Contents

"We're dedicated to supporting you with excellent quality and world-class service."

Dear Customer,

The latest edition of the Philips Lighting InfraRed Catalogue gives you access to heat that's clean, controllable and outstandingly energy-efficient. Heat that's instantly available, where and immediately when you need it, from a wide range of compact InfraRed heat sources.

As the world lighting leader, we believe InfraRed is the technology of choice for numerous applications like heating, drying, curing, processing and many more. That's why more and more end-users are benefiting from InfraRed in applications from animal care to semiconductor manufacturing, from InfraRed cabins to food preparation, and from paint drying to plastics forming.

We're dedicated to supporting you – whether you're a distributor, luminaire manufacturer or complete system integrator – in maximizing the added value you can create for your own customers. For that purpose, our Business Line InfraRed is an integrated team that is ready to meet your needs: from innovation and development through production, logistics, marketing and sales right up to continuing customer support.
We offer you not only the best quality in InfraRed solutions, but also the technical & application support and customer service you need to integrate those products in your own applications. Excellent quality combined with our service based approach is what makes us today's market leader.

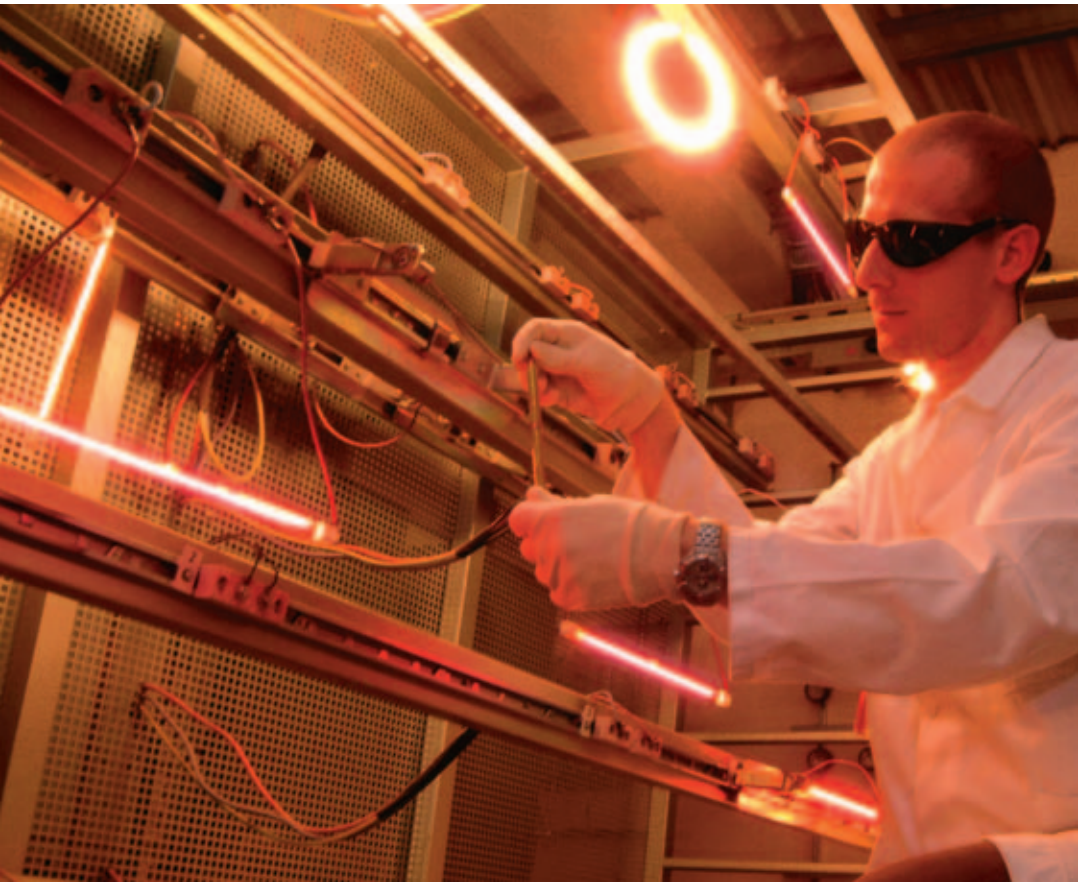
We're constantly working to build further on the partnerships with our key customers by providing you a world class service in every respect.

This catalogue provides you with most of the information you need about the Philips InfraRed products and their applications. You will also find the same product information in our on line catalogue. Or if you need any more details, your contact person at Philips will be happy to answer your questions.

We're ready to help you create your successful new InfraRed applications!

With best regards,

Jeroen van Woerden
General Manager, InfraRed Lamps



1.1 Innovation

For more than100 years, Philips Lighting has been a pioneer and constant innovator in every area of lighting. Today, as the world's largest manufacturer of lighting products, Philips applies its expertise and advanced technology to the creation of innovative InfraRed solutions for all kinds of heating, drying and cooking applications.

High efficiency lamps with low glare: HeLeN lamps

The revolutionary Philips HeLeN lamp is a unique heat lamp based on our world-leading technology and knowledge to meet the demanding needs of applications requiring direct heat and low-glare performance, such as Comfort heating.
The Philips HeLeN heat lamps is a simple, effective and reliable heat source which is both energy-efficient and comfortable. These lamps are set to make a significant difference in the world of Comfort heating.

Discover the outstanding benefits of Philips Vitae lamps in InfraRed cabins

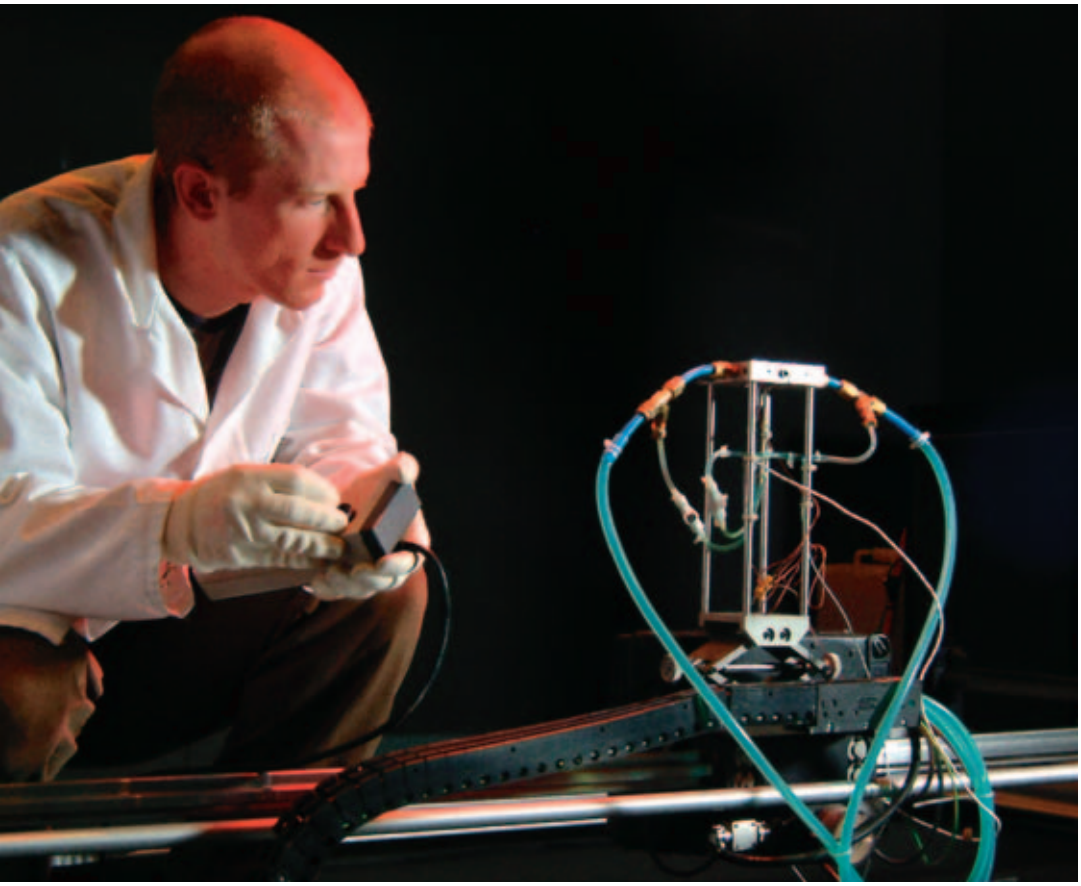
Philips Vitae lamps are specially designed for body relaxation applications such as InfraRed cabins. They deliver the optimum balance across the InfraRed emission spectrum to provide diffuse, pleasant body warming. Philips Vitae lamps heat the body directly in a way that matches best human skin properties.

Speedium for new industrial breakthrough

Philips Speedium lamps use a new filament design to offer the best solution in plastic and curing applications. These lamps deliver more medium-wave heat to materials that are more sensitive to this wavelength. At the same time the Philips Speedium lamps feature the key benefits of all our InfraRed lamp range: fast response, optimal controllability and focusing.

InfraRed halogen turns up the heat in semiconductor production

To optimize energy-efficiency and process control, Philips Lighting offers a range of quartz InfraRed halogen lamps as heat sources for use in critical processes such as Chemical Vapor Deposit and Rapid Thermal Process applications. Their unique combination of high performance, fast heating and excellent controllability brings all the benefit of shorter process times, increased production versatility and lower reject rates.



1.2 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 optimize the quality level of their heating system, Philips application team proposes specific measurement.

Complete analysis of OEM'S heating system:

- Measure of irradiance level (heat output, W / m^2):
  - Philips Spacial Irradiance Measurement-Unique XY bench allows evaluating and qualifying the irradiance from infrared heaters. The objective is to make sure that it matches specific needs of the application.
  - Based on these results, the homogeneity of the beam can be tested 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 optimize 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 characteristics (material, pattern).

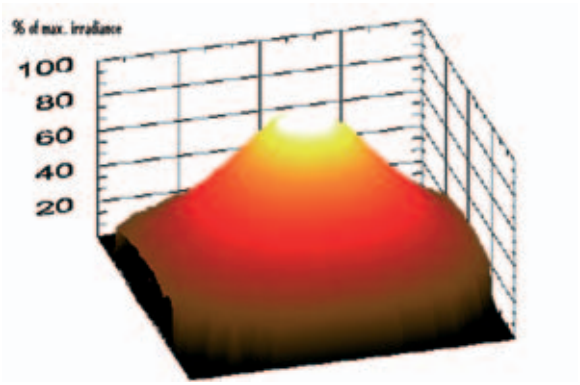
Benefits of Philips InfraRed measurement support for OEM:

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

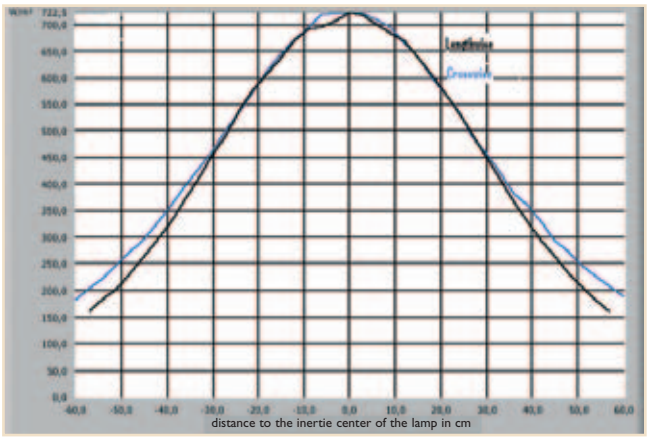
Philips XY bench unique principle and output

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:

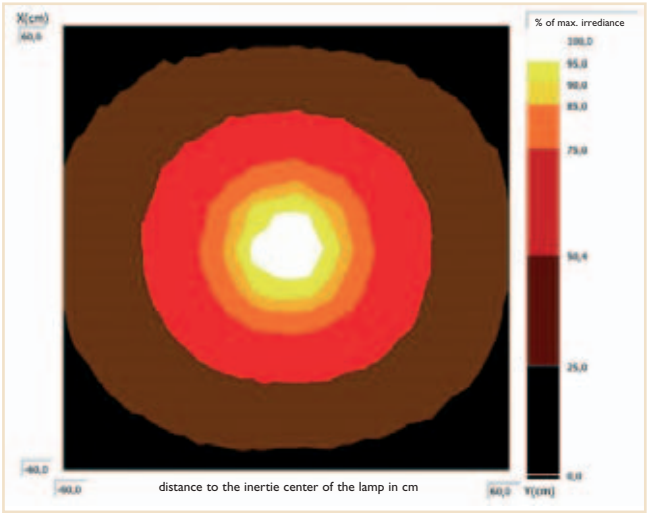
Cartography 3D



Cross irridiance 2D



Cartography 2D



Technical characteristics of Philips XY bench:

- Heater's maximum weight: 50KG
- Maximum scanned surface: 168x168 cm
- Maximum measurable irradiance: 250 000 W/m^2
- Minimum measured irradiance: 180W/m^2
- Wavelength bandwidth: 600 to 15000 nm
- Maximum power: 2*10 KW (50A; 500v)

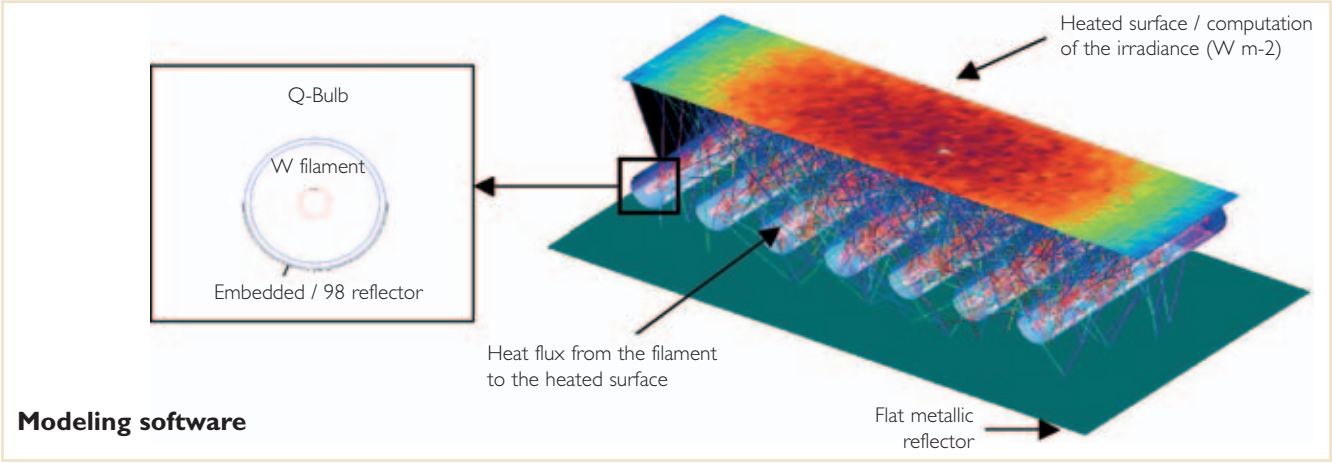
Accuracy of the results provided by Philips is granted by specific measurement control system:

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

1.3 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.



