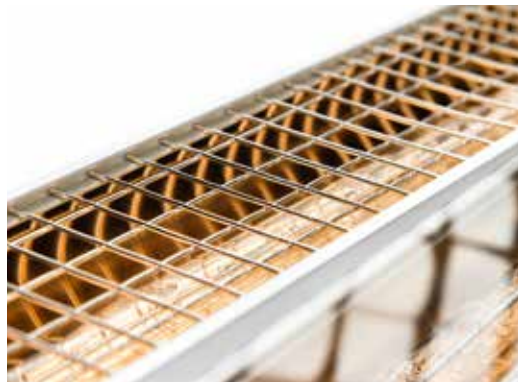




# **SINGLEHEATER**

## **COMPACT HEAT EMITTERS**



**IRT**  
SYSTEM  
INDUSTRIAL

**HEDSON**

## SUPERIOR CURING TECHNOLOGY

No other piece of equipment improves paint finishing production times as dramatically as IRT dryers. IRT is a cost effective and proven technology which ensures 100% dry products before handling.

All IRT dryers use short-wave technology. This, together with the unique range of reflectors such as IRT FreeForm gold coated reflectors, provides the best heat transfer possible.

Short-wave IR has several other advantages. It is easy to control, provides full heat immediately and penetrates the paint completely. The paint cures from the inside and out without retaining solvents and moisture that gives rise to problems with quality. Heat losses to the air are minimal and all energy is transferred to the surface to be dried.

## HEDSON TECHNOLOGIES

Hedson Technologies has a history from late 1960's, when we were the first to invent infrared dryers with short-wave IR and in the 1970's we developed spray gun cleaners and pneumatic lifts. Ever since then we have been market leader in the automotive refinishing industry.

With user experiences, innovative technology and well-planned concepts, all Hedson products have one thing in common, to deliver products that meets the high demands of professional customers.

Hedson's products also stand for safety and environmental considerations. They therefore meet international demands and standards in accordance with the Quality Standard ISO-9001 and ISO-14001.

In 2014 Hedson Technologies was acquired by Mellby Gård Innovation och Tillväxt AB, a solid well-known and privately owned Swedish industry investor.

Hedson has a global presence in nearly 80 countries, with offices in Sweden, Germany, France and North America.

**WHEN YOU ARE GOING TO EQUIP, EQUIP TO WIN.**



# IRT SINGLEHEATERS

## Compact heat emitters

With SingleHeaters, we build simple, high precision effective and compact heat emitters with low power consumption, straight into the existing production line. This opens up great opportunities in getting the right kind of heat in the right place to cure paints and adhesives on different materials like plastics, metals and even wood.

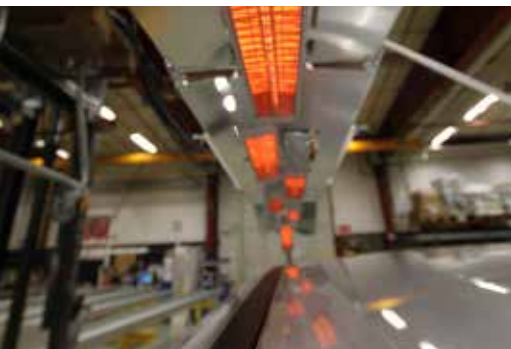
The operational economy is excellent since SingleHeaters switch on and off based on specific production requirements and react extremely quickly to power regulation.

Available in modular lengths and customized up to 6 m long, ready to install and connect.

## A MODULAR SYSTEM

IRT SingleHeater by Hedson consists of:

