Universal	5.000	1850	600	100	Splice	9245.761.36316	871150050785325

Philips infrared incandescent lamps for healthcare

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Lamp length (mm)	Diameter (mm)	Bulb material	Finish	Burning position	Average lamp life	12nc	EOC
	(W)	(V)		C	C1	D				(h)		
R95 UNP/144	100	230	E27	130	-	95	Soft Glass	Red	Universal	300	9232.442.44206	871150016634097
R95 ICT/25	100	230	E27	130	-	95	Soft Glass	Red	Universal	300	9232.442.44208	871150014559840
PAR 38E UNP	150	230	E27	130	123	95	Soft Glass	Red	Universal	300	9238.066.44208	871150016675398
PAR 38E ICT/15	150	230	E27	130	123	95	Soft Glass	Red	Universal	300	9238.066.44209	871150012887420

Philips infrared halogen lamps for food warming

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Heating length (mm)	Diameter (mm)	Lamp diameter	Finish	Burning position	Average lamp life	Colour temp.	Cable (mm)	Cable connection	12nc	EOC
	(W)	(V)		C	W	D	E			(h)	(K)	X			
Philips infrared halogen lamps for food warming - clear sleeve															
13169Z/850	500	235	SK15	225	160	20,0	-	Clear	Horizontal	5.000	2400	230	Splice	9245.52344924	871150005583525
Philips infrared halogen lamps for food warming - medium wave															
17007/99	600	230	SK9 + LEAD	425	345	11,0	-	Translucent	Horizontal	5.000	1700	350	Splice	9245.476.44216	871150051971965
17016/99	1.000	235	SK9	445	341	11,0	-	Translucent	Universal	5.000	1850	300	Fork	9245.633.44916	871150018683665

Philips infrared halogen lamps for plastic forming

Type	Lamp Wattage (W)	Voltage (V)	Cap/ Base	Total lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average lamp life (h)	Colour temp. (K)	Cable (mm) X	Cable connection	12nc	EOC	US Product Number
13908Z	300	230	SK15	122	60	11	Clear	Horizontal	1.000	2500	140	Splice	9245.271.44216	871150049609625	-
13169X	500	120	X	242	142	11	Clear	Horizontal	5.000	2500	-	-	9238.500.32316	871150021679325	312033
13169X/98	500	120	X	242	142	11	Reflector	Horizontal	5.000	2500	-	-	9238.502.32316	871150021740025	312058
500T3	500	120	U	224	127	11	Translucent	Horizontal	5.000	2500	146	Splice	9245.176.36316	871150051763025	216515
500T3/7	500	120	R7S	219	127	11	Translucent	Horizontal	5.000	2500	-	-	9245.177.34616	871150051764725	209940
13169Z/98	500	235	SK15	227	159	11	Reflector	Horizontal	5.000	2400	200	Fork	9238.527.44516	871150021741725	-
14143Z/98	2500	400	SK15s	355	280	11	Reflector	Horizontal	5.000	2700	200	Fork	9245.561.49116	871150018579225	-
14144Z/98	3000	400	SK15s	355	280	11	Reflector	Horizontal	5.000	2650	200	Fork	9245.562.49116	871150018580825	-
14136Z/98	2000	235	SK15	355	280	11	Reflector	Horizontal	5.000	2700	200	Fork	9245.477.44916	871150018453525	-
14137Z/98	2500	235	SK15	355	280	11	Reflector	Horizontal	5.000	2700	200	Fork	9245.478.44916	871150018456625	-
13842Z	700	240	SK15	216	150	20	Clear	Horizontal	5.000	2600	140	Splice	9245.270.45516	871150049608925	-
13195X	1000	235	X	370	280	11	Clear	Horizontal	5.000	2500	-	-	9238.510.43916	871150021742425	-
1000T3	1000	240	U	351	254	11	Translucent	Horizontal	5.000	2500	146	Splice	9245.178.43816	871150051765425	312132
1000T3/CL	1000	240	U	303	254	11	Clear	Horizontal	5.000	2500	146	Splice	9245.179.43816	871150051766125	209957
14134Z/98	1200	235	SK15	224	155	11	Reflector	Horizontal	5.000	2700	150	Fork	9245.371.44916	871150005842325	210005
14135Z/98	1600	235	SK15	228	155	11	Reflector	Horizontal	5.000	2700	150	Fork	9245.372.44916	871150018450424	-
13168X	2000	235	X	370	288	11	Clear	Universal	5.000	2500	-	-	9238.525.43916	871150051772225	-
2MT3/ICL/ HT/UB0	2000	240	U	305	254	11	Clear	Universal	5.000	2500	146	Splice	9245.185.45516	871150051772225	216481