Modeling software

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.

3 adapted levels of modeling support: An efficient way to match OEM'S requirements in the design phase

- Optimization of existing system installation (in combination with Philips measurement support) to increase efficiency, including:
  - Recommended lamp disposal within the system
  - Recommended lamp power to install (depending on the reflector used)
- Improve or upgrade existing reflectors / systems to reach better heat output, homogeneity, efficiency and uniformity)
- Design support for new reflectors to reach the defined heating specifications

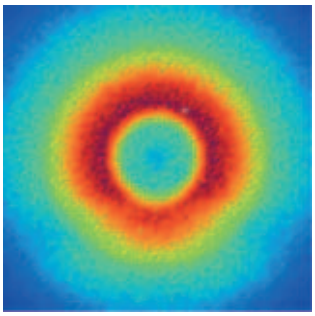
Benefits of creating or optimizing heating systems with Philips InfraRed modeling support:

- Reduced time to market thanks to shortened development phase
- Optimization of development cost as no prototype is needed
- Optimization of overall efficiency during the design phase

Optimization of existing reflector: typical example

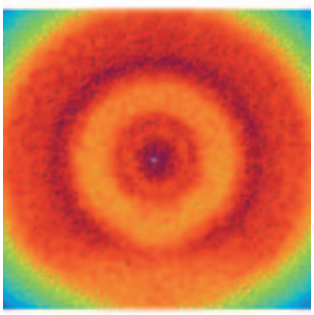
- Entry data: a customer heater under development (CAD drawing), integrating a circular InfraRed halogen lamp,
- Customer request: to analyze the reflector and propose optimization for more homogeneous heat distribution (at a given distance)

Before optimization



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

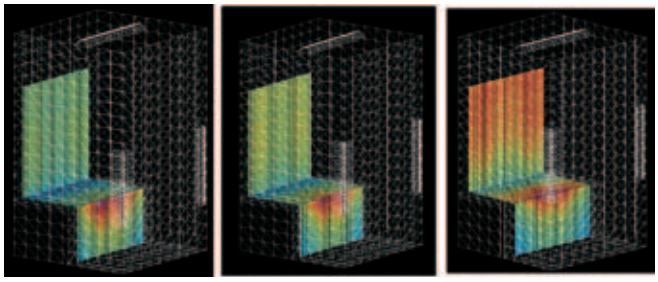
After optimization



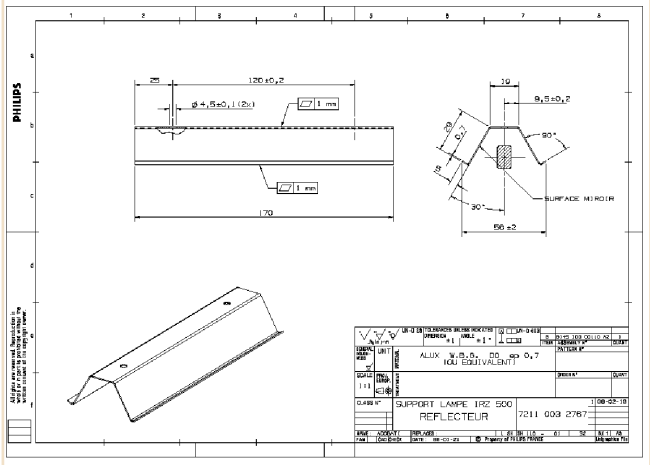
Homogeneous heat distribution over targeted surface with a smoother beam.

Improvement of existing system installation: typical example

- Entry data: an Infrared cabin with certain configuration
- Simulation: the heater setting has been optimized 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 3 simulations.



Design support for new reflectors: typical example



1.4 Partnership

Philips Lighting is more than just a supplier of high-quality InfraRed lamps.

Our experience, our product and application knowledge and our various customer services are available to you, our partner, to enable you to maximize your competitive strength. Our worldwide presence and resources make us the ideal partner in the global marketplace.
Philips InfraRed has chosen to act in strong partnership with a selected number of companies. We believe that working together in close collaboration is the best way for us to understand your products, and your service and innovation needs. This is why our approach is based on a close working relationship to enable us to meet your needs most effectively.

1.5 Quality

Quality is of major importance for us. Our InfraRed lamp production facilities are conform to the ISO 9001 V2000 and ISO 14001 standards.

Our quality department closely monitors technological developments in InfraRed lamp integration during product design and manufacturing, to enable us to provide you with optimal support in continuous product improvement.

BEST - The Philips way to make things better

Philips continuously explores new ways to improve products and to offer innovative products to its consumers. That's why Philips InfraRed has created a program through which we will reach higher and higher quality levels in all products and services. In fact, this quality improvement program affects all our employees and all our processes, in every country, division or department, encompassing everyone from Board of Management-level to the shop floor.

We call it: "BEST" - BUSINESS EXCELLENCE THROUGH SPEED AND TEAMWORK .

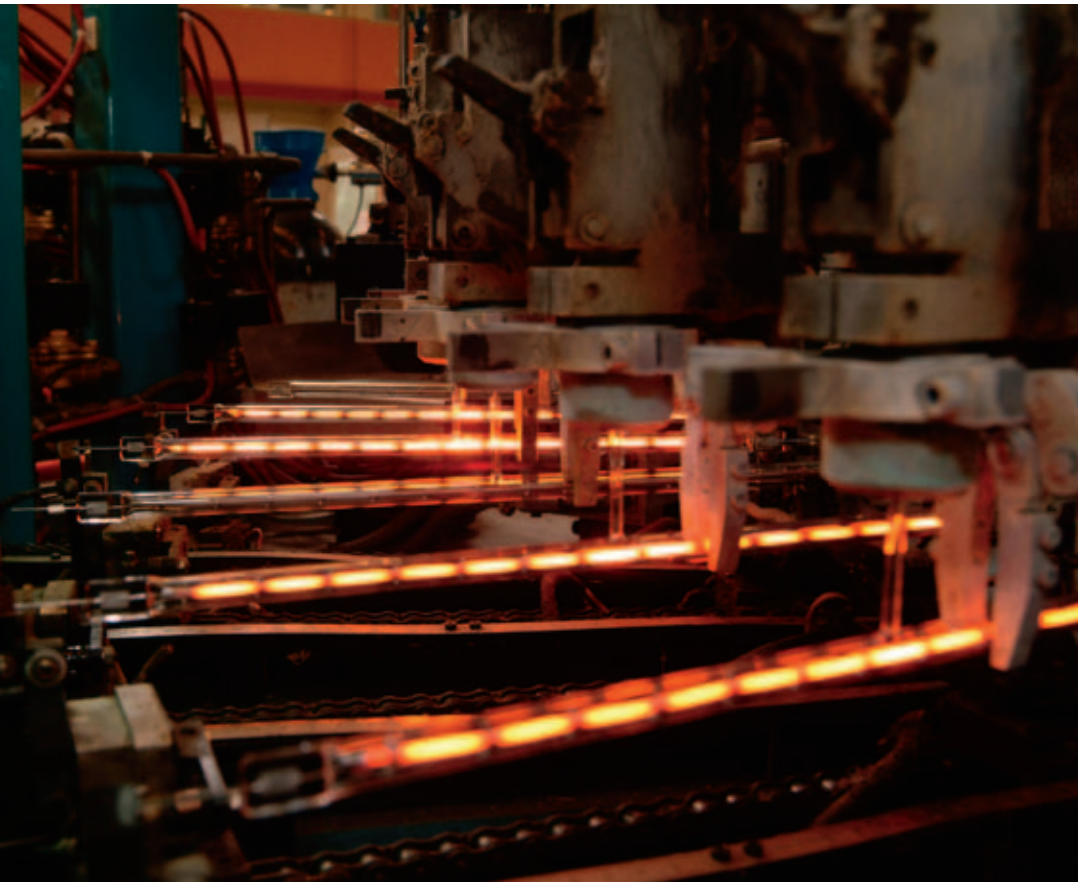
The BEST program is Philips' chosen path to achieve business excellence. It describes a set of methods and tools by which we continuously improve our efforts. Previous successful initiatives are incorporated in the program to make sure we learn as much as possible from our successes in the past.

Business Excellence.

We are all committed to improving processes in-line with the company's strategic targets. To this end, Philips has adopted BEST to reach this goal. It is our ambition to be one of the best companies in the world: the best to trade with, work for, and invest in.

Our Measures:

- Customers are fully satisfied by the quality of Philips' products and services
- Employees develop and use their full potential
- Shareholders get a premium return on their investment
- Suppliers choose to work with us as this generates superior value for both
- The larger community appreciates our contribution to the quality of life



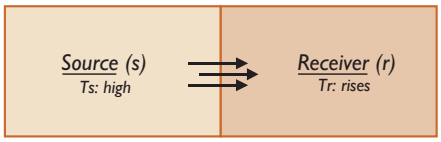
1.6 InfraRed principles

Philips InfraRed lamps are designed and used for all kinds of heating, drying and cooking applications.

Heating principle

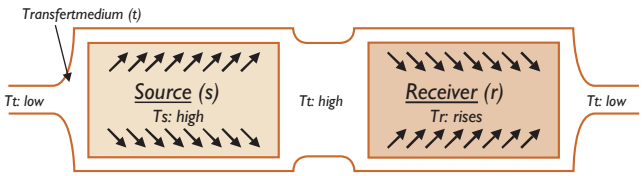
Basically there are 3 main heating principles:

Conduction



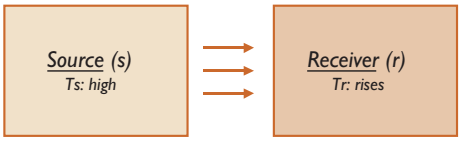
Heat transfer is by direct contact between the source and the object.

Convection



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

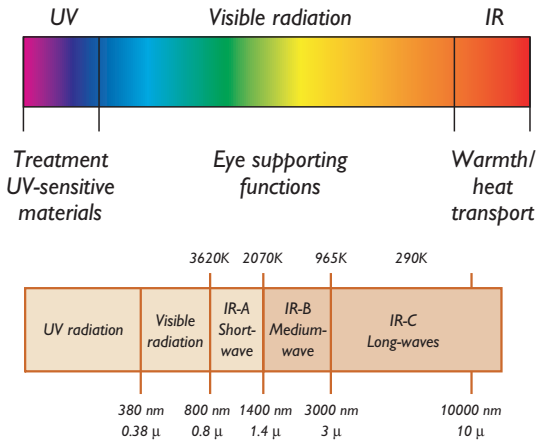
Radiation



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.

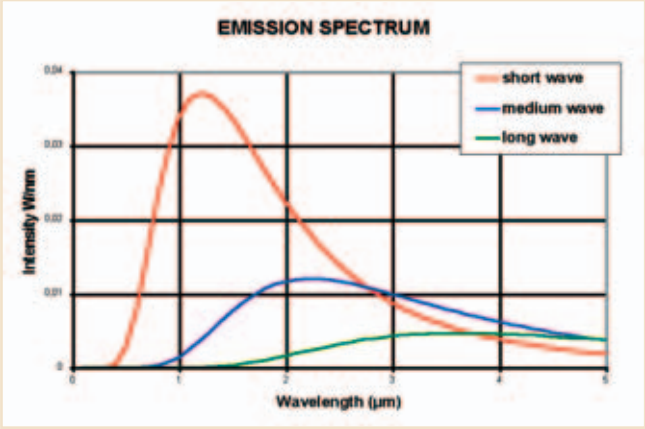
Philips InfraRed lamps use this radiation principle : they directly heat an object or person at which they are directed without heating the surrounding air. This is what makes them highly efficient heat sources.

InfraRed within the optical spectrum



The InfraRed part of the optical spectrum is split into 3 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 3 wavelength ranges has a number of differences which are shown in figure 1.

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 principlle	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

figure 1

Basically Philips InfraRed offers 2 types of InfraRed lamps:

InfraRed Halogen lamps:

the main lamp range, used for a wide range of industrial applications, such as Comfort heating, semiconductor industry, bottle-blowing, thermoforming, infrared heating cabins, car paint drying, cooking etc.

InfraRed Incandescent lamps:

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

Our InfraRed catalogue presents all our InfraRed lamps and accessories 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.

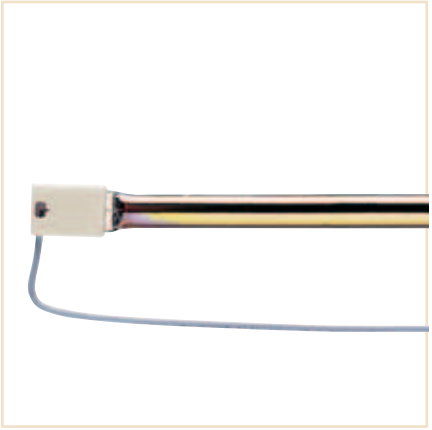
Key benefits of Philips InfraRed lamps:

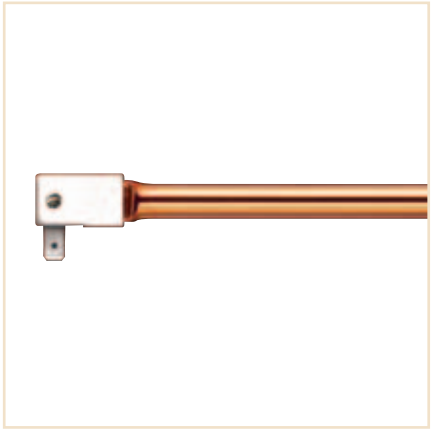
Benefits	Features
Instant heat	>90% emission reached within 1 second
Clean	No emissions or pollution
Safe	Quartz envelope for InfraRed halogens lamps, heat-shock resistant
Economical	>90% of consumed energy is transmitted as Infrared heat
Fully dimmable	Instant, accurate control of heat output over full range (from 0 to 100%)
Ability to use presence detection	On/off switching does not affect lamp lifetime
Low maintenance	Long life
Heat can be focused	Same optical properties as light; heat output can be directed by reflectors
Compact lamps	Allows design of compact heat sources and systems

- Comfortable heating all year round
- Instant heat when you need it
- High efficiency
- As flexible as your needs
- Clean and safe
- Low maintenance

2.1 Comfort heating

Philips HeLeN lamps





2.1 Philips HeLeN

Comfort heating lamps for direct and comfortable heat

- No preheating means effective, energy-efficient heating
- Easy-to-install, instant heating
- Dimmable for heat that matches your needs
- Direct heat – warms people, not the air
- Doesn't take up space on your tables
- No emissions or noise

The revolutionary Philips HeLeN lamps are based on Philips' world-leading technology to meet the specific demands of Comfort heating and other applications that require low glare. These tubular halogen lamps offer numerous important benefits.