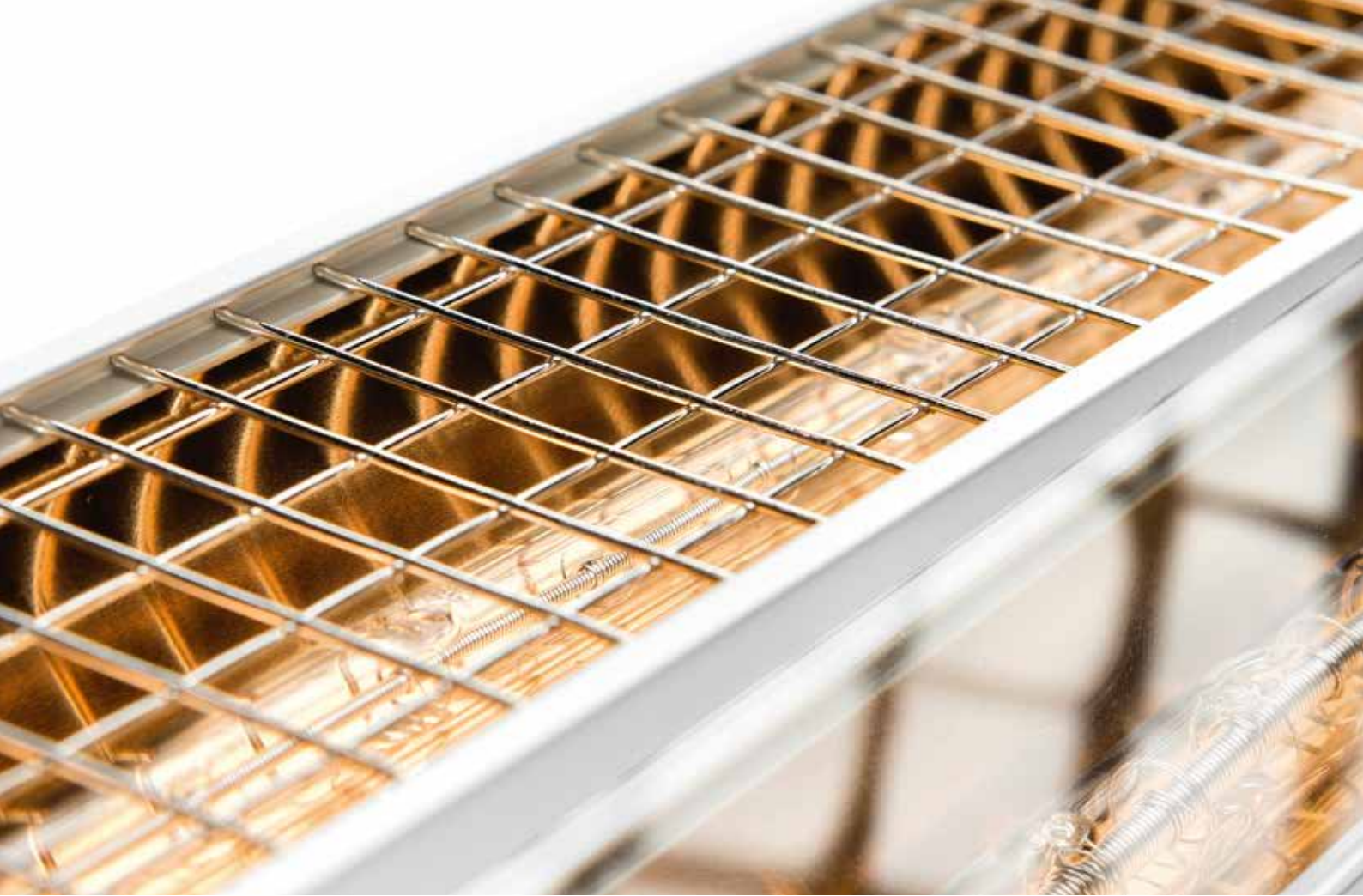
- Reflector body
- Replacable reflector strip with a surface coating of pure gold (reflects >98% of IR-radiation)
- IR-lamp of clear quartz (extremely high transmission capacity of IR-radiation)
- A range of add-ons