Philips infrared halogen lamps for semiconductor industry

Type	Lamp Wattage (W)	Voltage (V)	Cap/ Base	Total lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average lamp life (h)	Colour temp. (K)	Cable (mm)	Cable connection	12nc	EOC	US Product Number
13941Z	1500	235	SK15	352	274	11,0	Clear	Horizontal	1.000	2900	1200	Splice	9245.268.43916	871150049600325	-
13136V	4600	400	V	303	242	12,0	Clear	Horizontal	1.000	2900	35	Ring	9238.508.49104	871150049156525	256545
13138V	6000	480	V	303	236	12,0	Clear	Horizontal	1.000	3000	35	Ring	9245.340.51704	871150049826725	291237
14131V	6000	480	V	350	284	11,0	Clear	Horizontal	1.000	3000	35	Ring	9245.514.51704	871150005581125	-
14118V	6850	480	V	303	242	12,0	Clear	Horizontal	1.000	3000	35	Ring	9245.412.51704	871150050141725	291708
14166V	6000	480	V	350	284	12,0	Clear	Universal	1.000	3000	35	Ring	9245.689.51704	-	-
14167V	6000	480	V	303	236	11,0	Clear	Horizontal	1.000	3000	150	Ring	9245.697.51704	-	-
6990P metal	1000	120	G95	104	60	19,0	Clear	Universal	1.000	3000	-	-	9245.208.36328	871150018495525	291070
140302P ceramic	1000	120	G95	104	60	19,0	Clear	Universal	1.000	3000	-	-	9245.382.36328	871150049866325	-

Philips infrared incandescent lamps for animal care

Type	Lamp Wattage (W)	Voltage (V)	Cap/ Base	Total lamp length (mm) C	Lamp length (mm) C1	Diameter (mm) D	Bulb material	Finish	Burning position	Average lamp life (h)	12nc	EOC
IR100R PAR38	100	230	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.011.44208	871150060052320
IR100R PAR38	100	240	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.011.45504	871150012891120
IR100C PAR38	100	230	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.012.44208	871150011578220
IR100C PAR38	100	240	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.012.45504	871150012893520
IR175C PAR38	175	230	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.013.44208	871150011579920
IR175C PAR38	175	240	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.013.45504	871150012895920
IR175R PAR38	175	230	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.014.44208	871150060053020
IR175R PAR38	175	240	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.014.45505	871150012898020
IR150C R125	150	230	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.110.44203	871150034830225
IR150C R125	150	240	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.110.45504	871150034828925
IR250C R125	250	230	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.111.44203	871150034834025
IR250C R125	250	240	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.111.45504	871150034832625
IR150R R125	150	230-250	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.443.43802	871150012639925
IR150R R125	150	230	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.443.44202	871150012638225
IR250R R125	250	230-250	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.444.43802	871150012654225
IR250R R125	250	230	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.444.44202	871150012653525