Their instant response means heat is delivering fast, so people feel warm in seconds. These lamps heat people, not the air, and are controlled at the flick of a switch. Philips HeLeN heat lamps have all the flexibility, economy and energy-efficiency of a modern heating system. There are no emissions, no flammable contents and no fuel storage problems. They do not disturb or deposit dust, helping to keep a clean environment.

Philips HeLeN lamps take up less space than other forms of heating. They run on the normal electric mains supply. And they are highly energy-efficient: because they convert virtually all the electrical power into heat, hardly any energy is wasted. They can be switched on and off instantly, so they can be used whenever and wherever they are needed.

Philips HeLeN lamps are a simple, effective, reliable, economical and comfortable heat source, which are set to make a significant difference to the world of Comfort heating.

Applications

- Outdoor Comfort heating, restaurant and café terraces and other outdoor seating
- Space heating in factories, sports halls, exhibition halls, work areas, churches, large halls, warehouses, storage areas, garages, greenhouses, open-air applications, stadiums, camp sites, de-icing and many more

Picture by Weinor

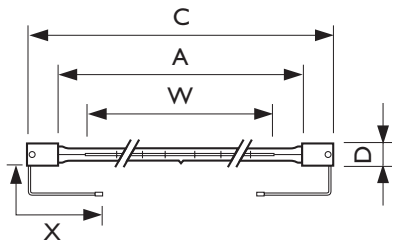


figure 1

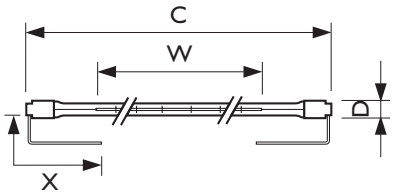


figure 2

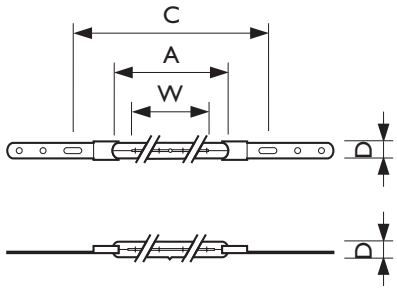


figure 3

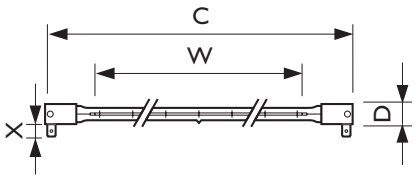


figure 4

Philips HeLeN lamps, instant heat exactly where and when needed

Lamp specifications Space Heating

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Cable (mm) X	Cable connection	12 nc	EOC	US Product Number
15011Z	500	235	1	SK15	227,5	162,0	11,0	HeLeN	Horizontal	5.000	300	Splice	9245.299.43216	871150049641625	-
15016Z	500	235	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.350.44916	871150049847225	-
15024Z	1.000	120	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.453.36316	871150051936825	365163
15007Z	1.000	235	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.242.45516	871150049611925	280503
15008X	1.000	235	3	X	370,0	280,0	11,0	HeLeN	Horizontal	5.000	-	-	9245.273.44516	871150049613325	-
15009Z	1.000	235	1	SK15	355,0	280,0	11,0	HeLeN	Universal	5.000	900	Faston	9245.274.44916	871150049614025	-
15019Z	1.000	235	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.411.44916	-	289256
15014Z	1.000	240	1	SK15	531,0	440,0	11,0	HeLeN	Universal	5.000	85	Tab	9245.330.45516	871150049806925	-
15015Z	1.500	120	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Fork	9245.338.31916	871150049824325	508044
15004Z	1.500	235	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.231.45516	871150005607825	-
15034Z	1.500	235	1	SK15	355,0	280,0	11,0	HeLeN	Universal	5.000	300	Faston	9245.567.44916	871150018591425	-
15010Z	1.500	240	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Fork	9245.297.45516	871150049640925	-
15005Z	2.000	235	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.244.45516	871150049612625	-
15021Z	2.000	235	1	SK15	355,0	280,0	11,0	HeLeN	Universal	5.000	300	Faston	9245.443.44916	871150051906125	-
15023Z	2.000	235	1	SK15	355,0	280,0	11,0	HeLeN	Horizontal	5.000	300	Splice	9245.448.44916	871150051918425	-
15012U	3.000	235	2	U	503,0	423,0	11,0	HeLeN	Universal	5.000	146	Splice	9245.310.45524	871150049744425	249615
15035Z	3.000	235	1	SK15	532,00	446,0	11,0	HeLeN	Horizontal	5.000	300	Faston	9245.640.44916	871150018692825	-
15007R	1.000	235	1	R7S	350	272,0	11,0	HeLeN	Horizontal	5.000	-	-	9245.718.44916	871150049687425	-

Please check out our e-catalogue
www.philips.com/terraceheating

- Comfortable heat
- Short, effective sessions
- Designed to match the body
- Easy to install

2.2 InfraRed cabin

Philips Vitae lamps

2.2 Philips Vitae

InfraRed cabin lamps for comfort and well-being

- The healthy and comfortable way to relax
- No preheating for shorter, more effective sessions and higher energy-efficiency
- Short-wave technology matches the skin and muscles for an ultimate result
- Easy to install, even in smaller spaces

Philips Vitae tubular double-ended heat lamps are designed for body relaxation applications such as InfraRed cabins. These lamps are based on Philips' world-leading technology, allowing operators to deliver a better and faster service, more conveniently, in less space. Philips Vitae lamps deliver the optimum balance across the InfraRed emission spectrum (see graph: Philips Vitae lamps emission spectra).

The lamp emissions reach the subcutaneous layer of the skin (see graph: Depth of penetration into the skin), where heat is dissipated more efficiently. This gives a more diffuse and pleasant warming effect. Philips Vitae lamps provide direct body heating, matching the characteristics of the skin.

Applications

- InfraRed cabins

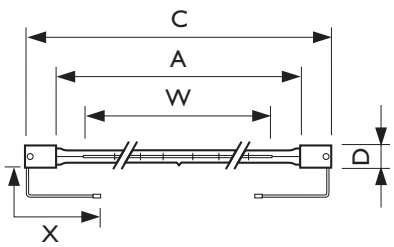


figure 1

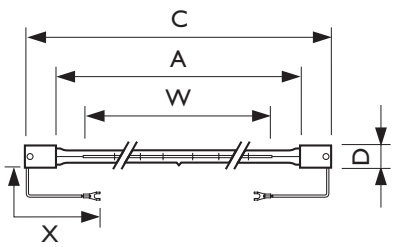
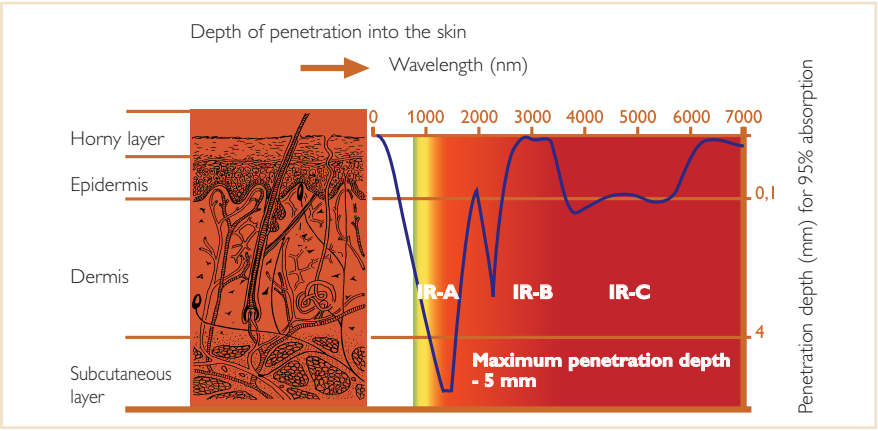
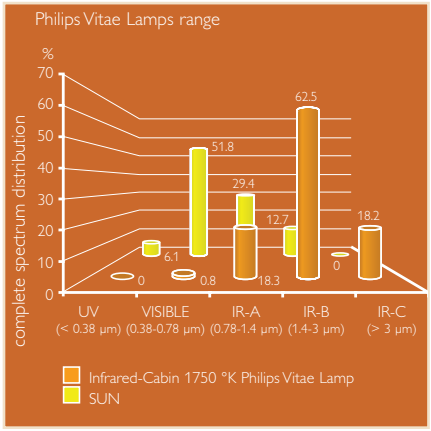


figure 2

Enjoy the benefits of InfraRed in your cabin





Lamp specifications InfraRed cabin

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X1	Cable (mm) X2	Cable connection	12 nc	EOC
14142Z	500	235	1	SK15	787,5	700,0	11,0	Translucent	Universal	5.000	1750	1200	230	Splice	9245.556.44916	871150018555625
14157Z	500	235	1	SK15	628,5	550,0	11,0	Translucent	Universal	5.000	1750	1200	230	Splice	9245.629.44916	871150018671325
14117Z	750	235	1	SK15	787,5	700,0	11,0	Clear	Universal	5.000	2000	1200	230	Splice	9245.405.44216	871150051856925
14124Z	750	235	1	SK15	787,5	700,0	11,0	Translucent	Universal	5.000	1750	1200	230	Splice	9245.479.44216	871150051972625
14155Z	750	235	1	SK15	787,5	700,0	11,0	Clear	Universal	5.000	1750	1200	230	Splice	9245.622.44216	871150018651525
13393Z	1.300	235	2	SK15	787,5	700,0	11,0	Clear	Universal	5.000	2000	200	200	Fork	9239.454.44516	871150005532325

Please check out our e-catalogue
www.philips.com/infraredcabin

- Localized heat therapy
- Gentle, pleasant warming effect
- Instant heat

2.3 Healthcare and Bodycare

Philips Healthcare heat lamps

2.3 Philips InfraRed

Lamps for effective healthcare and bodycare treatment

- Provides instant heat to relieve muscular pain
- Economic heat source (90% of energy is transmitted as InfraRed heat)
- Delivers concentrated heat where it is needed

Philips InfraRed heat lamps are designed for healthcare and bodycare applications such as treating deep-seated muscular ailments and sports injuries. These incandescent reflector lamps are an excellent solution to provide localized heat treatment to relieve muscular pain. They can also be used to treat ailments like lumbago, neuralgia and myalgia and colds.

This form of heat therapy has also been shown to speed the healing of different kinds of injuries such as sports injuries and non-infected wounds, in many cases providing rapid and effective pain relief.

The benefits of this form of heat therapy are based on locally enhanced blood circulation in the skin caused by vasodilatory response. This results in an increased transport rate of metabolytes and other essential biochemical compounds. Benefits are also gained by deeper penetration of heat, which provides a gentle and pleasant warming effect.

Applications

- Relieving muscular pain, rheumatism, lumbago, neuralgia, colds and other ailments
- Promoting recovery from injury
- Providing comfort and cosmetic care
- Can be used with any suitable equipment

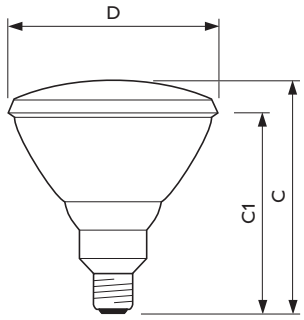


figure 1

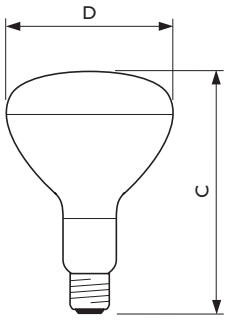
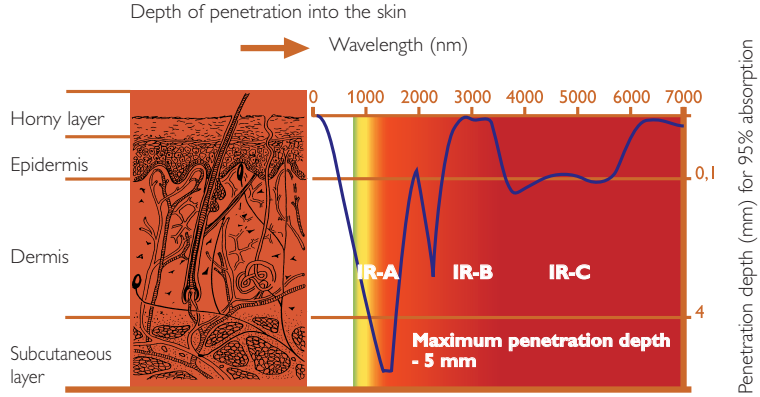


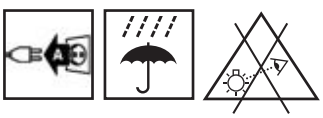
figure 2

Optimal heat source for treating deeper-seated muscular ailments and sports injuries



Lamp specifications Healtcare / Bodycare

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Diameter length D	Bulb material	Finish	Burning position	Average Lamp life (in h)	12 nc	EOC
R95 UNP/144	100	230	2	E27	130.0	-	95.0	Soft Glass	Red	Universal	300	923244244201	871150016634097
R95 1CT/25	100	230	2	E27	130.0	-	95.0	Soft Glass	Red	Universal	300	923244244203	871150014559840
PAR 38E UNP	150	230	1	E27	136.0	123.0	121.0	Hard Glass	Red	Universal	300	923806644205	871150016675398
PAR 38E 1CT/15	150	230	1	E27	136.0	123.0	121.0	Hard Glass	Red	Universal	300	923806644207	87115001288742



- Instant and direct heat
- High efficiency
- Tasty cooking
- Visable grilling
- Clean and safe

2.4 Cooking

Philips InfraRed heat lamps

2.4 Philips InfraRed

Cooking lamps for controllable, economical heating

- Optimal heat balance for cooking
- Heat-shock resistant thanks to the quartz envelope
- Economic heat source (90% of energy is transmitted as InfraRed heat)
- Fully dimmable: output accurately controllable from 0 to 100%
- Compact heat source
- Low maintenance

Philips InfraRed cooking lamps are designed specifically for cooking applications such as microwave ovens, food warming and catering. These tubular halogen heat lamps are highly economical as more than 90% of the consumed electrical power is converted into heat. Full power is reached within just one second and cooling is rapid. Philips InfraRed halogen lamps allow stylish, appealing equipment designs. Their visible light output gives a clear indication of the heat setting, which is accurately controllable. These compact heat sources have a long life, and they are easy to keep clean.

Philips **Clear Sleeve** lamps feature a double-jacket quartz envelope for total security and easy handling in food warming and catering applications. Maintenance is simplified as the lamp can easily be cleaned with a duster. And thanks to the low internal tube pressure, there is no risk of lamp explosion. Safety is key in the food preparation market!

