

Infrared Heaters For Controlled Concentrated Curing

Model 6020



Infrared Heat. Instantaneous Results.

The Model 6020 DryIR infrared heater is designed for drying applications that require a clean, responsive, non-contact heat source. A single heater can generate a band of heat 0.5, 1.0, or 2-inches (13.0, 25, or 50 mm) in width, with a 10-inch (254 mm) length. The Model 6020 makes it simple to add extra capability enabling increased line speeds. Designed for easy installation, low operation cost, and minimal maintenance, the system is an economical solution. Typical applications for the Model 6020 include:

- Water-based drying
- Solvent-based drying
- Adhesive curing

FAST. FOCUSED. CONTROLLED.

Features and Benefits

- The fast responding, medium-wave quartz lamps heat up and cool down instantly in response to power control signals.
- The lamps provide infrared heat directly to the desired area, resulting in immediate evaporation.
- The aluminum construction of the Model 6020 combined with the air-cooling, allows the heater to withstand continuous high-temperature operation.
- The modular design of the heater allows units to be installed in a variety of configurations suitable for many applications.





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Features and Benefits (Cont'd.)

- Electric heat source is clean and efficient and does not come in contact with product being heated.
- An integrated fan blows air past the lighted lamps resulting in heated air impingement on the target product surface, combined with quartz lamps for extremely fast drying rates.
- Localized energy generated by the unit heats desired target area without heating surrounding areas.
- Potentiometer heat adjustment is available using the plug-and-play Power Control Option.

Description

The Model 6020 includes the following major components:

Heater Module

The heater module uses medium-wave quartz halogen lamps backed by an aluminum reflector to provide heat. It is available in a variety of heated widths, including 0.5, 1.0, and 2.0 inches (13, 25, and 50 mm).

Figure 1:
The reflectors are used to concentrate radiation down onto width up to 2.0 inches



Air Cooling

An integrated fan blows air past the lighted lamps resulting in a heated air impingement on the target product surface. When combined with quartz lamps, the result is immediate evaporation and fast drying rates.

Power Cord

Each unit is supplied with an 8-foot (2.4 m) electrical cord. The cord is not supplied with a connector plug.

Product Sizes

The Model 6020 generates radiant energy and directs it into a band approximately 10 inches (254 mm) long and 0.5 to 2.0 inches (13 to 50 mm) wide. See Figure 4 for reflector options.

Heat Flux Density

Heat flux densities up to approximately 400 watts per square-inch (62 watts per square-cm) can be achieved with the Model 6020 with the 0.5 inch width, operating at the lamp's rated voltage. Heat flux density is a product of the lamp type, applied voltage, and distance between the lamp and the target surface. For best results, it is recommended that the Model 6020 be operated at a distance of 1.0 inch from the product.

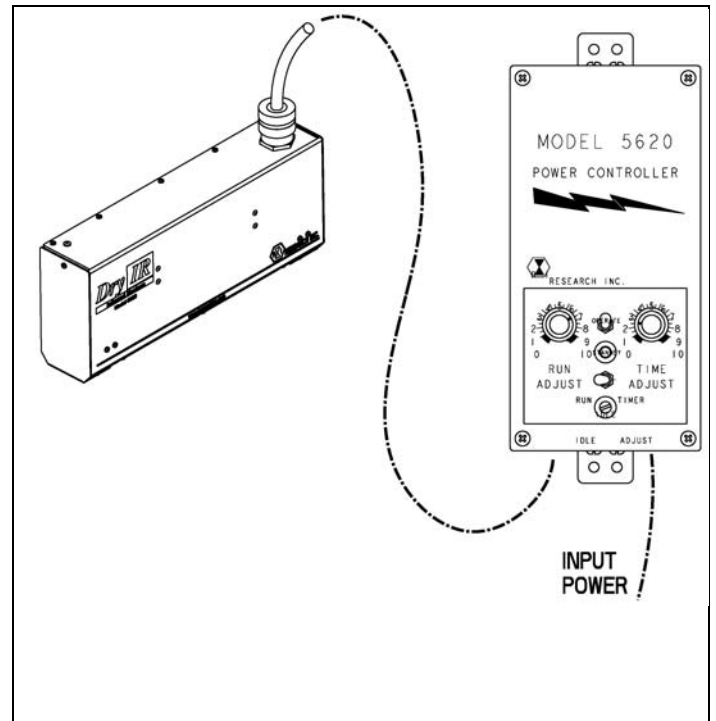
Lamps

Each unit is supplied with two 120 or 240-volt lamps. Additional lamps can be ordered separately from the heater.