Philips infrared halogen lamps for various industrial applications

Type	Lamp Wattage (W)	Voltage (V)	Cap/ Base	Total lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average lamp life (h)	Colour temp. (K)	Cable (mm) X	Cable connection	12nc	EOC	US Product Number
13908R	300	230	R7S	117,5	60,0	11,0	Clear	Horizontal	1.000	2500	-	-	9238.503.43301	871150049155825	-
13908Z	300	230	SK15	122,0	60,0	11,0	Clear	Horizontal	1.000	2500	140	Splice	9245.271.44216	871150049609625	-
13169X	500	120	X	242,0	142,0	11,0	Clear	Horizontal	5.000	2500	-	-	9238.500.32316	871150021679325	312033
13169X/98	500	120	X	242,0	142,0	11,0	Reflector	Horizontal	5.000	2500	-	-	9238.502.32316	871150021740025	312058
500T3	500	120	U	224,0	127	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.176.36316	871150051763025	216515
13169Z/98	500	235	SK15	227,0	159	11,0	Reflector	Horizontal	5.000	2400	200	Fork	9238.527.44516	871150021741725	-
13169R	500	235	R7S	220,6	165	11,0	Clear	Horizontal	5.000	2400	-	-	9239.468.44516	871150005535425	-
13790R	650	220	R7S	550,4	501	9,0	Clear	Horizontal	5.000	2200	-	-	9239.473.42916	871150049821225	-
13842Z	700	240	SK15	216,0	150	11,0	Clear	Horizontal	5.000	2600	140	Splice	9245.270.45516	871150049608925	-
13195X	1.000	235	X	370,0	280	11,0	Clear	Horizontal	5.000	2450	-	-	9238.510.43916	871150021742425	312132
13713X	1.000	235	X	370,0	280	11,0	Clear	Universal	5.000	2450	-	-	9238.515.43916	871150021472025	312603
13713Z/98	1.000	235	SK15	355,0	280	11,0	Reflector	Universal	5.000	2400	200	Fork	9238.535.44516	871150021474425	312678
13195Z/98	1.000	235	SK15	355,0	280	11,0	Reflector	Horizontal	5.000	2400	200	Fork	9238.543.44516	871150021745525	-
13713X/98	1.000	235	X	370,0	280	11,0	Reflector	Universal	5.000	2450	-	-	9238.960.44516	871150021473725	-
13402Z	1.000	235	SK15	355,0	280	11,0	Clear	Universal	5.000	2500	200	Fork	9245.335.44916	871150049811325	-
1000T3	1.000	240	U	351,0	254	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.178.43816	871150051765425	209957
1000T3/CL	1.000	240	U	303,0	254	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.179.43816	871150051766125	210005
13561Y/98	1.200	144	Y	221,5	150	11,0	Reflector	Horizontal	5.000	2400	150	Fork	9245.033.57716	871150005569928	270637
14134Z/98	1.200	235	SK15	224,0	155	11,0	Reflector	Horizontal	5.000	2700	150	Fork	9245.371.44916	871150005842325	-
13935R	1.530	230	R7S	447,9	385	11,0	Clear	Horizontal	2.000	2400	-	-	9239.472.44224	871150021476825	-
13568Y/98	1.600	144	Y	221,5	155	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.032.57716	871150005568228	270629
13568Z/98	1.600	144	SK15	22980	155	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.483.57716	871150051489925	-
1600T3	1.600	208	U	503,0	406	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.180.41416	871150051767825	216762
14135Z/98	1.600	235	SK15	228,0	155	11,0	Reflector	Horizontal	5.000	2600	150	Fork	9245.372.44916	871150018450425	-
1600T3	1.600	240	U	503,0	406	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.182.45516	871150051769225	209965
1600T3/7	1.600	240	R7S	498,5	406	11,0	Translucent	Horizontal	5.000	2550	-	-	9245.190.43816	871150051776025	210039
