




wecointernational.com

(810) 686-7221

Infrared Heater Control Solutions

Process and Comfort Heating



**INFRARED PROCESS
AND COMFORT
HEATING**

JOHN F. GRUBER

**10TH
EDITION**

10TH EDITION



WECO International, Inc.



WECO International specializes in the engineering and supply of ovens, control solutions, and components for a vast array of industries. WECO inventories a wide variety of products: CERAMICX halogen, tungsten, ceramic, quartz heaters, and necessary accessories; HETRONIK multi-channel heat controllers; SCE enclosures; programming port interface modules; transformers and lighting disconnects; specialty wire; and residential/commercial comfort heating solutions.

WECO integrates our products to provide new and retrofit oven assemblies and controls for a variety of infrared heating applications, including forming, curing, and drying. WECO proudly introduces our new line of Energy Efficient Oven (E²O) modules, giving every customer the ability to "Go Green", stay on budget, and quickly build their own highly efficient long or short wave infrared oven. WECO creates "Intelligent Infrared" with high efficiency elements and unlimited zoning control to minimize energy usage, maximize production and reduce scrap.

Serving our customers since 1972, WECO is proud to be your unique supplier for your heating and control requirements. Through persistence, determination, and with integrity, we strive to improve your bottom line and exceed your expectations with every order.

I would personally like to thank you for letting us serve you since 1972. I pledge that we are dedicated to offering you world-class products promptly and with the best service and pricing possible. Our team provides excellent technical and application support, ensuring that the right products are selected for your unique situation each and every time. We look forward to working together with you.

Regards,

TERMS AND CONDITIONS OF SALE

PAYMENT TERMS

Customers with satisfactory credit may purchase product on open account. Payment NET 30 days from date of invoice. We also accept Master Card and Visa. Payment accepted in U.S. dollars only. \$50 Minimum order.

DELIVERY

Shipping dates are based on our best estimate of the factory conditions at the time the order is accepted.

GOVERNMENT REGULATIONS AND TAXES

Any regulation, restriction or tax imposed on goods furnished by WECO International, Inc. are the responsibility of the purchaser. Any testing or disposal of material shall be purchaser's responsibility.

CANCELLATION

Orders of standard catalog items in small quantities may be cancelled if written notice is received and confirmed before production. Large quantities of standard product costs incurred up to the point of cancellation will be billed to the purchaser.

RETURNED GOODS

WECO International, Inc. must receive written request within 60 days from the date of invoice for any product to be returned. Standard product in resalable condition will be assessed a 25% restocking charge. Return freight to be paid by purchaser. Upon receipt of product, WECO International, Inc. will inspect and determine salability. Any cost above restocking charge required to make product salable shall be deducted from the credit.

FREIGHT TERMS

All other shipments, including Overnight Air, UPS, RPS and Common Carrier, will be shipped EXW Clio, freight prepaid and add (WECO International, Inc. will initially pay the freight charges and add to the invoice. The consignee will be responsible for the freight en-route and file any claims if necessary).

CATALOG ERRORS

Catalog dimensions are close estimates. However, manufacturing processes may necessitate slight deviations.

PENALTY CLAUSE

No penalty clause shall be in effect unless written approval is obtained from an officer of WECO International, Inc.

CUSTOM ORDERS

Please contact an Inside Sales Agent or call you local Sales Representative for terms governing custom orders.



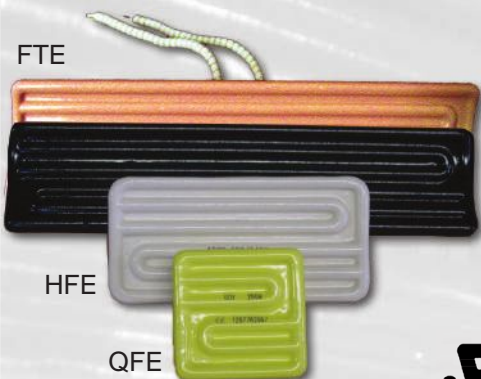
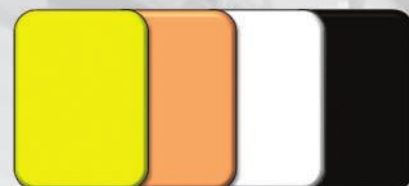
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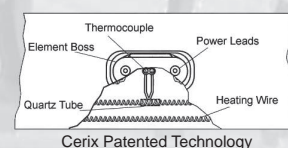
Long Wave Ceramic Infrared Emitters