Optional Power Controller

The Model 6020 can be ordered with a Power Control "PC" Option. This configuration consists of the Model 6020 heater, a Model 5620 ControllIR® SCR Power Controller, and eight feet (2.4m) of electrical cord connecting the heater to the controller. See Figure 2.

Figure 2: Optional Power Controller



Optional Mounting Kit

The Model 6020 can be ordered with an optional mounting kit. The 6020 comes with a standard mounting bracket for easy mounting. See Figure 3.



Figure 3: Optional Mounting Kit

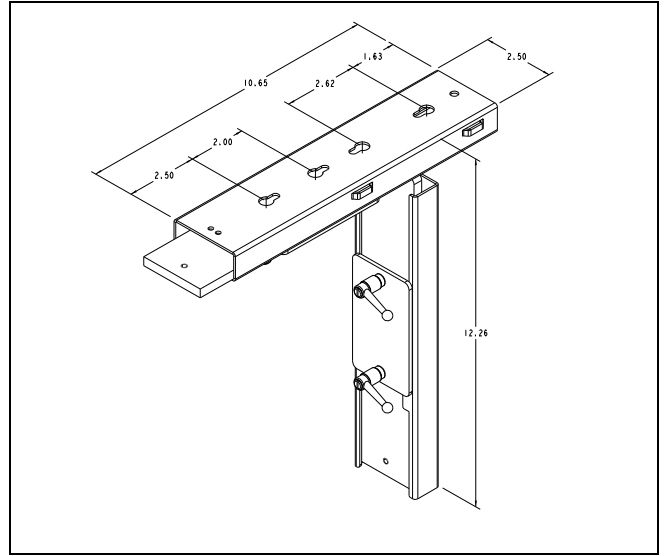
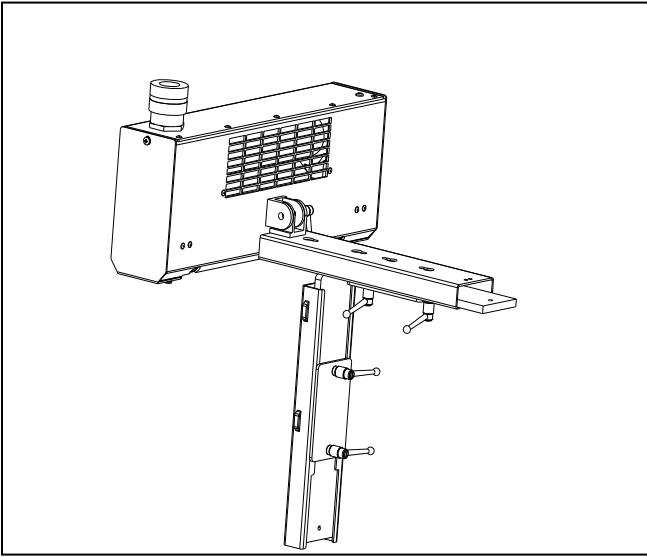
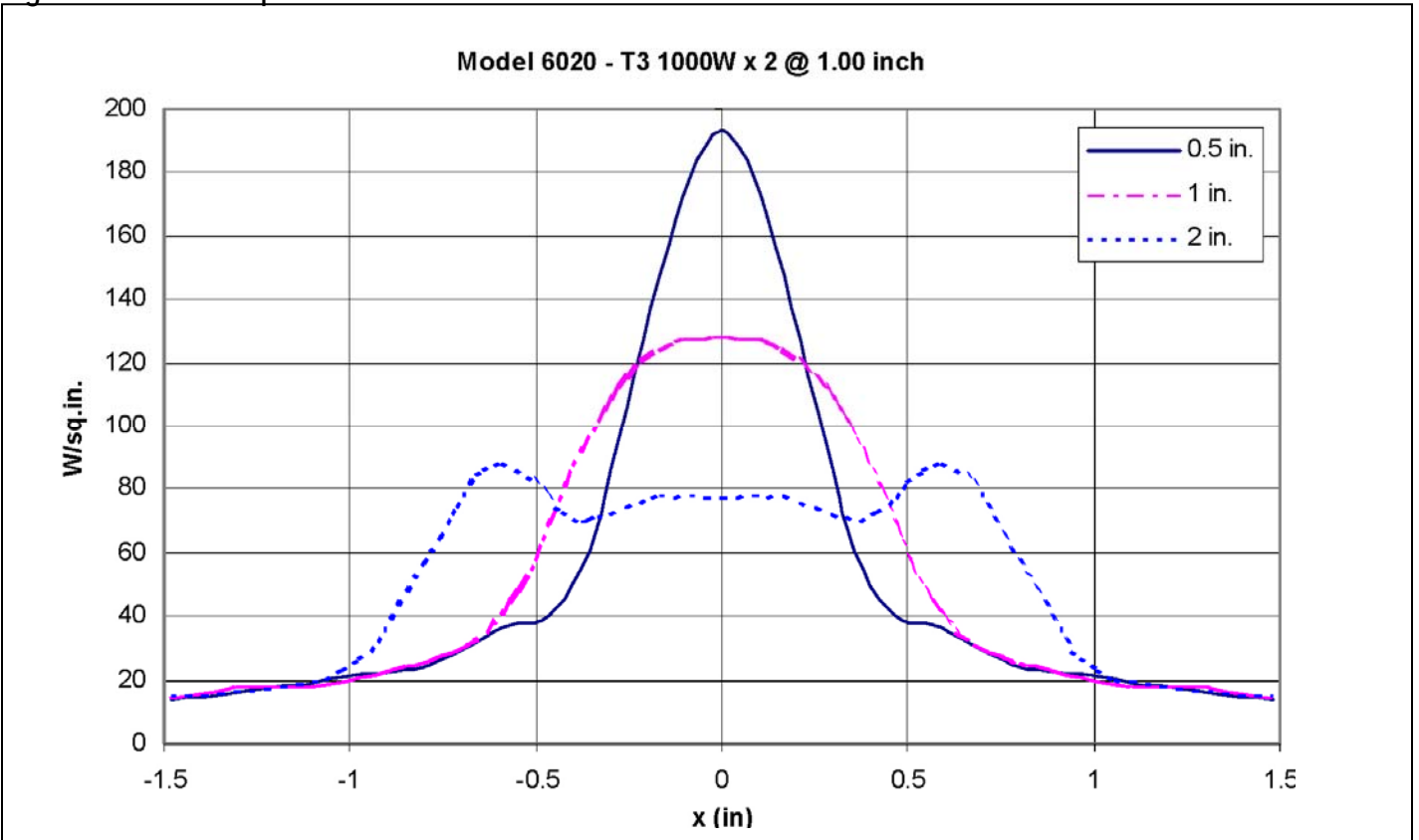