Philips **Stela** lamps provide an ideal solution for the latest generation of high-performance cooking appliances with enhanced grill options. These lamps feature a specific medium-wave spectrum to ensure even heating.

Applications

- Preparation of food in vitro-ceramic cookers and ovens
- Grilling function in microwave and conventional ovens
- Catering and food warming
- Fast baking

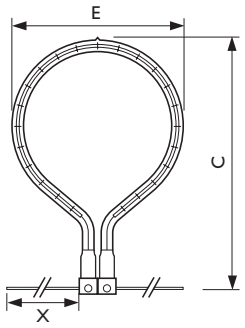


figure 1

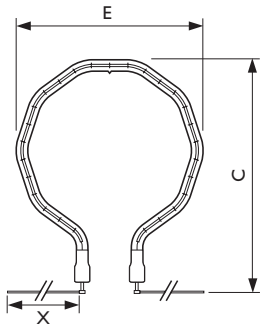
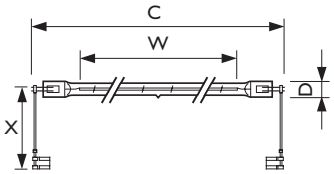


figure 2



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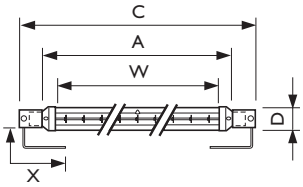


figure 4

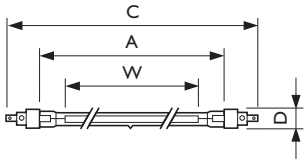


figure 5

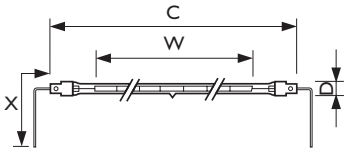


figure 6

Instant heat at switch-on

Lamp specifications Cooking

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap / Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Lamp diameter E	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X	Cable connection	12 nc	EOC
Cooking round																
	750	120	1	V	153	-	11,0	153	Clear	Horizontal	5000	2350	90	splice	-	-
	1050	120	1	V	118	-	11,0	118	Clear	Horizontal	5000	2350	90	splice	-	-
	1300	120	1	V	164	-	11,0	164	Clear	Horizontal	5000	2350	90	splice	-	-
Cooking Facetted																
13939F-VB	400	110	2	V	94,0	-	11,0	-	Clear	Horizontal	5.000	2000	105	Faston	9245.137.31916	871150005592740
13939F-VB	400	230	2	V	94,0	-	11,0	-	Clear	Horizontal	5.000	2250	105	Faston	9245.137.44216	871150005593440
Cooking straight																
13395V	415	135	3	V	187,0	105,0	11,0	-	Clear	Horizontal	5.000	2350	209	Faston	9238.509.36616	871150005464728
13396V	450	110	3	V	217,0	136,0	11,0	-	Clear	Horizontal	5.000	2350	209	Flag	9239.256.31916	871150005490628
13271V	645	230	3	V	179,0	95,0	11,0	-	Clear	Horizontal	5.000	2350	209	Flag	9239.064.43316	871150005482128
Cooking Clear Sleeve																
13169Z/850	500	235	4	SK15	225,0	160,0	20,0	-	Clear	Horizontal	5.000	2400	230	Splice	9245.523.44924	871150005583525
Cooking	Stela															
17007/99	600	230	6	SK9 + LEAD	425,0	345,0	11,0	-	Translucent	Horizontal	5.000	1700	350	Splice	9245.476.44216	871150051971965

- High-power and high-efficiency heat source
- Instant heat
- Easy control
- Optimal InfraRed spectrum

2.5 Plastics

Philips InfraRed heat lamps

2.5 Philips InfraRed

Lamps for versatile, energy-efficient forming of plastics

- Efficient heat source (90% of energy is transmitted as InfraRed heat)
- Heat can be focused by using reflectors
- Fully dimmable: output accurately controllable from 0 to 100%
- Compact heat source
- Low maintenance

Philips InfraRed lamps provide productive, energy-efficient heating for a wide range of plastics forming applications, such as bottle blowing, thermoforming and many more. New sheet processing technologies and the use of thermoformable materials greatly extend the range of products that can be formed. Thermoforming therefore maximizes creativity and versatility, making it a preferred process for plastic forming. Philips tubular halogen heat lamps increase productivity, with optimal versatility, safety and energy savings. Thanks to their high irradiance output, Philips InfraRed lamps require lower installed power to transmit the same level of heat. This high efficiency means less power is required to provide the same material temperature compared with quartz or ceramic emitters. The instant heat reduces cycle time and increases higher process speed. Philips InfraRed halogen lamps give a better temperature gradient through the plastic thickness for enhanced temperature homogeneity, which is a key factor in plastics processing. These InfraRed lamps can be instantly adjusted to the required heat level simply by dimming, which means a more accurate, versatile process.

Philips InfraRed lamps save time and money by improving and optimizing heating processes.

Applications

- Blowing of plastic bottles
- Plastics thermoforming
- Softening and melting of plastics

Picture by Sidel

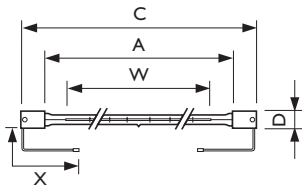


figure 1

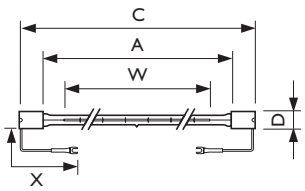


figure 2

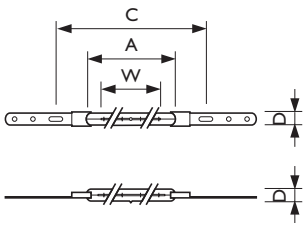


figure 3

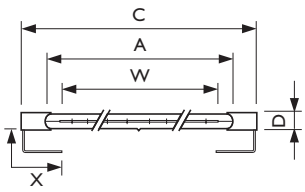


figure 4

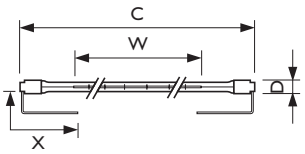


figure 5

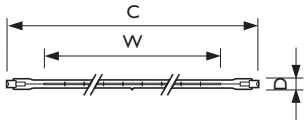
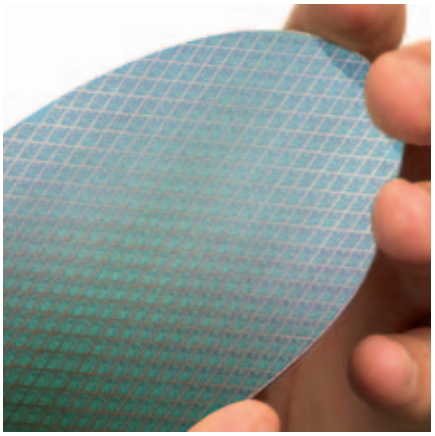


figure 6

The instant, efficient way to form plastics

Lamp specifications Plastics

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X	Cable connection	12 nc	EOC	US Product Number
13908Z	300	230	1	SK15	122,0	60,0	11,0	Clear	Horizontal	1.000	2500	140	Splice	9245.271.44216	871150049609625	
13169X	500	120	3	X	242,0	142,0	11,0	Clear	Horizontal	5.000	2500	-	-	9238.500.32316	871150021679325	312033
13169Y	500	120	4	Y	221,0	142,0	11,0	Clear	Horizontal	5.000	2500	160	Splice	9238.501.32316	871150049631725	312074
13169X/98	500	120	3	X	242,0	142,0	11,0	Reflector	Horizontal	5.000	2500	-	-	9238.502.32316	871150021740025	312058
500T3	500	120	5	U	224,0	127,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.176.36316	871150051763025	216515
500T3/7	500	120	6	R7S	219,1	.127,0	11,0	Translucent	Horizontal	5.000	2500	-	-	9245.177.34616	871150051764725	209940
13169Z/98	500	235	2	SK15	227,0	159,0	11,0	Reflector	Horizontal	5.000	2400	200	Fork	9238.527.44516	871150021741725	-
13842Z	700	240	1	SK15	216,0	150,0	11,0	Clear	Horizontal	5.000	2600	140	Splice	9245.270.45516	871150049608925	-
13195X	1.000	235	3	X	370,0	280,0	11,0	Clear	Horizontal	5.000	2500	-	-	9238.510.43916	871150021742425	312132
1000T3	1.000	240	5	U	351,0	254,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.178.43816	871150051765425	209957
1000T3/CL	1.000	240	5	U	303,0	254,0	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.179.43816	871150051766125	210005
14134Z/98	1.200	235	2	SK15	224,0	155,0	11,0	Reflector	Horizontal	5.000	2700	150	Fork	9245.371.44916	871150005842325	-
14135Z/98	1.600	235	2	SK15	228,0	155,0	11,0	Reflector	Horizontal	5.000	2700	150	Fork	9245.372.44916	871150018450425	-
13168X	2.000	235	3	X	370,0	288,0	11,0	Clear	Universal	5.000	2500	-	-	9238.525.43916	871150021677925	311985
2MT3/ICL/HT/UB0	2.000	240	5	U	303,0	254,0	11,0	Clear	Universal	5.000	2500	146	Splice	9245.185.45516	871150051772225	216481



- High-power, high-efficiency heat source
- Long life
- Accurate temperature control
- High process reproducibility
- Instant heat

2.6 Semiconductors

Philips InfraRed heat lamps

2.6 Philips InfraRed

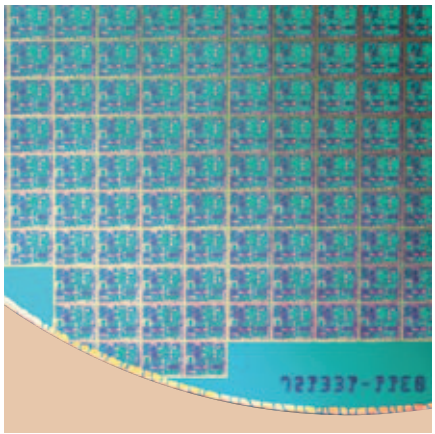
Lamps for precisely controllable semi-conductor heating

- Efficient heat source: 90% of energy is transmitted as InfraRed heat
- Heat can be focused by using reflectors
- Instant heat: full power within a few hundred milliseconds after switch-on
- Fully dimmable: output accurately controllable from 0 to 100%
- Clean, emission-free heating
- Compact heat source

Philips InfraRed halogen lamps are designed specifically for heating applications in the semiconductor industry such as epitaxy, CVD, RTP and ion implant annealing. These lamps are high-power heat sources.
Tube blackening and resulting reduction in InfraRed output are negligible, ensuring very high stability throughout the lamp lifetime for semiconductor processing. High radiant energy concentrations are provided by InfraRed lamps. Full power is reached within a few hundred milliseconds of switch-on. Lamp power is fully controllable, with instant adjustment of the required radiation level between 0 and 100%. This means that silicon wafer temperature can be modulated accurately over a wide range to meet process specifications precisely.
Process reproducibility is ensured by the ability to deliver exactly the same heat dose to the silicon wafer every time.

Applications

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



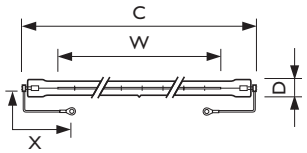


figure 1

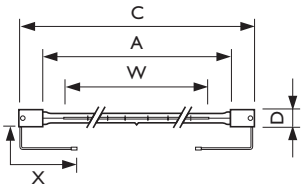


figure 2

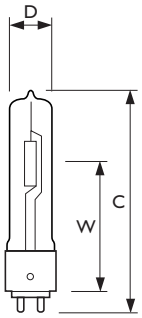


figure 3

Stable, reproducible InfraRed heating for the semiconductor industry

Lamp specifications Semiconductors

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X	Cable connection	12 nc	EOC	US Product Number
13941Z	1.500	235	2	SK15	352,0	274,0	11,0	Clear	Horizontal	1.000	2900	1200	Splice	9245.268.43916	871150049600325	-
13136V	4.600	400	1	V	303,0	242,0	12,0	Clear	Horizontal	1.000	2900	35	Ring	9238.508.49124	871150049156525	256545
13138V	6.000	480	1	V	303,0	236,0	12,0	Clear	Horizontal	1.000	3000	35	Ring	9245.340.51724	871150049826725	291237
14131V	6.000	480	1	V	350,0	284,0	11,0	Clear	Horizontal	1.000	3000	35	Ring	9245.514.51724	871150005581125	-
14118V	6.850	480	1	V	303,0	242,0	12,0	Clear	Horizontal	1.000	3000	35	Ring	9245.412.51724	871150051863725	291708
14166V	6000	480	1	V	350	284	12,0	clear	Horizontal	1000	3000	35	ring	924568951724	-	-
14167V	6000	480	1	V	303	242	11,0	clear	Horizontal	1000	3000	150	ring	924569751724	-	-
14139	750	120	-	-	113,7	72	13,0	clear	Universal	1000	3000	-	-	9245.539.36324	871150018495525	-
6990P metal	1000	120	3	G95	104	60	19,0	clear	Universal	1000	3000	-	-	9245.208.36328	871150049850225	291070
14302P ceramic	1000	120	3	G95	104	60	19,0	clear	Universal	1000	3000	-	-	9245.382.36328	871150049866325	-

- Optimum heating economy and high energy-efficiency
- Robust, sturdy lamp construction
- Healthy warmth for piglets and chicks
- Longer life (5.000 hours)

2.7 Animal Care

Philips InfraRed heat lamps

2.7 Philips InfraRed

Heat lamps for profitable animal care

- Energy savings of up to 30%
- Instant heat
- Improved feed conversion
- Lower mortality rates
- High growth rates
- Better, more even heat distribution over a larger area, even spread
- Low maintenance

Philips PAR InfraRed heat lamps are designed for profitable animal care, such as in pig and poultry farms. Every pig breeder and poultry farmer is familiar with the beneficial effects of warmth on newly born and growing piglets and chicks. A very good method of generating warmth is by using heat lamps. The Philips InfraRed incandescent reflector lamps provide direct, draught-free warmth to the animals. These benefits have made pig and poultry farmers around the world choose Philips InfraRed lamps, because they are the sturdiest, most energy-efficient lamps available for this application.

The Philips PAR lamps combine energy savings and strong construction. The design incorporates a completely sealed reflector. That means these PAR lamps have a considerably higher heating efficiency than the usual blown bulb lamps: the same heating effect with 30% less electrical power!