Ceramicx Long Wave (Far) Ceramic Emitters

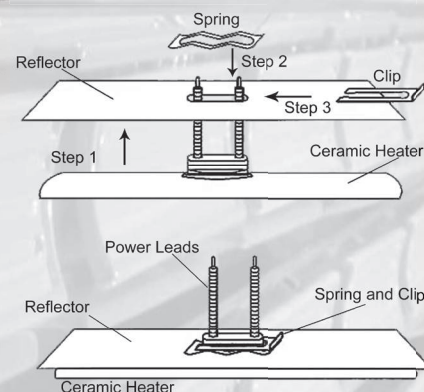
- Ceramic infrared emitters provide long wave infrared radiation between 3.5-10 microns and up to 1265°F (685°C).
- Most plastics and many other materials have an affinity for long wave infrared (IR), making the ceramic element the most versatile and efficient infrared radiant heater on the market.
- Ceramic emitters are used in a range of applications: thermoforming, paint curing, printing, drying, infrared patio heaters and infrared saunas.
- Options:
 - Color Changing, Cool (Hot):
 - Yellow (Brown)
 - Coral (Gray)
 - Non Color Changing:
 - White, Beige or Black
 - Thermocouple:
 - Cerix J or K Type Thermocouple



CE®
ALUS



ESEXL



Style	Desc.	Wattage (Watts)	Voltage (VAC)	Mean Surface Temperature deg F (deg C)	Heat-up Time (mins)	Dimensions LxWxD (mm)
FTE	Full Trough Emitter	150 – 1000	120/240/480	491 (255) - 1265 (685)	8 – 13	245 x 60 x 31
HTE	Half Trough Emitter	125 – 500	120/240/480	670 (354) - 1265 (685)	8 – 13	122 x 60 x 31
QTE	Quarter Trough Emitter	125 – 250	120/240/480	670 (354) – 1265 (685)	8 – 11	60 x 60 x 31
LFTE	Large Full Trough Emitter	1000, 1500	120/240/480	952 (511) – 1105 (596)	8 – 11	247 x 110
FFE	Full Flat Emitter	150 – 1000	120/240/480	491 (255) – 1265 (685)	9 – 13	245 x 60 x 24
HFE	Half Flat Emitter	125 – 500	120/240/480	670 (354) – 1265 (685)	8 – 13	122 x 60 x 24
LFTE	Large Full Flat Emitter	200 – 1400	120/240/480	400 (204) – 1233 (667)	10 – 11	247 x 90
SFSE	Square Flat Solid Emitter	150 – 1000	120/240/480	491 (255) – 1116 (602)	9 – 13	122 x 122 x 24
FFEH	Full Flat Emitter Hollow	150 – 800	120/240/480	721 (383) – 1238 (670)	9 – 10	245 x 60 x 36
HFEH	Half Flat Emitter Hollow	125 – 400	120/240/480	721 (383) – 1238 (670)	9 – 10	122 x 60 x 36
QFEH	Quarter Flat Emitter Hollow	125 – 250	120/240/480	907 (486) – 1265 (685)	9 – 10	60 x 60 x 24
SFEH	Square Flat Emitter Hollow	250 – 800	120/240/480	721 (383) – 1238 (670)	7 – 10	122 x 122 x 36
ESE	Edison Screw Emitter Bulbs	60 – 500	120/240/480	572 (300) – 1040 (560)	9 – 11	up to 140 x 140