**AUTOMOTIVE APPLICATIONS** SingleHeaters in automotive industry, curing seals on roof channels. (ref 20250)

**CURING ADHESIVES** SingleHeater curing insulation glue between joints on railway track parts. (ref 300080)

**BOOSTING POWDER COATED PARTS** Boosting and curing in powder coating lines. (ref 81-2011-1)



## **ELECTRIC SHORT-WAVE INFRARED**

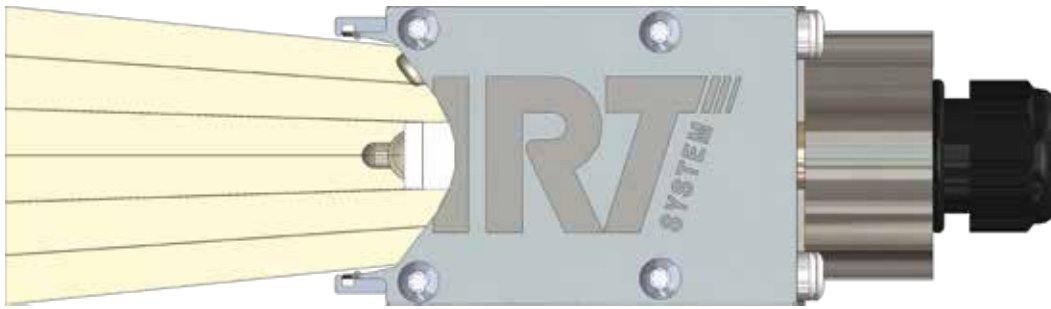
- Increase production speed with effective heat emitters built into existing line
- Low power consumption, no waste of energy or over-heating of parts
- Heating process starts/stops instantly
- 4 times more effective than convection oven (gas/oil)
- Extremely long service life
- Add-on process control; for detailed thermal cycles
- Add-on curing analyzer; reports process and energy consumption in easy-to-use graphs

## **IRT SHORT-WAVE INFRARED**

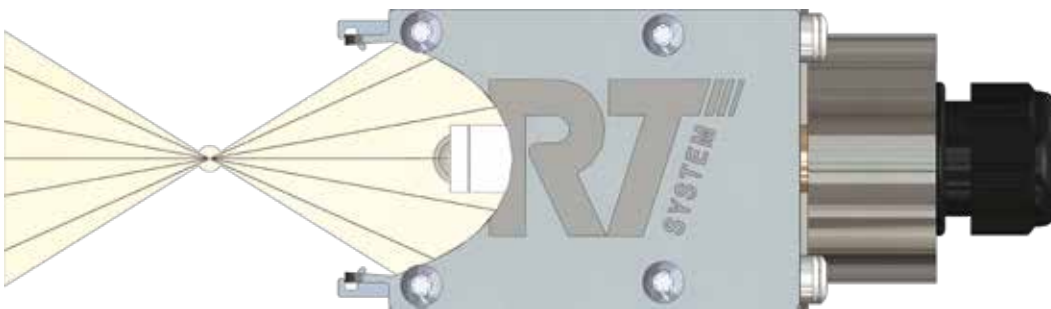
- The infrared short-wave range is 0.76-2  $\mu\text{m}$  (appr 1176°C-3538°C)
- Our equipment peaks in the center of this span to ensure maximum possible short-wave energy within the shortwave range; 1.2  $\mu\text{m}$ , 2176°C

With IRT short-wave technique, you will reach full power within less than 1 second. And combined with IRT control units, it works with the same precision all through the interval for any power setting. The level of precision is also extremely high in regards to heating the paint material and not the surroundings.

Curing paint, from the inside and out, takes appr 1 minute up to 180°C, plus holding time appr 3 minutes. IRT technique results in effective, high quality finishing and energy consumption savings.



## PARABOLIC



## ELLIPTIC

### REDUCED CARBON FOOTPRINT

We create a perfect blend of direct and reflected radiation on the material. (With gold-coated reflectors, because gold reflects 98% of IR radiation.)

## LOW MAINTENANCE

### *Reduce the maintenance with unique IRT lamps*

IRT's unique lamps are very shock resistance. Tens of thousands of lamp installations in heavy-duty paper mill applications are proof of this. High quality filter and ventilation techniques are used to extend the lifetime of the lamps to impressive and guaranteed 20,000 operating hours. A normal life time is up to 40,000 operating hours.

## YOUR CARBON FOOTPRINT

### **Our contribution to the environment is making sure nothing is wasted**

We design zones of IR-emitters for thermal cycles with a perfect blend of direct and reflected radiation. The operational economy is excellent since IRT lamps start/stop instantly.