Applications

- Breeding and rearing of pigs, calves, foals, dogs, poultry and other animals
- Veterinary clinics, zoos, pet shops and beauty parlors

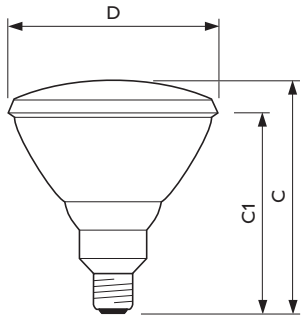


figure 1

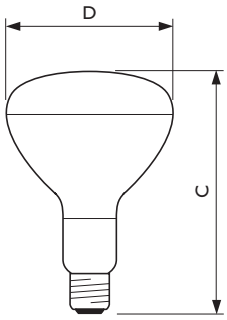


figure 2

Switch on to fatter profits with Philips PAR InfraRed heat lamps

Lamp specifications Animal care

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Diameter (mm) D	Bulb material	Finish	Burning position	Average Lamp life (in h)	12 nc	EOC
IR100R PAR38	100	230	1	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801144207	871150060052320
IR100R PAR38	100	240	1	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801145502	871150012891120
IR100C PAR38	100	230	1	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801244207	871150011578220
IR100C PAR38	100	240	1	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801245501	871150012893520
IR175C PAR38	175	230	1	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801344207	871150011579920
IR175C PAR38	175	240	1	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801345501	871150012895920
IR175R PAR38	175	230	1	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801444204	871150060053020
IR175R PAR38	175	230	1	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801444207	871150060053020
IR175R PAR38	175	240	1	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801445501	871150012898020
IR175R PAR38	175	240	1	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801445502	871150012898020
IR150C R125	150	230	2	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211044202	871150034830225
IR150C R125	150	240	2	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211045502	871150034828925
IR150C R125	150	240	2	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211045503	871150034828925
IR250C R125	250	230	2	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211144202	871150034834025
IR250C R125	250	240	2	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211145502	871150034832625
IR250C R125	250	240	2	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211145503	871150034832625
IR150R R125	150	230-250	2	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244343801	871150012639925
IR150R R125	150	230	2	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244344201	871150012638225
IR250R R125	250	230-250	2	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244443801	-
IR250R R125	250	230	2	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244444201	871150012653525

Please check out our e-catalogue
www.philips.com/animalrearing

- High-power, high-efficiency heat source
- Instant heat
- Easy control
- Economical
- Low maintenance

2.8 Various industrial applications

Philips InfraRed heat lamps

2.8 Philips InfraRed

Efficient, economical heating for a wide range of industrial applications

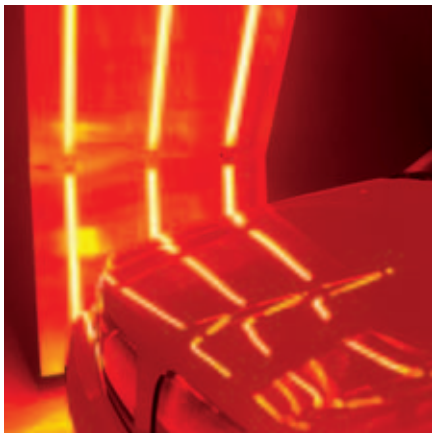
- Economical heat source (90% of energy is transmitted as InfraRed heat)
- Heat can be focused by using reflectors
- Fully dimmable: output accurately controllable from 0 to 100%
- Clean, safe heating
- Compact heat source

Philips InfraRed heat lamps are the ideal, high-power heat source for a wide range of industrial heating applications such as paint and paper drying, curing, sterilization and many more. These are halogen lamps, which means that tube blackening and resulting reduction in InfraRed output are negligible, ensuring very high process stability throughout the lamp lifetime. Full power is reached within a few hundred milliseconds of switch-on. Lamp power is fully controllable, with instant adjustment of the required heat level between 0 and 100%. Philips InfraRed lamps are compact heat sources.

Philips InfraRed lamps are the optimal solution for all heating, drying and curing applications.

Applications

- Paint drying in tunnels and body shops
- Paper drying in paper mills
- Powder coating
- Drying of lacquers and printing inks
- Heat sterilization



Picture by PSA

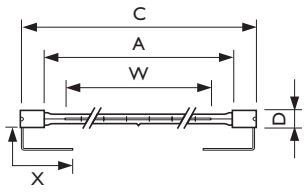


figure 1

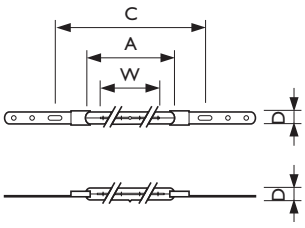


figure 2

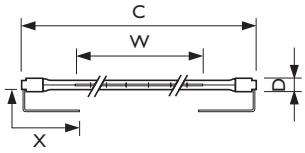


figure 3

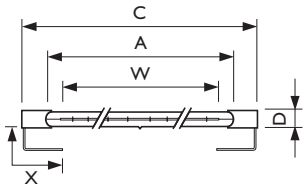


figure 4

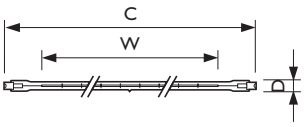


figure 5

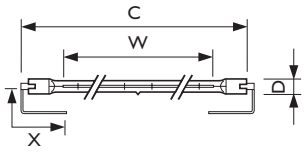


figure 6

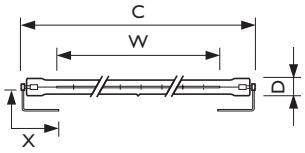


figure 7

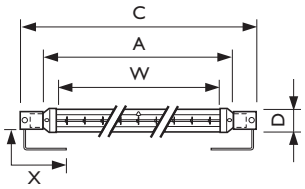


figure 8

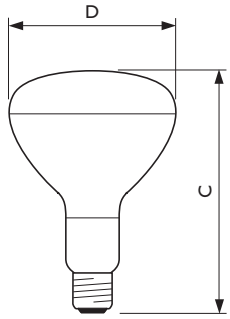


figure 9

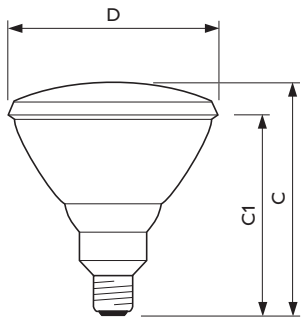


figure 10

Instant heat for process optimisation

Lamp specifications Various industrial

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X	Cable connection	12 nc	EOC	US Product Number
13908R	300	230	5	R7S	117,5	60,0	11,0	Clear	Horizontal	1.000	2500	-	-	9238.503.43301	871150049155825	-
13908Z	300	230	1	SK15	122,0	60,0	11,0	Clear	Horizontal	1.000	2500	140	Splice	9245.271.44216	871150049609625	-
13169X	500	120	2	X	242,0	142,0	11,0	Clear	Horizontal	5.000	2500	-	-	9238.500.32316	871150021679325	312033
13169X/98	500	120	2	X	242,0	142,0	11,0	Reflector	Horizontal	5.000	2500	-	-	9238.502.32316	871150021740025	312058
500T3	500	120	3	U	224,0	127,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.176.36316	871150051763025	216515
13169Z/98	500	235	1	SK15	227,0	159,0	11,0	Reflector	Horizontal	5.000	2400	200	Fork	9238.527.44516	871150021741725	-
13169R	500	235	5	R7S	220,6	165,0	11,0	Clear	Horizontal	5.000	2400	-	-	9239.468.44516	871150005535425	-
13790R	650	220	5	R7S	550,4	501,0	9,0	Clear	Horizontal	5.000	2200	-	-	9239.473.42916	871150049821225	-
-13842Z	700	240	1	SK15	216,0	150,0	11,0	Clear	Horizontal	5.000	2600	140	Splice	9245.270.45516	871150049608925	-
13195X	1.000	235	2	X	370,0	280,0	11,0	Clear	Horizontal	5.000	2450	-	-	9238.510.43916	871150021742425	312132
13713X	1.000	235	2	X	370,0	280,0	11,0	Clear	Universal	5.000	2450	-	-	9238.515.43916	871150021472025	312603
13713Z/98	1.000	235	1	SK15	355,0	280,0	11,0	Reflector	Universal	5.000	2400	200	Fork	9238.535.44516	871150021474425	312678
13195Z/98	1.000	235	1	SK15	355,0	280,0	11,0	Reflector	Horizontal	5.000	2400	200	Fork	9238.543.44516	871150021745525	-
13713X/98	1.000	235	2	X	370,0	280,0	11,0	Reflector	Universal	5.000	2450	-	-	9238.960.44516	871150021473725	-
13402Z	1.000	235	1	SK15	355,0	280,0	11,0	Clear	Universal	5.000	2500	200	Fork	9245.335.44916	871150049811325	-
1000T3	1.000	240	3	U	351,0	254,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.178.43816	871150051765425	209957
1000T3/CL	1.000	240	3	U	303,0	254,0	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.179.43816	871150051766125	210005
13561Y/98	1.200	144	4	Y	221,5	150,0	11,0	Reflector	Horizontal	5.000	2400	150	Fork	9245.033.57716	871150005569928	270637
14134Z/98	1.200	235	1	SK15	224,0	155,0	11,0	Reflector	Horizontal	5.000	2700	150	Fork	9245.371.44916	871150005842325	-
13935R	1.530	230	5	R7S	447,9	385,0	11,0	Clear	Horizontal	5.000	2400	-	-	9239.472.44224	871150021476825	-
13568Y/98	1.600	144	4	Y	221,5	155,0	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.032.57716	871150005568228	270629
13568Z/98	1.600	144	1	SK15	22980	155,0	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.483.57716	871150051489925	-
1600T3	1.600	208	3	U	503,0	406,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.180.41416	871150051767825	216762
14135Z/98	1.600	235	1	SK15	228,0	155,0	11,0	Reflector	Horizontal	5.000	2600	150	Fork	9245.372.44916	871150018450425	-
1600T3	1.600	240	3	U	503,0	406,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.182.45516	871150051769225	209965
1600T3/7	1.600	240	5	R7S	498,5	406,0	11,0	Translucent	Horizontal	5.000	2550	-	-	9245.190.43816	871150051776025	210039
13938R	2.000	230	5	R7S	550,4	497,0	11,0	Clear	Horizontal	5.000	2500	-	-	9245.085.44216	871150005588025	-
13214Z/98	2.000	230	1	SK15	657,0	500,0	11,0	Reflector	Horizontal	5.000	2500	500	Splice	9245.323.44216	871150049823625	-
13168V	2.000	235	7	V	350,0	286,0	11,0	Clear	Universal	5.000	2500	138	Ring	9238.504.44516	871150049632425	357038
13168X	2.000	235	2	X	370,0	288,0	11,0	Clear	Universal	5.000	2500	-	-	9238.525.43916	871150021677925	311985
13168Z/98	2.000	235	1	SK15	355,0	280,0	11,0	Reflector	Universal	5.000	2500	200	Fork	9238.536.44516	871150021678625	312009
13213Z/98F	2.000	235	1	Z	355,0	280,0	11,0	Reflector	Horizontal	5.000	2500	200	Fork	9245.003.44516	871150021747925	378117
14103Z/98	2.000	235	1	SK15	355,0	280,0	11,0	Reflector	Horizontal	5.000	2500	230	Splice	9245.347.44916	871150049834225	-
2MT3/ICL/HT/UB0	2.000	240	3	U	303,0	254,0	11,0	Clear	Universal	5.000	2500	146	Splice	9245.185.45516	871150051772225	216481
13245X/98	2.000	400	2	X	512,0	416,0	11,0	Reflector	Horizontal	5.000	2500	-	-	9238.529.57916	871150021470625	312520
13245X	2.000	400	2	X	512,0	416,0	11,0	Clear	Horizontal	5.000	2500	-	-	9238.530.57916	871150049633125	-
13765X	2.000	400	2	X	512,0	410,0	11,0	Clear	Universal	5.000	2500	-	-	9238.531.57916	871150021475125	312694
13765X/98	2.000	400	2	X	508,0	410,0	11,0	Reflector	Universal	5.000	2500	-	-	9245.054.57916	871150005575025	368555
2500T3	2.500	480	3	U	731,0	638,0	11,0	Translucent	Horizontal	5.000	2550	146	Splice	9245.183.51616	871150051770825	209981
2500T3/CL	2.500	480	3	U	731,0	638,0	11,0	Clear	Horizontal	5.000	2550	146	Splice	9245.264.51616	871150051780725	238741
14107Z/98	3.000	230	1	SK15	787,0	696,0	11,0	Reflector	Horizontal	5.000	2400	500	Splice	9245.363.44216	871150049852625	-
14107Z	3.000	230	1	SK15	787,0	700,0	11,0	Clear	Horizontal	5.000	2400	500	Splice	9245.574.44216	-	-
13565X	3.000	235	2	X	370,0	277,0	13,5	Clear	Universal	5.000	2500	-	-	9239.456.44516	871150005533025	-
13565V	3.000	235	7	V	350,0	277,0	13,5	Clear	Universal	5.000	2500	138	Ring	9245.143.44516	871150005594125	138867
14121Z/98	3.000	235	1	Z	355,0	280,0	11,0	Reflector	Horizontal	5.000	2650	230	Splice	9245.449.44916	871150051919125	-
13230X	3.000	400	2	X	802,0	700,0	11,0	Clear	Universal	5.000	2500	-	-	9238.540.57916	871150021748625	312447
13230X/98	3.000	400	2	X	802,0	700,0	11,0	Reflector	Universal	5.000	2500	-	-	9238.541.57916	871150021749325	236489
3200T3/CL	3.200	240	3	U	1062,0	815,0	11,0	Clear	Horizontal	5.000	2450	146	Splice	9245.326.45516	200833000168910	254359
3200T3/CL	3.200	277	3	U	1062,0	813,0	11,0	Clear	Horizontal	5.000	2300	146	Splice	9245.326.46916	-	254789
14158/99	3.650	480	6	R7S + LEAD	1061,0	962,0	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.631.51716	871150018675110	-
3800T3/CL/UB	3.800	575	3	U	1062,0	963,0	11,0	Clear	Universal	5.000	2500	146	Splice	9245.173.51116	871150051761610	221291
3800T3	3.800	575	3	U	1062,0	963,0	11,0	Translucent	Horizontal	5.000	2500	146	Splice	9245.184.51116	871150051771510	221283
13195X/98	1.000	235	2	X	370,0	272,0	11,0	Reflector	Horizontal	5.000	2450	-	-	9238.514.43916	871150051942925	312165
375T3/7	375	120	5	R7S	219,1	127,0	11,0	Translucent	Horizontal	5.000	2500	n.a.	-	9245.205.34616	871150051778425	209973
14141X	2.000	400	2	X	370,0	274,0	11,0	Clear	Universal	5.000	2700	n.a.	-	9245.552.49116	871150018549525	-
13561Z/98	1.200	144	1	SK15	228,0	150,0	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.482.57716	871150051488225	-
14132Z/98	2.000	235	1	SK15	787,5	700,0	11,0	Reflector	Horizontal	5.000	2450	500	Splice	9245.526.44916	871150005802725	-
1600T3/CL	1.600	240	3	U	503,0	406,0	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.181.43816	871150051768525	216788
13215X	3.000	400	2	X	798,0	700,0	12,0	Clear	Horizontal	5.000	2450	n.a.	-	9238.542.57916	871150005466125	-
13168Z	2.000	235	1	SK15	355	280	11,0	Clear	Universal	5.000	2500	200	Fork	9245.717.44916	871150049656025	-
13195X/98	1.000	235	2	X	370	272	11,0	Reflector	Horizontal	5.000	2450	-	-	9238.514.43916	871150051942925	312165