13938R	2.000	230	R7S	550,4	497	11,0	Clear	Horizontal	5.000	2500	-	-	9245.085.44216	871150005588025	-
13214Z/98	2.000	230	SK15	657,0	500	11,0	Reflector	Horizontal	5.000	2500	500	Splice	9245.323.44216	871150049823625	-
13168V	2.000	235	V	350,0	286	11,0	Clear	Universal	5.000	2500	138	Ring	9238.504.44516	871150049632425	357038
13168X	2.000	235	X	370,0	288	11,0	Clear	Universal	5.000	2500	-	-	9238.525.43916	871150021677925	311985
13168Z/98	2.000	235	SK15	355,0	280	11,0	Reflector	Universal	5.000	2500	200	Fork	9238.536.44516	871150021678625	312009
13213Z/98F	2.000	235	SK15	355,0	280	11,0	Reflector	Horizontal	5.000	2500	200	Fork	9245.003.44516	871150021747925	378117
14103Z/98	2.000	235	SK15	355,0	280	11,0	Reflector	Horizontal	5.000	2500	230	Splice	9245.347.44916	871150049834225	-
2MT3/ICL/HT/UB0	2.000	240	U	305,0	254	11,0	Clear	Universal	5.000	2500	146	Splice	9245.185.45516	871150051772225	216481
13245X/98	2.000	400	X	512,0	416	11,0	Reflector	Horizontal	5.000	2500	-	-	9238.529.57916	871150021470625	312520
13245X	2.000	400	X	512,0	416	11,0	Clear	Horizontal	5.000	2500	-	-	9238.530.57916	871150049633125	-
13765X	2.000	400	X	512,0	410	11,0	Clear	Universal	5.000	2500	-	-	9238.531.57916	871150021475125	312694
13765X/98	2.000	400	X	508,0	410	11,0	Reflector	Universal	5.000	2500	-	-	9245.054.57916	871150005575025	368555
2500T3	2.500	480	U	731,0	638	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.183.51616	871150051770825	209981
2500T3/CL	2.500	480	U	731,0	638	11,0	Clear	Horizontal	5.000	2550	146	Splice	9245.264.51616	871150051780725	238741
14107Z/98	3.000	230	SK15	787,0	696	11,0	Reflector	Horizontal	5.000	2400	500	Splice	9245.363.44216	871150049852625	-
14107Z	3.000	230	SK15	787,0	700	11,0	Clear	Horizontal	5.000	2400	500	Splice	9245.574.44216	-	-
13565X	3.000	235	X	370,0	277	13,5	Clear	Universal	5.000	2400	-	-	9239.456.44506	871150050664125	-
13565V	3.000	235	V	350,0	277	13,5	Clear	Universal	5.000	2500	138	Ring	9245.143.44506	871150050559025	138867
14121Z/98	3.000	235	SK15	355,0	280	11,0	Reflector	Horizontal	5.000	2650	230	Splice	9245.449.44916	871150051919125	-
13230X	3.000	400	X	802,0	700	11,0	Clear	Universal	5.000	2500	-	-	9238.540.57916	871150021748625	312447
13230X/98	3.000	400	X	802,0	700	11,0	Reflector	Universal	5.000	2500	-	-	9238.541.57916	871150021749325	236489
3200T3/CL	3.200	240	U	1062,0	815	11,0	Clear	Horizontal	5.000	2450	146	Splice	9245.326.45516	200833000168910	254359
14158/99	3.650	480	R7S+LEAD	1061,0	962	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.631.51716	871150018675110	-
3800T3/CL/UB	3.800	575	U	1062,0	963	11,0	Clear	Universal	5.000	2500	146	Splice	9245.173.51116	871150051761610	221291
3800T3	3.800	575	U	1062,0	963	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.184.51116	871150051771510	221283
13195X/98	1.000	235	X	370,0	272	11,0	Reflector	Horizontal	5.000	2450	-	-	9238.514.43916	871150051942925	312165
13168Z	2.000	235	SK15	355	280	11,0	Clear	Universal	5.000	2500	200	Fork	9245.717.44916	871150049656025	-
14180Z	2.000	235	SK15	355	280	11,0	Clear	Horizontal	5.000	2500	300	Faston	9245.753.44916	871150050699325	-