For example, in an automotive assembly line, the IRT lamps are programmed to add more power onto the hood than onto the roof (since the roof is closer to the emitted radiation and will reach the correct temperature quicker).

This process of turning on and off zones based on temperature demand saves a lot of energy.

### **MINIMIZE YOUR CARBON FOOTPRINT - WASTE NOTHING**



## ***TRANSFER TO HEAT TRANSFER***

### **Three steps from knowledge**

#### **1. APPLY OUR INSIGHT**

Knowledge transfer is essential in the complex world of heat transfer alternatives. Customers can use our insight on infrared heating technology in industrial applications to help them find their optimal solution. Customization is standard. All our solutions are project-specific and developed in cooperation with our customers. By understanding our customer's needs, we identify a solution to fulfill exact requirements for high performance heat transfer.

#### **2. TEST THE CONCEPT**

We test the proposed solution using our own in-house lab testing facilities, or the customer's on site facilities when required. A thorough simulation of the process is carried out to provide proof of concept for each customized solution.

#### **3. DELIVER THE SOLUTION**

Once we have identified and validated an optimal solution, we provide superior project management coordinated via our project manual. The manual provides a clear, proven framework for project management and the project process from order entry, detailed planning and start up to execution, production, completion and follow up. This meticulously managed process ensures a smooth project and a successful outcome for our customers.

# PROJECT EXAMPLES



## AUTOMOTIVE PROJECT

#399000

Automotive industry, IRT mobile unit with 6 SingleHeaters for curing an A-column on three sides.



## AUTOMOTIVE PROJECT

#301000

Automotive industry, curing B-columns on assembly line. 4 x 3 kW SingleHeaters in 2 zones, for both B-columns.



## LAMINATION, PAPER INDUSTRY

#300990

Improved lamination process by keeping constant temperature on cylinders. IR-heat added in two positions, cylinder/line: 64 kW/3 kW.



## EDGE DRYING

#300860

Laminated floor manufacturing process. The surface treatment on the edges of each floor module is dried with IR-technique. 2+2 SingleHeaters, with control unit, 2 zones, 15 adjustable programmes. 16 kW.



## PLASTIC TUBE CROSSLINKING

#300690

Plastic tubing is crosslinked using infrared heat. The plastic fibre is interlaced to reinforce the material. 4 x 4 kW SingleHeaters for pipes  $\varnothing > 75$  mm 8 x 4 kW SingleHeaters for pipes  $\varnothing 75-160$  mm



## MOBILE POWDER COATING OVEN

#399008

We cooperate closely with paint manufacturers to keep our products up-to-date with the latest materials. This mobile oven is used by powder coating producers to test and produce samples.



## IRT CONTROL UNITS

The IRT control unit is equipped with advanced technology such as temperature measurement, laser and ultra sonic distance sensor. All functions are easy to understand and use. The object surface temperature is controlled in complex thermal cycles with easy-to-use panels and the whole system can be connected to the overall process start/stop.

### SELF INSTRUCTIVE MENUS

- Select a program and start curing

### SAFE AND EASY TO USE

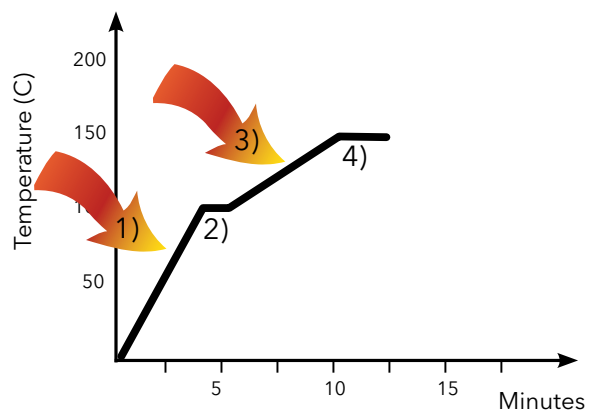
- Set default programs for any thermal cycle and material

### FLEXIBLE

- Process control of time (min.)
- Process control of temperature increase/min
- Process control of maximum temperature allowed