Lamp specifications Various industrial

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X	Cable connection	12 nc	EOC	US Product Number
375T3/7	375	120	5	R7S	219,1	127,0	11,0	Translucent	Horizontal	5.000	2500	n.a.	-	9245.205.34616	871150051778425	209973
14141X	2.000	400	2	X	370,0	274,0	11,0	Clear	Universal	5.000	2700	n.a.	-	9245.552.49116	871150018549525	-
13561Z/98	1.200	144	1	SK15	228,0	150,0	11,0	Reflector	Horizontal	5.000	2500	150	Fork	9245.482.57716	871150051488225	-
14132Z/98	2.000	235	1	SK15	787,5	700,0	11,0	Reflector	Horizontal	5.000	2450	500	Splice	9245.526.44916	871150005802725	-
1600T3/CL	1.600	240	3	U	503,0	406,0	11,0	Clear	Horizontal	5.000	2500	146	Splice	9245.181.43816	871150051768525	216788
13215X	3.000	400	2	X	798,0	700,0	12,0	Clear	Horizontal	5.000	2450	n.a.	-	9238.542.57916	871150005466125	-

Lamp specifications Ruby

Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Cable (mm) X	Cable connection	12 nc	EOC
13833Z/876	850	120	8	SK15	198,0	119,0	20,0	Ruby	Horizontal	5.000	85	Tab	9245.226.36324	871150049575425
13833Z/876	850	240	8	SK15	198,0	113,0	20,0	Ruby	Horizontal	5.000	85	Tab	9245.226.45524	871150049576125
13836Z/876	1.000	240	8	SK15	531,0	440,0	20,0	Ruby	Universal	5.000	85	Tab	9245.234.45524	871150049571625
13837Z/876	1.100	230	8	SK15	531,0	446,0	20,0	Ruby	Universal	5.000	85	Tab	9245.235.44224	871150049572325
13835Z/876	1.150	230	8	SK15	355,0	280,0	20,0	Ruby	Universal	5.000	85	Tab	9245.233.44224	871150049570925
13846Z/876	1.500	200	8	SK15	787,0	700,0	20,0	Ruby	Universal	5.000	85	Tab	9245.278.39524	871150049622525
13123Z/876	1.500	240	8	SK15	355,0	280,0	20,0	Ruby	Horizontal	5.000	200	Fork	9238.550.45524	871150049141125
13123Z/876L	1.500	240	8	SK15	355,0	280,0	20,0	Ruby	Horizontal	5.000	340	Faston	9238.551.45524	871150049143525
13250Z/876	1.500	240	8	SK15	787,0	700,0	20,0	Ruby	Universal	5.000	85	Tab	9245.280.45524	871150049623225
13934Z/876L	2.000	240	8	SK15	355,0	280,0	20,0	Ruby	Horizontal	5.000	340	Faston	9239.462.45524	871150049147325

Lamp specifications Speedium

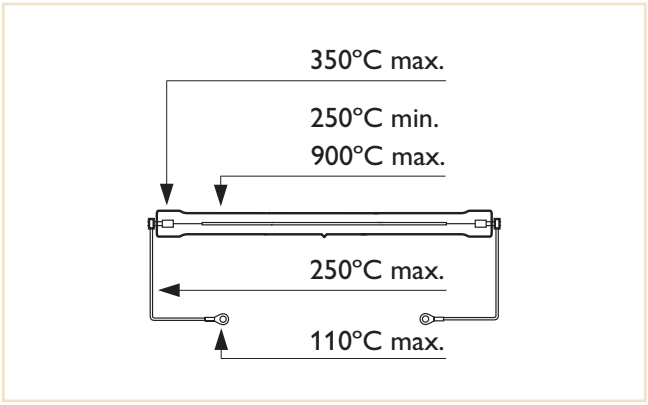
Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Heating length (mm) W	Diameter (mm) D	Finish	Burning position	Average Lamp life (in h)	Cable (mm) X	Cable connection	12 nc	EOC
17012X	1.500	235	2	X	370,0	280,0	11,0	Clear	Universal	5.000	-	-	9245/621.44946	871150018645425

Lamp specifications Incandescent Industrial

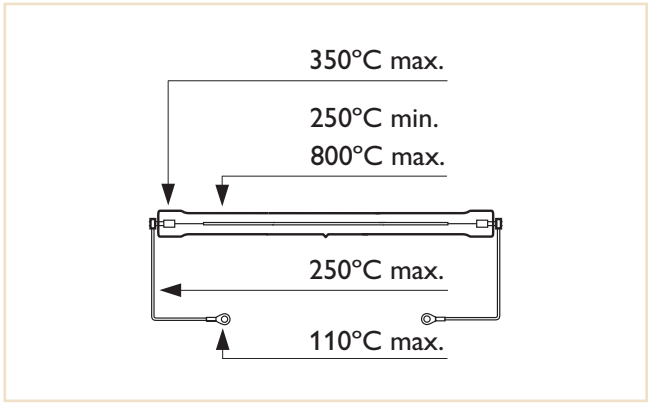
Type	Lamp wattage (in W)	Voltage (in V)	Fig.	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Diameter (mm) D	Bulb material	Finish	Burning position	Average Lamp life (in h)	12 nc	EOC
IR100R PAR38	100	230	10	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801144207	871150060052320
IR100R PAR38	100	240	10	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801145502	871150012891120
IR100C PAR38	100	230	10	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801244207	871150011578220
IR100C PAR38	100	240	10	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801245501	871150012893520
IR175C PAR38	175	230	10	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801344207	871150011579920
IR175C PAR38	175	240	10	E27	136,0	123,0	121,0	Hard Glass	Clear	Universal	5.000	923801345501	871150012895920
IR175R PAR38	175	230	10	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801444204	871150060053020
IR175R PAR38	175	230	10	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801444207	871150060053020
IR175R PAR38	175	240	10	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801445501	871150012898020
IR175R PAR38	175	240	10	E27	136,0	123,0	121,0	Hard Glass	Red	Horizontal H45	5.000	923801445502	871150012898020
IR150C R125	150	230	9	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211044202	871150034830225
IR150C R125	150	240	9	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211045502	871150034828925
IR150C R125	150	240	9	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211045503	871150034828925
IR250C R125	250	230	9	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211144202	871150034834025
IR250C R125	250	240	9	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211145502	871150034832625
IR250C R125	250	240	9	E27	181,0	-	125,0	Soft Glass	Clear	Universal	5.000	923211145503	871150034832625
IR150R R125	150	230-250	9	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244343801	871150012639925
IR150R R125	150	230	9	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244344201	871150012638225
IR250R R125	250	230-250	9	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244443801	-
IR250R R125	250	230	9	E27	181,0	-	125,0	Soft Glass	Red	Universal	5.000	923244444201	871150012653525
IR275CH R125	275	240	9	E27	179.0	-	125.0	Hard Glass	Clear	Universal	5.000	923203145501	-
IR250CH R125	250	230-250	9	E27	179.0	-	125.0	Hard Glass	Clear	Universal	5.000	923221943805	871150012649825
IR300CH R125	300	230-250	9	E27	179.0	-	125.0	Hard Glass	Clear	Universal	5.000	923223043805	871150012656625
IR375CH R125	375	230-250	9	E27	183.0	-	125.0	Hard Glass	Clear	Universal	5.000	923223543805	871150012659725
IR375SH R125	375	230	9	E27	183.0	-	125.0	Hard Glass	Sat	Universal	5.000	923223644206	871150012661025

Temperature limits on infrared halogen lamps

Standard permissible temperatures



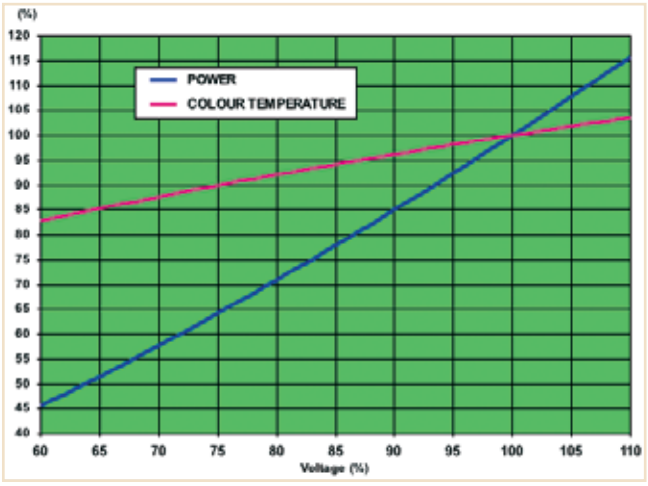
HeLeN permissible temperatures



Recommendations:

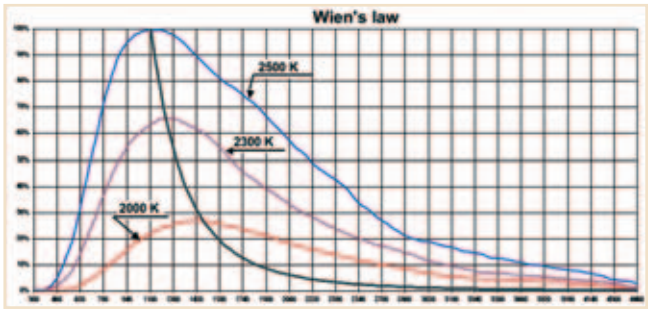
- To avoid pinch damages: pinch temperature has to be inferior to 350 °C.
- To ensure a proper halogen cycle: tube temperature has to be superior to 250 °C
- To avoid tube damages: tube temperature has to be lower than 900°C and lower than 800°C for HeLeN.

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.

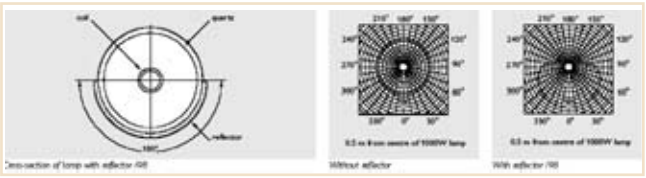
Wien's law: variation of the maximum of emission as a function of colour temperature



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

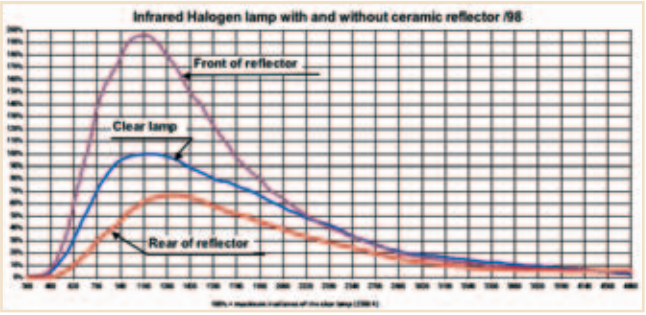
When the colour temperature decreases, the maximum of emission moves towards longer waves lengths.

Embedded reflector:



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

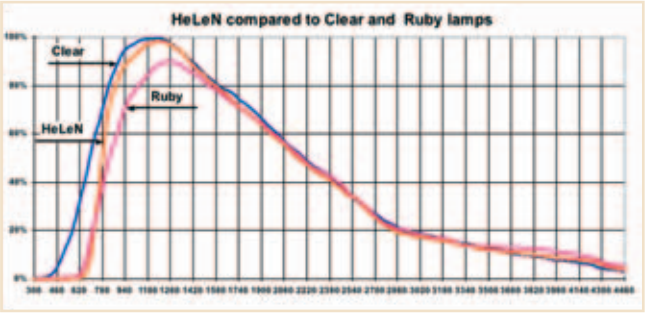
The emission spectra of InfraRed Halogen lamps with and without reflector (/98):



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

The heat radiation level obtained in front of an embedded reflector (/98) is two times the level of the equivalent clear lamp.

The HeLeN glare reduction filter:



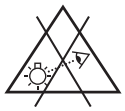
Remark: 100%=maximum irradiance level of the clear lamp.

HeLeN lamp has 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.