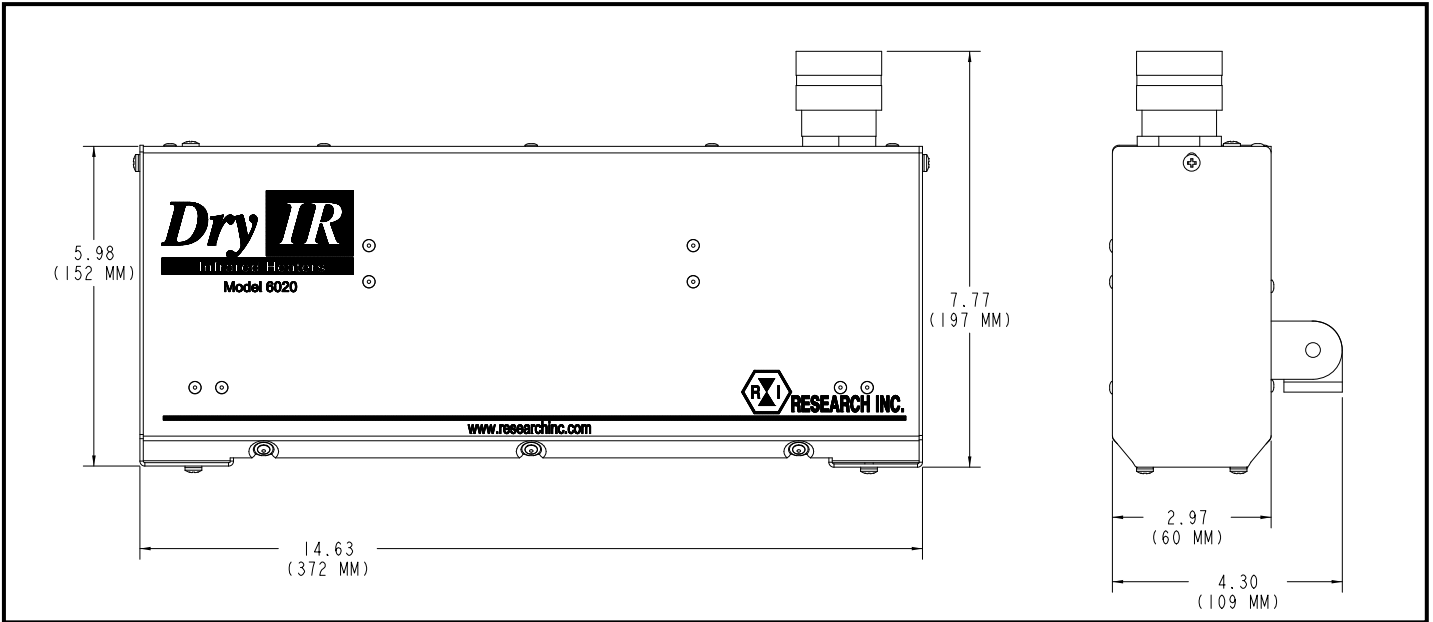
Figure 4: Reflector Options





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Model 6020 DryIR Dimensions - Inches



Specifications – Model 6020

	120 Volts	240 Volts
Maximum Drying Width	0.5, 1.0, or 2.0 inches (13, 25, or 50 mm)	0.5, 1.0, or 2.0 inches (13, 25, or 50 mm)
Overall Length	14.63 inches (372 mm)	14.63 inches (372 mm)
Heated Length	10 inches (254mm)	10 inches (254mm)
Lamps (2 Total)	1000W, 120V Rapido Lamps	1000W, 240V Rapido Lamps
Lamp Orientation	Horizontal Only	Horizontal Only
Amps at Rated Voltage	17 amps	8.5 amps
Power at Rated Voltage	2.0 kW	2.0 kW
Site Requirements	120V/25 amp service	240V/15 amp service
	Personnel to position the system in place	
Blower Air Volume	75 CFM (2.1m ³ /min)	
Power Connection	Electrical power cord (8-foot (2.5 m) length) with pig tail ends	
Mounting Hardware	6 mm threaded mounting screw (Mounting Kit available)	
Control Option	Model 5620 ControllIR [®] SCR Power Controller, and eight feet (2.4m) of electrical cable connecting the heater to the controller	



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Ordering Information – Model 6020

Model	Product Description
6020	DryIR Infrared Heater (Includes 2 medium-wave lamps)
Code	System Voltage
120	120 Volts
240	240 Volts
Code	Drying Width
A	0.5 inches (13 mm)
B	1 inch (25 mm)
C	2 inch (50 mm)
Code	Additional Options
MK	Mounting Kit
PC	Model 6020 supplied with Model 5620 SCR Power Controller and interface wiring

Ordering Example – Model 6020

	Model	System Voltage	Drying Width	Additional Options	Additional Options
Typical Model Number	6020	240	A	MK	PC

Accessories, Spare & Replacement Parts – Model 6020

Model	Description
106876-001	Mounting Kit
083502-004	Replacement Electrical Power Cord (8-foot (2.5 m) length)
106877-003	Lamp Kit, 120V (includes 2 lamps and connectors)
106877-002	Lamp Kit, 240V (includes 2 lamps and connectors)
M6020	Additional Model 6020 Operation Manual (one supplied with each heating module)
106763-001	FAB – End Reflector, 0.75 PRT
106761-200	Reflector A [0.5" (13 mm) reflector]
106761-001	Reflector B [1.0" (25 mm) reflector]
106761-100	Reflector C [2.0" (50 mm) reflector]



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Infrared Heaters For Controlled Concentrated Curing.

Heater's Available from Research, Inc.

Research, Inc. is the industry leader in the design, development and manufacture of electric infrared heating components and integrated heating systems. Our products are designed to meet a wide variety of process requirements including the drying, heating, curing, soldering, bonding and annealing of many different materials.