### PREPARED FOR THE FUTURE

- Edit the preset parameters to adjust to production updates



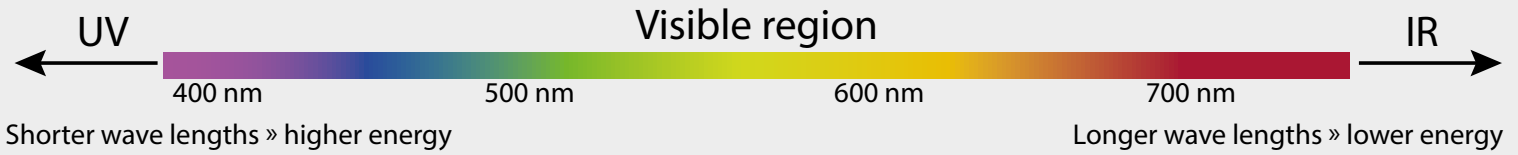
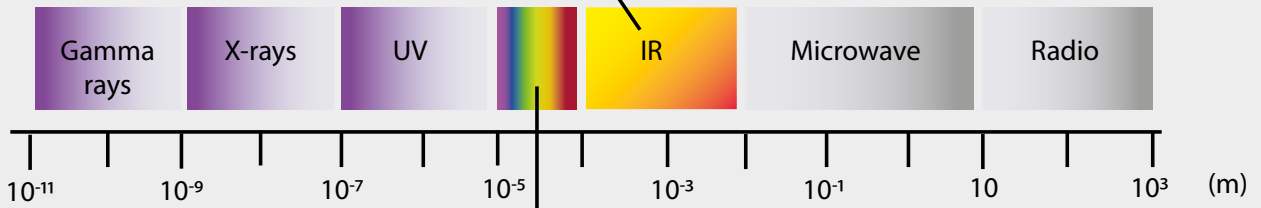
1. Temperature increase per minute. Both temperature and time is preset and monitored automatically.
2. Hold temperature for a set time, to regulate solvent release.
3. Temperature increase per minute, to reach final temperature.
4. Hold temperature for a set time.

The example process above is preset to avoid any risk of overheating. All parameters are programmed to reach best possible curing result as quickly and effectively as possible. Several safety features keep track of temperature/time parameters so that no parts risk rejection due to faulty surface finish.



near IR 0,7-1,4  $\mu\text{m}$     short-wave IR 1,4-3  $\mu\text{m}$     mid wave-length IR 3-8  $\mu\text{m}$     (far wave-length IR 8  $\mu\text{m}$  - 1 mm)

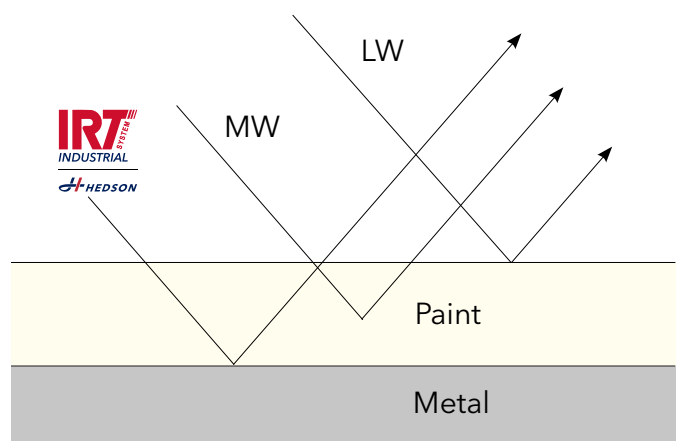
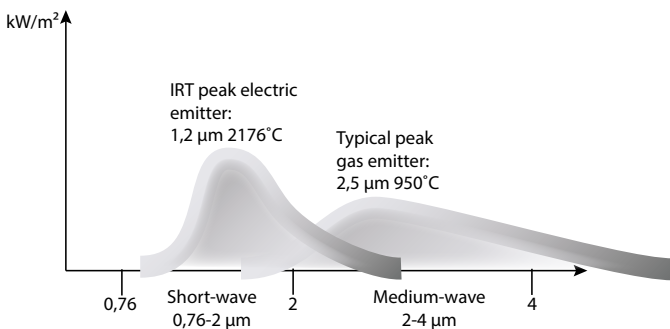
IR infrared



# INFRARED RADIATION

IR infrared radiation provides the greatest heat transfer effect of all forms of electromagnetic radiation (wavelength 0,6  $\mu\text{m}$ -1 mm). Most materials are partially transparent to IR radiation so that the heat is transmitted into the interior of the painted part.