Appendix

InfraRed Halogen

Type	Lamp wattage (in W)	Voltage (in V)	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Heating length (mm) W	Diameter (mm) D	Bulb material	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X1	Cable (mm) X2	Cable connection	12 nc	EOC	US Product Number	Page
HeLeN																			
15011Z	500	235	SK15	227,5	-	162,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Fork	9245.299.43216	871150049641625	-	**2.1.1**
15016Z	500	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.350.44916	871150049847225	-	**2.1.1**
15024Z	1.000	120	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.453.36316	871150051936825	365163	**2.1.1**
15007Z	1.000	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.242.45516	871150049611925	280503	**2.1.1**
15008X	1.000	235	X	483,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	-	-	-	9245.273.44516	871150049613325	-	**2.1.1**
15009Z	1.000	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Universal	5.000	-	900	900	Faston	9245.274.44916	871150049614025	-	**2.1.1**
15019Z	1.000	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.411.44916	-	289256	**2.1.1**
15014Z	1.000	240	SK15	531,0	-	440,0	11,0	-	HeLeN	Universal	5.000	-	85	85	Tab	9245.330.45516	871150049806925	-	**2.1.1**
15015Z	1.500	120	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Fork	9245.338.31916	871150049824325	508044	**2.1.1**
15004Z	1.500	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.231.45516	871150005607825	-	**2.1.1**
15034Z	1.500	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Universal	5.000	-	300	300	Faston	9245.567.44916	871150018591425	-	**2.1.1**
15010Z	1.500	240	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Fork	9245.297.45516	871150049640925	-	**2.1.1**
15005Z	2.000	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.244.45516	871150049612625	-	**2.1.1**
15021Z	2.000	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Universal	5.000	-	300	300	Faston	9245.443.44916	871150051906125	-	**2.1.1**
15023Z	2.000	235	SK15	355,0	-	280,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Splice	9245.448.44916	871150051918425	-	**2.1.1**
15012U	3.000	235	U	503,0	-	423,0	11,0	-	HeLeN	Universal	5.000	-	146	146	Splice	9245.310.45524	871150049744425	249615	**2.1.1**
15035Z	3.000	235	SK15	532,0	-	446,0	11,0	-	HeLeN	Horizontal	5.000	-	300	300	Faston	9245.640.44916	871150018692825	-	**2.1.1**
15007R	1.000	235	SK15	350,0	-	272,0	11,0	-	HeLeN	Horizontal	5.000	-	-	-	-	9245.718.44916	871150049687425	-	**2.1.1**
Vitae																			
14142Z	500	235	SK15	787,5	-	700,0	11,0	-	Translucent	Universal	5.000	1800	1200	230	Splice	9245.556.44916	871150018555625	-	**2.2.1**
14157Z	500	235	SK15	628,5	-	550,0	11,0	-	Translucent	Universal	5.000	1800	1200	230	Splice	9245.629.44916	871150018671325	-	**2.2.1**
14117Z	750	230	SK15	787,5	-	700,0	11,0	-	Clear	Universal	5.000	2000	1200	230	Splice	9245.405.44216	871150051856925	-	**2.2.1**
14124Z	750	230	SK15	787,5	-	700,0	11,0	-	Translucent	Universal	5.000	1750	1200	230	Splice	9245.479.44216	871150051972625	-	**2.2.1**
14155Z	750	230	SK15	787,5	-	700,0	11,0	-	Clear	Universal	5.000	1750	1200	230	Splice	9245.622.44216	871150018651525	-	**2.2.1**
13393Z	1.300	235	SK15	787,5	-	700,0	11,0	-	Clear	Universal	5.000	2000	200	200	Fork	9239.454.44516	871150005532325	-	**2.2.1**
Cooking																			
13939F-VB	400	110	-	94,0	-	-	11,0	-	Clear	Horizontal	5.000	2000	105	105	Faston	9245.137.31916	871150005592740	-	**2.4.1**
13939F-VB	400	230	-	94,0	-	-	11,0	-	Clear	Horizontal	5.000	2250	105	105	Faston	9245.137.44216	871150005593440	-	**2.4.1**
13395V	415	135	V	187,0	-	105,0	11,0	-	Clear	Horizontal	5.000	2350	209	209	Faston	9238.509.36616	871150005464728	-	**2.4.1**
13396V	450	110	V	217,0	-	136,0	11,0	-	Clear	Horizontal	5.000	2350	209	209	Flag	9239.256.31916	871150005490628	-	**2.4.1**
13271V	645	230	V	179,0	-	95,0	11,0	-	Clear	Horizontal	5.000	2350	209	209	Flag	9239.064.43316	871150005482128	-	**2.4.1**
	750	120	V	153	-	-	11	-	Clear	Horizontal	5000	-	90	-	Splice	-	-	-	**2.4.1**
	1050	120	V	118	-	-	11	-	Clear	Horizontal	5000	-	90	-	Splice	-	-	-	**2.4.1**
	1300	120	V	164	-	-	11	-	Clear	Horizontal	5000	-	90	-	Splice	-	-	-	**2.4.1**
Clear Sleeve																			
13169Z/850	500	235	SK15	225,0	-	160,0	20,0	-	Clear	Horizontal	5.000	2400	230	230	Splice	9245.523.44924	871150005583525	-	**2.4.1**
Stela																			
17007/99	600	230	SK9 + LEAD	425,0	-	345,0	11,0	-	Translucent	Horizontal	5.000	1700	350	350	Splice	9245.476.44216	871150051971965	-	**2.4.1**
17015/99	600	235	SK9	445,0	-	341,0	11,0	-	Translucent	Universal	5.000	1700	-	-	-	9245.632.44916	871150018681265	-	**2.4.1**
17016/99	1.000	235	SK9	445,0	-	341,0	11,0	-	Translucent	Universal	5.000	1850	-	-	-	9245.633.44916	871150018683665	-	**2.4.1**
Plastics																			
13908Z	300	230	SK15	122,0	-	60,0	11,0	-	Clear	Horizontal	1.000	2500	140	-	Splice	9245.271.44216	871150049609625	-	**2.5.2**
13169X	500	120	X	242,0	-	142,0	11,0	-	Clear	Horizontal	5.000	2500	-	-	-	9238.500.32316	871150021679325	312033	**2.5.2**
13169Y	500	120	Y	221,0	-	142,0	11,0	-	Clear	Horizontal	5.000	2500	160	-	Splice	9238.501.32316	871150049631725	312074	**2.5.2**
13169X/98	500	120	X	242,0	-	142,0	11,0	-	Reflector	Horizontal	5.000	2500	-	-	-	9238.502.32316	871150021740025	312058	**2.5.2**
500T3	500	120	U	224,0	-	127,0	11,0	-	Translucent	Horizontal	5.000	2500	146	-	Splice	9245.176.36316	871150051763025	216515	**2.5.2**
500T3/7	500	120	R7S	219,1	-	127,0	11,0	-	Translucent	Horizontal	5.000	2500	-	-	-	9245.177.34616	871150051764725	209940	**2.5.2**
13169Z/98	500	235	SK15	227,0	-	159,0	11,0	-	Reflector	Horizontal	5.000	2400	200	-	Fork	9238.527.44516	871150021741725	-	**2.5.2**
13842Z	700	240	SK15	216,0	-	150,0	11,0	-	Clear	Horizontal	5.000	2600	140	-	Splice	9245.270.45516	871150049608925	-	**2.5.2**
13195X	1.000	235	X	370,0	-	280,0	11,0	-	Clear	Horizontal	5.000	2500	-	-	-	9238.510.43916	871150021742425	312132	**2.5.2**
1000T3	1.000	240	U	351,0	-	254,0	11,0	-	Translucent	Horizontal	5.000	2500	146	-	Splice	9245.178.43816	871150051765425	209957	**2.5.2**
1000T3/CL	1.000	240	U	303,0	-	254,0	11,0	-	Clear	Horizontal	5.000	2500	146	-	Splice	9245.179.43816	871150051766125	210005	**2.5.2**
14134Z/98	1.200	235	SK15	224,0	-	155,0	11,0	-	Reflector	Horizontal	5.000	2700	150	-	Fork	9245.371.44916	871150005842325	-	**2.5.2**
14135Z/98	1.600	235	SK15	228,0	-	155,0	11,0	-	Reflector	Horizontal	5.000	2700	150	-	Fork	9245.372.44916	871150018450425	-	**2.5.2**
13168X	2.000	235	X	370,0	-	288,0	11,0	-	Clear	Universal	5.000	2500	-	-	-	9238.525.43916	871150021677925	311985	**2.5.2**

Type	Lamp wattage (in W)	Voltage (in V)	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Heating length (mm) W	Diameter (mm) D	Bulb material	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X1	Cable (mm) X2	Cable connection	12 nc	EOC	US Product Number	Page
2MT3/ICL/HT/UB0	2.000	240	U	303,0		254,0	11,0		Clear	Universal	5.000	2500	146		Splice	9245.185.45516	871150051772225	216481	**2.5.2**
Semiconductor																			
13941Z	1.500	235	SK15	352,0	-	274,0	11,0	-	Clear	Horizontal	1.000	2950	1200	1200	Splice	9245.268.43916	871150049600325	-	**2.6.1**
13136V	4.600	400	V	303,0	-	242,0	12,0	-	Clear	Horizontal	1.000	3000	35	35	Ring	9238.508.49124	871150049156525	256545	**2.6.1**
13170V	6.000	480	V	350,0	-	284,0	12,0	-	Clear	Horizontal	1.000	2900	35	35	Ring	9245.298.51724	871150049161925	291146	**2.6.1**
13138V	6.000	480	V	303,0	-	236,0	12,0	-	Clear	Horizontal	1.000	3000	35	35	Ring	9245.340.51724	871150049826725	291237	**2.6.1**
14131V	6.000	480	V	350,0	-	284,0	11,0	-	Clear	Horizontal	1.000	3000	35	35	Ring	9245.514.51724	871150005581125	-	**2.6.1**
14166V	6.000	480	V	350,0	-	284,0	12,0	-	Clear	Horizontal	1.000	3000	35	35	Ring	9245.689.51724	-	-	**2.6.1**
14167V	6.000	480	V	303,0	-	242,0	11,0	-	Clear	Horizontal	1.000	3000	150	150	Ring	9245.697.51724	-	-	**2.6.1**
14118V	6.850	480	V	303,0	-	242,0	12,0	-	Clear	Horizontal	1.000	3000	35	35	Ring	9245.412.51724	871150051863725	291708	**2.6.1**
14139	750	120	-	113,7	-	72,0	13,0	-	Clear	Horizontal	1.000	3050	-	-	-	9245.539.36324	871150018495525	2.6.1	
6990P metal	1.000	120	G9.5	104,0	-	60,0	19,0	-	Clear	Universal	1.000	3000	-	-	-	9245.208.36328	871150049850225	291070	**2.6.1**
14302P ceramic	1.000	120	G9.4	104,0	-	60,0	19,0	-	Clear	Universal	1.000	3000	-	-	-	9245.382.36328	871150049866325	-	**2.6.1**
InfraRed lamps for industrial purposes																			
13908R	300	230	R7S	117,5	-	60,0	11,0	-	Clear	Horizontal	1.000	2500	-	-	-	9238.503.43301	871150049155825	-	**2.8.1**
13908Z	300	230	SK15	122,0	-	60,0	11,0	-	Clear	Horizontal	1.000	2500	140	140	Splice	9245.271.44216	871150049609625	-	**2.8.1**
375T3/7	375	120	R7S	219,1	-	127,0	11,0	-	Translucent	Horizontal	5.000	2500	-	-	-	9245.205.34616	871150051778425	209973	**2.8.1**
13169X	500	120	X	242,0	-	142,0	11,0	-	Clear	Horizontal	5.000	2450	-	-	-	9238.500.32316	871150021679325	312033	**2.8.1**
13169X/98	500	120	X	355,0	-	142,0	11,0	-	Reflector	Horizontal	5.000	2350	-	-	-	9238.502.32316	871150021740025	312058	**2.8.1**
500T3	500	120	U	224,0	-	127,0	11,0	-	Translucent	Horizontal	5.000	2500	146	146	Splice	9245.176.36316	871150051763025	216515	**2.8.1**
13169Z/98	500	235	SK15	227,0	-	159,0	11,0	-	Reflector	Horizontal	5.000	2300	200	200	Fork	9238.527.44516	871150021741725	-	**2.8.1**
13169R	500	235	R7S	220,6	-	165,0	11,0	-	Clear	Horizontal	5.000	2450	-	-	-	9239.468.44516	871150005535425	-	**2.8.1**
13790R	650	220	R7S	550,4	-	501,0	9,0	-	Clear	Horizontal	5.000	2200	-	-	-	9239.473.42916	871150049821225	-	**2.8.1**
13842Z	700	240	SK15	216,0	-	150,0	11,0	-	Clear	Horizontal	5.000	2600	140	140	Splice	9245.270.45516	871150049608925	-	**2.8.1**
13195X/98	1.000	235	X	370,0	-	272,0	11,0	-	Reflector	Horizontal	5.000	2450	-	-	-	9238.514.43916	871150051942925	312165	**2.8.1**
13713X	1.000	235	X	370,0	-	280,0	11,0	-	Clear	Universal	5.000	2450	-	-	-	9238.515.43916	871150021472025	312603	**2.8.1**
13713Z/98	1.000	235	SK15	355,0	-	280,0	11,0	-	Reflector	Universal	5.000	2400	200	200	Fork	9238.535.44516	871150021474425	312678	**2.8.1**
13195Z/98	1.000	235	SK15	355,0	-	280,0	11,0	-	Reflector	Horizontal	5.000	2400	200	200	Fork	9238.543.44516	871150021745525	-	**2.8.1**
13713X/98	1.000	235	X	370,0	-	280,0	11,0	-	Reflector	Universal	5.000	2450	-	-	-	9238.960.44516	871150021473725	-	**2.8.1**
13402Z	1.000	235	SK15	355,0	-	280,0	11,0	-	Clear	Universal	5.000	2500	200	200	Fork	9245.335.44916	871150049811325	-	**2.8.1**
13195X/98C	1.000	235	X	400,0	-	280,0	11,0	-	Reflector	Horizontal	5.000	2400	-	-	-	9245.531.44916	871150005811925	-	**2.8.1**
1000T3	1.000	240	U	351,0	-	254,0	11,0	-	Translucent	Horizontal	5.000	2500	146	146	Splice	9245.178.43816	871150051765425	209957	**2.8.1**
1000T3/CL	1.000	240	U	303,0	-	254,0	11,0	-	Clear	Horizontal	5.000	2500	146	146	Splice	9245.179.43816	871150051766125	210005	**2.8.1**
13561Y/98	1.200	144	Y	221,5	-	150,0	11,0	-	Reflector	Horizontal	5.000	2300	150	150	Fork	9245.033.57716	871150005569928	270637	**2.8.1**
13561Z/98	1.200	144	SK15	228,0	-	150,0	11,0	-	Reflector	Horizontal	5.000	2400	150	150	Fork	9245.482.57716	871150051488225	-	**2.8.1**
14134Z/98	1.200	235	SK15	224,0	-	155,0	11,0	-	Reflector	Horizontal	5.000	2600	150	150	Fork	9245.371.44916	871150005842325	-	**2.8.1**
13935R	1.530	230	R7S	447,9	-	385,0	11,0	-	Clear	Horizontal	5.000	2400	-	-	-	9239.472.44224	871150021476825	-	**2.8.1**
13568Y/00	1.600	144	Y	222,5	-	155,0	11,0	-	Clear	Horizontal	5.000	2500	150	150	Ring	9239.457.57724	871150049159625	288753	**2.8.1**
13568Y/98	1.600	144	Y	221,5	-	155,0	11,0	-	Reflector	Horizontal	5.000	2400	150	150	Fork	9245.032.57716	871150005568228	270629	**2.8.1**
13568Z/98	1.600	144	SK15	229,0	-	155,0	11,0	-	Reflector	Horizontal	5.000	2500	150	150	Fork	9245.483.57716	871150051489925	-	**2.8.1**
1600T3	1.600	208	U	503,0	-	406,0	11,0	-	Translucent	Horizontal	5.000	2500	146	146	Splice	9245.180.41416	871150051767825	216762	**2.8.1**
14135Z/98	1.600	235	SK15	228,0	-	155,0	11,0	-	Reflector	Horizontal	5.000	2600	150	150	Fork	9245.372.44916	871150018450425	-	**2.8.1**
1600T3/CL	1.600	240	U	503,0	-	406,0	11,0	-	Clear	Horizontal	5.000	2500	146	146	Splice	9245.181.43816	871150051768525	216788	**2.8.1**
1600T3	1.600	240	U	503,0	-	406,0	11,0	-	Translucent	Horizontal	5.000	2500	146	146	Splice	9245.182.45516	871150051769225	209965	**2.8.1**
1600T3/7	1.600	240	R7S	498,5	-	406,0	11,0	-	Translucent	Horizontal	5.000	2550	-	-	-	9245.190.43816	871150051776025	210039	**2.8.1**
13938R	2.000	230	R7S	550,4	-	497,0	11,0	-	Clear	Horizontal	5.000	2450	-	-	-	9245.085.44216	871150005588025	-	**2.8.1**
13214Z/98	2.000	230	SK15	657,0	-	500,0	11,0	-	Reflector	Horizontal	5.000	2400	500	500	Splice	9245.323.44216	871150049823625	-	**2.8.1**
13168V	2.000	235	V	350,0	-	286,0	11,0	-	Clear	Universal	5.000	2450	138	117	Ring	9238.504.44516	871150049632425	357038	**2.8.1**
13168X	2.000	235	X	370,0	-	288,0	11,0	-	Clear	Universal	5.000	2450	-	-	-	9238.525.43916	871150021677925	311985	**2.8.1**
13168Z/98	2.000	235	SK15	355,0	-	280,0	11,0	-	Reflector	Universal	5.000	2400	200	200	Fork	9238.536.44516	871150021678625	312009	**2.8.1**
13213Z/98F	2.000	235	Z	355,0	-	280,0	11,0	-	Reflector	Horizontal	5.000	2400	200	200	Fork	9245.003.44516	871150021747925	378117	**2.8.1**
14103Z/98	2.000	235	SK15	355,0	-	280,0	11,0	-	Reflector	Horizontal	5.000	2400	230	230	Splice	9245.347.44916	871150049834225	-	**2.8.1**
2MT3/ICL/HT/UB0	2.000	240	U	303,0	-	254,0	11,0	-	Clear	Universal	5.000	2500	146	146	Splice	9245.185.45516	871150051772225	216481	**2.8.1**
13245X/98	2.000	400	X	512,0	-	416,0	11,0	-	Reflector	Horizontal	5.000	2350	-	-	-	9238.529.57916	871150021470625	312520	**2.8.1**
13245X	2.000	400	X	512,0	-	416,0	11,0	-	Clear	Horizontal	5.000	2450	-	-	-	9238.530.57916	871150049633125	-	**2.8.1**
13765X	2.000	400	X	512,0	-	410,0	11,0	-	Clear	Universal	5.000	2450	-	-	-	9238.531.57916	871150021475125	312694	**2.8.1**
13765X/98	2.000	400	X	508,0	-	410,0	11,0	-	Reflector	Universal	5.000	2450	-	-	-	9245.054.57916	871150005575025	368555	**2.8.1**
14141X	2.000	400	X	370,0	-	274,0	11,0	-	Clear	Universal	5.000	2700	-	-	-	9245.552.49116	871150018549525	-	**2.8.1**
2500T3	2.500	480	U	731,0	-	638,0	11,0	-	Translucent	Horizontal	5.000	2550	146	146	Splice	9245.183.51616	871150051770825	209981	**2.8.1**
2500T3/CL	2.500	480	U	731,0	-	638,0	11,0	-	Clear	Horizontal	5.000	2550	146	146	Splice	9245.264.51616	871150051780725	238741	**2.8.1**
14107Z/98	3.000	230	SK15	787,0	-	696,0	11,0	-	Reflector	Horizontal	5.000	2300	500	500	Splice	9245.363.44216	871150049852625	-	**2.8.1**
14107Z	3.000	230	SK15	787,0	-	700,0	11,0	-	Clear	Horizontal	5.000	2400	500	500	Splice	9245.574.44216	-	-	**2.8.1**