Whether it's one of our standard products or a custom heating system, we are committed to providing solutions to meet our customer's most demanding heating needs. The following types of heaters are available:



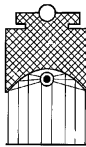
A single lamp and reflector heating system that focuses energy on a small (.25") target. Instant on/instant off capability makes it ideal for applications such as soldering, localized heat treating, and stress relieving.



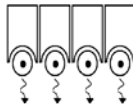
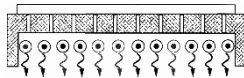
A lamp and formed reflector that concentrates heat precisely on a .25" wide line. Excellent for forming plastic, local heat treating and drying ink.



A lamp and formed reflector that provides even heat distribution across a 1.5 or 1.7" wide strip. Can be used for curing, drying and precise heating.



Designed with either ceramic or aluminum reflectors, the heater can provide consistent heat over a large area. Used for most drying and curing applications.

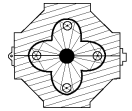


Offers the capability to create a custom area heater design to match the application's area heating needs. Multiple modules are housed

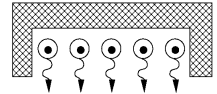
together in a sheet metal enclosure to provide the desired heating effect.



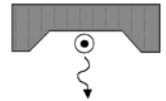
A cylindrical chamber with controlled, concentrated infrared energy for curing extrusions, drying ink in a moving line or heating a stationary test specimen.



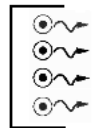
Designed to provide high-intensity infrared heat onto localized areas with a high concentration of infrared heat. Excellent for annealing, heat treating, or providing controlled heat for high temperature controlled testing.



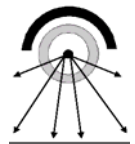
Designed with aluminum reflectors, the heater provides a low, uniform heat flux. Ideal for drying or curing adhesives, curing rubber/silicone and plastics processing.



An aluminum reflector and either medium or short-wave lamps provide a band of heat from .5" - 4" wide. Can be used for water-based drying, solvent-based drying and adhesive curing.



Used for efficient irradiation of test vehicle surfaces to simulate the infrared energy generated by the sun, planet reflection, and planet radiation inside a space chamber.



Application Chart

Family

Heat Profile

	Spot IR <small>INFRARED HEATERS</small>	Line IR <small>INFRARED HEATERS</small>	Strip IR <small>INFRARED HEATERS</small>	Panel IR <small>INFRARED HEATERS</small>	Chamber IR <small>INFRARED HEATERS</small>	Hi-Temp IR <small>INFRARED HEATERS</small>	Module IR <small>INFRARED HEATERS</small>	Lo-Temp IR <small>INFRARED HEATERS</small>	Dry IR <small>INFRARED HEATERS</small>	Simulate IR <small>INFRARED HEATERS</small>
Coatings	Cure and Melt Powders			✓					✓	
	Dry and Cure Paints		✓	✓				✓	✓	
	Dry Inks		✓	✓				✓	✓	
	Dry Adhesives		✓	✓				✓	✓	
	Preheating	✓	✓	✓	✓	✓	✓	✓	✓	
Composites	Resin Curing		✓	✓				✓	✓	
	Curing		✓	✓				✓	✓	
	Filament Winding	✓								
	Laminating		✓	✓				✓		
	Ceramic Processing				✓					
Electronics	Shrink Insulation			✓						
	Soldering/ Desoldering	✓	✓	✓						
	Thick Film Drying			✓						
	Wafer Processing					✓				
	Aerodynamic Heating Simulation					✓				✓
Material Testing	Coupon Tests				✓					
	Structural Tests				✓					
	Thermal Stress Test					✓				
	Annealing		✓							
	Brazing		✓							
Metal Processing	Preheating	✓	✓	✓				✓		
	Soldering	✓	✓	✓						
	Spring Stress Relief					✓				
	Weld Stress Relief			✓	✓					
	Activating Thermo Transfer	✓	✓	✓	✓			✓	✓	
Plastics	Bending		✓					✓		
	Bonding	✓	✓					✓		
	Preheating	✓	✓	✓	✓	✓	✓	✓		
	Thermofforming	✓	✓	✓	✓			✓		
	Welding	✓	✓							
Reglossing	Chocolates			✓						
	Cosmetics			✓						
	Plastic Tubing				✓					
	Soap		✓							
	Curing			✓						
Rubber/ Silicone	Pre-Cure			✓						
	Preheating	✓	✓	✓	✓	✓	✓	✓	✓	
	Vulcanizing			✓						