- Rapid heating throughout
- Reduced risk of bubble formation and outer skins
- Increased degree of solvent release



## INFRARED ELECTROMAGNETIC SPECTRUM

IRT shortwave technique can be configured into electric installations, a comparatively clean form of energy. By peaking in the shortwave range in combination with highly flexible intelligent software, IRT secures versatile heating transfer advantages for all industry requirements.

## SIMPLIFIED DIAGRAM

IRT electric short-wave infrared heats from the inside and out. Result: high quality curing with increased adhesion and prevention of solvents being shut inside. Medium-wave, long-wave and hot air primarily cure the surface.

## OPTIONS AND ADD-ONS

Options and add-ons create a flexible modular system.

Contact us for assistance. We will make sure you get the exact result you need, in shortest possible time and saving energy in the process.



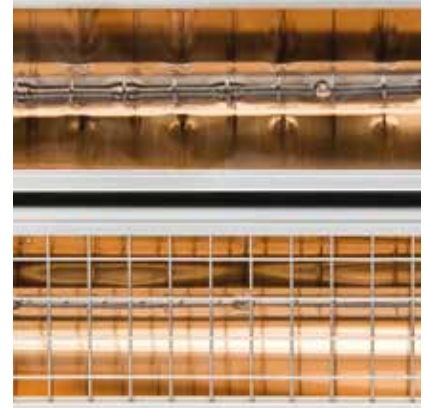
### REFLECTORS

Top: Parabolic / Bottom: Elliptic The IRT SingleHeater secret; direct and reflected radiation on the material.



### VENTILATION

Cooling can be performed with integrated, built-in fan or external fan.



### PROTECTION

Safety glass or mesh in front of the lamp.



### ADD-ON: CONTROL UNIT

Control the object surface temperature in complex thermal cycles with easy-to-use, touch-screen panels. Connect to process start/stop.



### ADD-ON: AUTOMATIC START/STOP

Photo-electric cell detects production line activity.



### ADD-ON: TEMPERATURE CONTROL

Pyrometer for automatic surface temperature control.

## Fast, effective and energy efficient heating for all production lines

IRT SingleHeater consists of reflector body, replacable reflector strip with a surface coating of pure gold (reflects >98% of IR-radiation) and tubular IR-lamp of clear quartz (extremely high transmission capacity of IR-radiation).

Available in modular lengths and customized up to 6 m long, ready to install and connect.

# IRT SINGLEHEATER

## IRT modular system

With IRT SingleHeater, we build simple, high precision effective and compact heat emitters with low power consumption, straight into the existing production line because s little space is required. This opens up great opportunities in getting the right kind of heat in the right place with tricky materials such as paper, plastics, metals, wood, paint and adhesives.