Philips infrared halogen lamps for various industrial applications

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Heating length (mm)	Diameter (mm)	Finish	Burning position	Average lamp life	Colour temp.	Cable (mm)	Cable connection	12nc	EOC	US Product Number
	(W)	(V)		C	W	D			(h)	(K)	X				
14141X	2.000	400	X	370,0	274	11,0	Clear	Universal	5.000	2700	n.a.	-	9245.552.49116	871150018549525	-
13561Z/98	1.200	144	SK15	228,0	150	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.482.57716	871150051488225	-
14132Z/98	2.000	235	SK15	787,5	700	11,0	Reflector	Horizontal	5.000	2450	500	Splice	9245.526.44916	871150005802725	-
1600T3/CL	1.600	240	U	503,0	406	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.181.43816	871150051768525	216788
13215X	3.000	400	X	798,0	700	12,0	Clear	Horizontal	5.000	2450	n.a.	-	9238.542.57916	871150005466125	-
14176V	2000	235	V	350,0	280	-	Clear	Universal	5.000	2450	100	Splice	9245.741.44916	871150050487625	-
13168X/98	2000	235	X	370,0	280	11	Reflector	Universal	5.000	2500	-	-	9245.742.44916	871150050489025	-

Philips infrared halogen lamps with Ruby finish

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Heating length (mm)	Diameter (mm)	Finish	Burning position	Average lamp life	Cable (mm)	Cable connection	12nc	EOC
	(W)	(V)		C	W	D			(h)	X			
13833Z/876	850	120	SK15	198	119	20	Ruby	Horizontal	5.000	85	Tab	9245.226.36324	871150049575425
13833Z/876	850	240	SK15	198	113	20	Ruby	Horizontal	5.000	85	Tab	9245.226.45524	871150049576125
13836Z/876	1.000	240	SK15	531	440	20	Ruby	Universal	5.000	85	Tab	9245.234.45524	871150049571625
13837Z/876	1.100	230	SK15	531	446	20	Ruby	Universal	5.000	85	Tab	9245.235.44224	871150049572325
13835Z/876	1.150	230	SK15	355	280	20	Ruby	Universal	5.000	85	Tab	9245.233.44224	871150049570925
13846Z/876	1.500	200	SK15	787	700	20	Ruby	Universal	5.000	85	Tab	9245.278.39524	871150049622525
13123Z/876	1.500	240	SK15	355	280	20	Ruby	Horizontal	5.000	200	Fork	9238.550.45524	871150049141125
13123Z/876L	1.500	240	SK15	355	280	20	Ruby	Horizontal	5.000	340	Faston	9238.551.45524	871150049143525
13250Z/876	1.500	240	SK15	787	700	20	Ruby	Universal	5.000	85	Tab	9245.280.45524	871150049623225
13934Z/876L	2.000	240	SK15	355	280	20	Ruby	Horizontal	5.000	340	Faston	9239.462.45524	871150049147325

Philips Speedium infrared halogen lamps

Type	Lamp Wattage	Voltage	Cap/ Base	Total lamp length (mm)	Heating length (mm)	Diameter (mm)	Finish	Burning position	Average lamp life	Cable (mm)	Cable connection	12nc	EOC
	(W)	(V)		C	W	D			(h)	X			
17012X	1.500	235	X	370,0	280,0	11,0	Clear	Universal	5.000	-	-	9245.621.44946	871150018645425

Philips infrared incandescent lamps for various industrial applications

Type	Lamp Wattage	Voltage	Cap/ Base	Tota lamp length (mm)	Lamp length (mm)	Diameter (mm)	Bulb material	Finish	Burning position	Average lamp life	12nc	EOC
	(W)	(V)		C	C1	D				(h)		
IR100R PAR38	100	230	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.011.44208	871150060052320
IR100R PAR38	100	240	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.011.45504	871150012891120
IR100R PAR38	100	230	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.012.44208	871150011578220
IR100R PAR38	100	240	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.012.45504	871150012893520
IR100R PAR38	175	230	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.013.44208	871150011579920
IR100R PAR38	175	240	E27	136	123	121	Hard Glass	Clear	Universal	5.000	9238.013.45504	871150012895920
IR100R PAR38	175	230	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.014.44208	871150060053020
IR100R PAR38	175	240	E27	136	123	121	Hard Glass	Red	Horizontal H45	5.000	9238.014.45505	871150012898020
IR150C R125	150	230	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.110.44203	871150034830225
IR150C R125	150	240	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.110.45504	871150034828925
IR250C R125	250	230	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.111.44203	871150034834025
IR250C R125	250	240	E27	181	-	125	Soft Glass	Clear	Universal	5.000	9232.111.45504	871150034832625
IR150R R125	150	230-250	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.443.43802	871150012639925
IR150R R125	150	230	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.443.44202	871150012638225
IR150C R125	250	230-250	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.444.43802	871150012654225
IR150C R125	250	230	E27	181	-	125	Soft Glass	Red	Universal	5.000	9232.444.44202	871150012653525
IR275CH R125	250	230-250	E27	179	-	125	Hard Glass	Clear	Universal	5.000	9232.219.43807	871150012649825
IR275CH R125	300	230-250	E27	179	-	125	Hard Glass	Clear	Universal	5.000	9232.230.43807	871150012656625
IR275CH R125	375	230-250	E27	183	-	125	Hard Glass	Clear	Universal	5.000	9232.235.43807	871150012659725

Data subject to change
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