Type	Lamp wattage (in W)	Voltage (in V)	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Heating length (mm) W	Diameter (mm) D	Bulb material	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X1	Cable (mm) X2	Cable connection	12 nc	EOC	US Product Number	Page
13565X	3.000	235	X	370,0	-	277,0	13,5	-	Clear	Universal	5.000	2500	-	-	-	9239.456.44516	871150005533025	-	2.8.1
13565V	3.000	235	V	350,0	-	277,0	13,5	-	Clear	Universal	5.000	2400	138	117	Ring	9245.143.44516	871150005594125	138867	2.8.1
14121Z/98	3.000	235	Z	355,0	-	280,0	11,0	-	Reflector	Horizontal	5.000	2650	230	230	Splice	9245.449.44916	871150051919125	-	2.8.1
13230X	3.000	400	X	802,0	-	700,0	11,0	-	Clear	Universal	5.000	2450	-	-	-	9238.540.57916	871150021748625	312447	2.8.1
13230X/98	3.000	400	X	802,0	-	700,0	11,0	-	Reflector	Universal	5.000	2350	-	-	-	9238.541.57916	871150021749325	236489	2.8.1
13215X	3.000	400	X	798,0	-	700,0	11,0	-	Clear	Horizontal	5.000	2450	-	-	-	9238.542.57916	871150005466125	-	2.8.1
3200T3/CL	3.200	240	U	1062,0	-	815,0	11,0	-	Clear	Horizontal	5.000	2450	146	146	Splice	9245.326.45516	200833000168910	254359	2.8.1
3200T3/CL	3.200	277	U	1062,0	-	813,0	11,0	-	Clear	Horizontal	5.000	2300	146	146	Splice	9245.326.46916	-	254789	2.8.1
14158/99	3.650	480	R7S + LEAD	1061,0	-	962,0	11,0	-	Clear	Horizontal	5.000	2500	146	146	Splice	9245.631.51716	871150018675110		2.8.1
3800T3/CL/UB	3.800	575	U	1062,0	-	963,0	11,0	-	Clear	Universal	5.000	2500	146	146	Splice	9245.173.51116	871150051761610	221291	2.8.1
3800T3	3.800	575	U	1062,0	-	963,0	11,0	-	Translucent	Horizontal	5.000	2500	146	146	Splice	9245.184.51116	871150051771510	221283	2.8.1
13168Z	2.000	235	SK15	355,0	-	280,0	11,0	-	Clear	Universal	5.000	2500	200	-	Fork	9245.717.44916	871150049656025	-	2.8.1
Ruby																			
13833Z/876	850	120	SK15	198,0	-	119,0	20,0	-	Ruby	Horizontal	5.000	-	85	85	Tab	9245.226.36324	871150049575425	-	2.8.1
13833Z/876	850	240	SK15	198,0	-	113,0	20,0	-	Ruby	Horizontal	5.000	-	85	85	Tab	9245.226.45524	871150049576125	-	2.8.1
13836Z/876	1.000	240	SK15	531,0	-	440,0	20,0	-	Ruby	Universal	5.000	-	85	85	Tab	9245.234.45524	871150049571625	-	2.8.1
13837Z/876	1.100	230	SK15	531,0	-	446,0	20,0	-	Ruby	Universal	5.000	-	85	85	Tab	9245.235.44224	871150049572325	-	2.8.1
13835Z/876	1.150	230	SK15	355,0	-	280,0	20,0	-	Ruby	Universal	5.000	-	85	85	Tab	9245.233.44224	871150049570925	-	2.8.1
13846Z/876	1.500	200	SK15	787,0	-	700,0	20,0	-	Ruby	Universal	5.000	-	85	85	Tab	9245.278.39524	871150049622525	-	2.8.1
13123Z/876	1.500	240	SK15	355,0	-	280,0	20,0	-	Ruby	Horizontal	5.000	-	200	200	Fork	9238.550.45524	871150049141125	-	2.8.1
13123Z/876L	1.500	240	SK15	355,0	-	280,0	20,0	-	Ruby	Horizontal	5.000	-	340	340	Faston	9238.551.45524	871150049143525	-	2.8.1
13250Z/876	1.500	240	SK15	787,0	-	700,0	20,0	-	Ruby	Universal	5.000	-	85	85	Tab	9245.280.45524	871150049623225	-	2.8.1
13934Z/876L	2.000	240	SK15	355,0	-	280,0	20,0	-	Ruby	Horizontal	5.000	-	340	340	Faston	9239.462.45524	871150049147325	-	2.8.1
Speedium																			
17012X	1.500	235	X	370,0	-	280,0	11,0	-	Clear	Universal	5.000	1950	-	-	-	9245.621.44946	871150018645425	-	2.8.4

InfraRed Incandescent

Incandescent Healthcare / Bodycare																			
R95 UNP/144	100	230	E27	130.0	-	-	95.0	Soft Glass	Red	Universal	5000	-	-	-	-	923244244201	871150016634097	-	2.3.1
R95 1CT/25	100	230	E27	130.0	-	-	95.0	Soft Glass	Red	Universal	5000	-	-	-	-	923244244203	871150014559840	-	2.3.1
PAR 38E UNP	150	230	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5000	-	-	-	-	923806644205	871150016675398	-	2.3.1
PAR 38E 1CT/15	150	230	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5000	-	-	-	-	923806644207	-	-	2.3.1
Incandescent Animal Care																			
IR100R PAR38	100	230	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5.000	-	-	-	-	923801144207	871150060052320	-	2.7.1
IR100R PAR38	100	240	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5.000	-	-	-	-	923801145502	871150012891120	-	2.7.1
IR100C PAR38	100	230	E27	136.0	123.0	-	121.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801244207	871150011578220	-	2.7.1
IR100C PAR38	100	240	E27	136.0	123.0	-	121.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801245501	871150012893520	-	2.7.1
IR175C PAR38	175	230	E27	136.0	123.0	-	121.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801344207	871150011579920	-	2.7.1
IR175C PAR38	175	240	E27	136.0	123.0	-	121.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801345501	871150012895920	-	2.7.1
IR175R PAR38	175	230	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5.000	-	-	-	-	923801444204	871150060053020	-	2.7.1
IR175R PAR38	175	230	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5.000	-	-	-	-	923801444207	871150060053020	-	2.7.1
IR175R PAR38	175	240	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5.000	-	-	-	-	923801445501	871150012898020	-	2.7.1
IR175R PAR38	175	240	E27	136.0	123.0	-	121.0	Hard Glass	Red	Universal	5.000	-	-	-	-	923801445502	871150012898020	-	2.7.1
IR150C R125	150	230	E27	181.0	-		125.0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211044202	871150034830225	-	2.7.1
IR150C R125	150	240	E27	181.0	-	-	125.0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211045502	871150034828925	-	2.7.1
IR150C R125	150	240	E27	181.0	-	-	125.0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211045503	871150034828925	-	2.7.1
IR250C R125	250	230	E27	181.0	-	-	125.0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211144202	871150034834025	-	2.7.1
IR250C R125	250	240	E27	181.0	-	-	125.0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211145502	871150034832625	-	2.7.1
IR250C R125	250	240	E27	181.0	-	-	125.0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211145503	871150034832625	-	2.7.1
IR150R R125	150	230-250	E27	181.0	-	-	125.0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244343801	871150012639925	-	2.7.1
IR150R R125	150	230	E27	181.0	-	-	125.0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244344201	871150012638225	-	2.7.1
IR250R R125	250	230-250	E27	181.0	-	-	125.0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244443801	-	-	2.7.1
IR250R R125	250	230	E27	181.0	-	-	125.0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244444201	871150012653525	-	2.7.1
Incandescent Industrial																			
IR100R PAR38	100	230	E27	136,0	123,0	-	121,0	Hard Glass	Red	Horizontal H45	5.000	-	-	-	-	923801144207	871150060052320	-	2.8.1
IR100R PAR38	100	240	E27	136,0	123,0	-	121,0	Hard Glass	Red	Horizontal H45	5.000	-	-	-	-	923801145502	871150012891120	-	2.8.1
IR100C PAR38	100	230	E27	136,0	123,0	-	121,0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801244207	871150011578220	-	2.8.1
IR100C PAR38	100	240	E27	136,0	123,0	-	121,0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801245501	871150012893520	-	2.8.1
IR175C PAR38	175	230	E27	136,0	123,0	-	121,0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801344207	871150011579920	-	2.8.1
IR175C PAR38	175	240	E27	136,0	123,0	-	121,0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923801345501	871150012895920	-	2.8.1

Type	Lamp wattage (in W)	Voltage (in V)	Cap/ Base	Total Lamp length (mm) C	Lamp length (mm) C1	Heating length (mm) W	Diameter (mm) D	Bulb material	Finish	Burning position	Average Lamp life (in h)	Colour temp. (K)	Cable (mm) X1	Cable (mm) X2	Cable connection	12 nc	EOC	US Product Number	Page
IR175R PAR38	175	230	E27	136,0	123,0	-	121,0	Hard Glass	Red	Horizontal H45	5.000	-	-	-	-	923801444204	8711500600530 20	-	**2.8.1**
IR175R PAR38	175	230	E27	136,0	123,0	-	121,0	Hard Glass	Red	Horizontal H45	5.000	-	-	-	-	923801444207	8711500600530 20	-	**2.8.1**
IR175R PAR38	175	240	E27	136,0	123,0	-	121,0	Hard Glass	Red	Horizontal H45	5.000	-	-	-	-	923801445501	8711500128980 20	-	**2.8.1**
IR175R PAR38	175	240	E27	136,0	123,0	-	121,0	Hard Glass	Red	Horizontal H45	5.000	-	-	-	-	923801445502	8711500128980 20	-	**2.8.1**
IR150C R125	150	230	E27	181,0	-	-	125,0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211044202	8711500348302 25	-	**2.8.1**
IR150C R125	150	240	E27	181,0	-	-	125,0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211045502	8711500348289 25	-	**2.8.1**
IR150C R125	150	240	E27	181,0	-	-	125,0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211045503	8711500348289 25	-	**2.8.1**
IR250C R125	250	230	E27	181,0	-	-	125,0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211144202	8711500348340 25	-	**2.8.1**
IR250C R125	250	240	E27	181,0	-	-	125,0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211145502	8711500348326 25	-	**2.8.1**
IR250C R125	250	240	E27	181,0	-	-	125,0	Soft Glass	Clear	Universal	5.000	-	-	-	-	923211145503	8711500348326 25	-	**2.8.1**
IR150R R125	150	230-250	E27	181,0	-	-	125,0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244343801	8711500126399 25	-	**2.8.1**
IR150R R125	150	230	E27	181,0	-	-	125,0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244344201	8711500126382 25	-	**2.8.1**
IR250R R125	250	230-250	E27	181,0	-	-	125,0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244443801	-	-	**2.8.1**
IR250R R125	250	230	E27	181,0	-	-	125,0	Soft Glass	Red	Universal	5.000	-	-	-	-	923244444201	8711500126535 25	-	**2.8.1**
IR275CH R125	275	240	E27	179.0	-	-	125.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923203145501	-	-	**2.8.1**
IR250CH R125	250	230-250	E27	179.0	-	-	125.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923221943805	8711500126498 25	-	**2.8.1**
IR300CH R125	300	230-250	E27	179.0	-	-	125.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923223043805	8711500126566 25	-	**2.8.1**
IR375CH R125	375	230-250	E27	183.0	-	-	125.0	Hard Glass	Clear	Universal	5.000	-	-	-	-	923223543805	8711500126597 25	-	**2.8.1**
IR375SH R125	375	230	E27	183.0	-	-	125.0	Hard Glass	Sat	Universal	5.000	-	-	-	-	923223644206	8711500126610 25	-	**2.8.1**