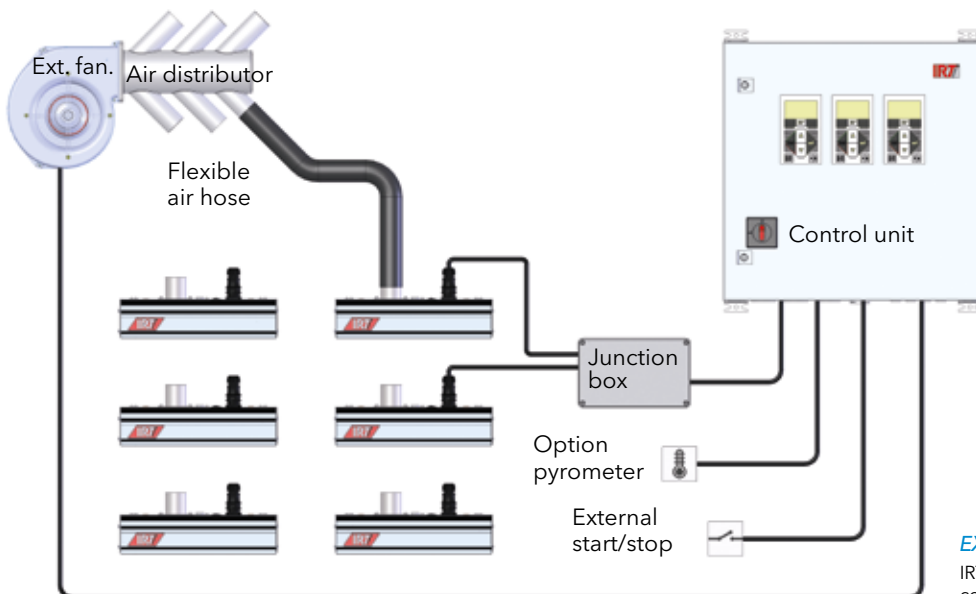
The IRT SingleHeater reacts extremely quickly to heating power regulation. The operational economy is excellent since IRT SingleHeaters are switched on and off based on specific production requirements.

Modular choices for SingleHeater	
Size	117 - 1124 mm
Power	0.2 - 4 kW
Voltage	115 - 480 V
Reflector profile	Elliptic (E) or Parabolic (P)
Lamp protection	Glass (G) or Net (N)
Ventilation	Integrated (I) or External fan (E), external fan is ordered separately

Model	Power	Dimensions (mm)	Voltage
LE/LP 117	0.2 kW	120x92x74	230 V
LE/LP 117	0.2 kW	120x92x74	230 V
LE/LP 230	0.5 kW	233x92x74	230 V
LE/LP 230	1 kW	233x92x74	230 V
LE/LP 360	1 kW	363x92x74	230 V
LE/LP 360	2 kW	363x92x74	230 V
LE/LP 360	3 kW	363x92x74	230 V
LE/LP 360	4 kW	363x92x74	230 V
LE/LP 500	2 kW	503x92x74	400 V
LE/LP 500	3 kW	503x92x74	400 V
LE/LP 790	3 kW	793x92x74	400 V
LE/LP 790	4 kW	793x92x74	400 V
LE/LP 1124	4 kW	1127x92x74	400 V

Control units and add-ons	
202052	Control unit 230V 1ph 6kW
202051	Control unit 230V 3ph 9kW
202053	Control unit 400V 3~N 12kW
202050	Control unit 400V 3ph 18kW
193889	Pyrometer 15:1, 3m
195475	Photocell with laser, incl cable 10m
716197	Junction box for 1 SingleHeater
716198	Junction box for 3 SingleHeater
202113	Junction box for 6 SingleHeater
110381	Air distributor SingleHeater 5 connections
110323	Air distributor SingleHeater 6 connections
121199	Cooling hose 50mm
122293	Hose clamp 50 mm

External cooling fans	
122295	Fan with filter 1ph, 230V, 105W, 3-6 SingleHeater
121454	Fan with filter 1ph, 230V, 41W, 1-2 SingleHeater
109029	Air distributor SingleHeater 1 connections
109323	Air distributor SingleHeater 2 connections
110380	Air distributor SingleHeater 3 connections
110324	Air distributor SingleHeater 4 connections
110381	Air distributor SingleHeater 5 connections
110323	Air distributor SingleHeater 6 connections
121199	Cooling hose 50 mm
122293	Hose clamp 50 mm



**EXAMPLE SET-UP:**  
IRT SingleHeaters with external fan, control unit and pyrometer.

## PERFORMANCE ABOVE ALL

Hedson is a leading supplier of premium curing, lifting and cleaning systems for auto workshops and industry worldwide. We come from the land of engineering, and have decades of experience learning from and innovating to real customer needs – technologies that improve the working environment, protect workers and boost productivity. Our ambition to add real measurable values is obvious wherever Hedson solutions are seen, sold or working – from advanced yet easy to use equipment to unmatched customer service, Hedson stands for performance above all.

[www.hedson.com](http://www.hedson.com)