Long Wave Ceramic Infrared Ovens

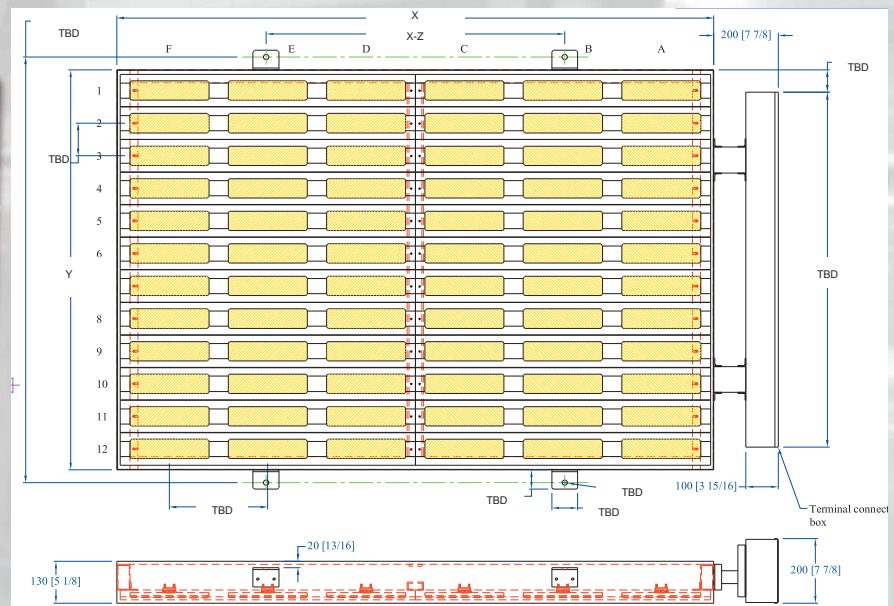


Ceramicx Long Wave (Far) Ceramic Infrared Ovens

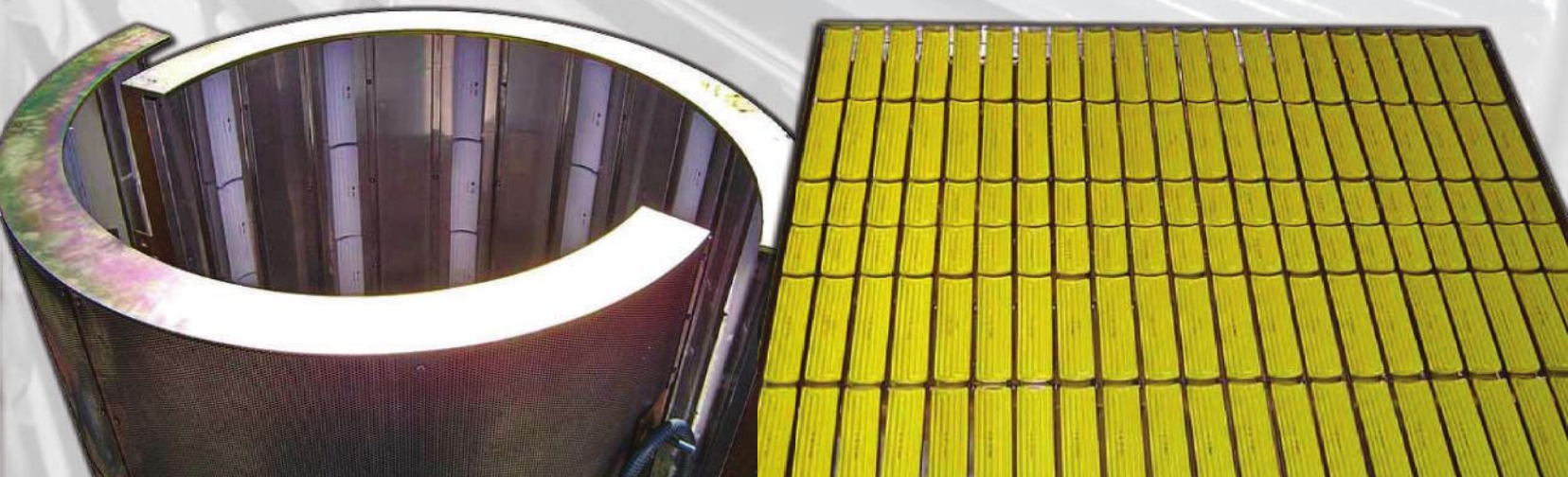
- X" x Y" heated area
- X heaters per zone for X zones of control, customer specific
- "Intelligent Infrared" uses highly efficient elements and unlimited zone control options to minimize energy usage, maximize production, and reduce scrap
- Mounting brackets as required to match existing mounting provisions
- Each heater wired back to terminal junction box on end of oven frame
- Optional pre-wired quick connect system
- Drawings and documentation included



Note: Color changing emitters from yellow to brown.



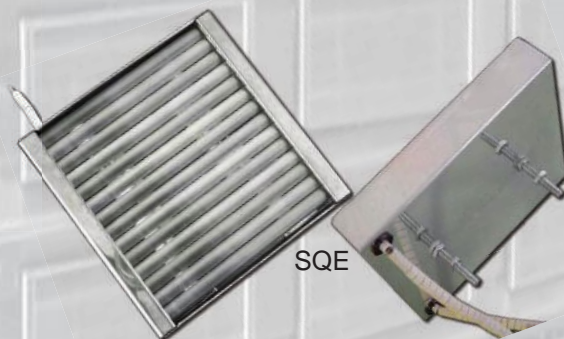
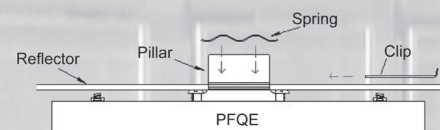
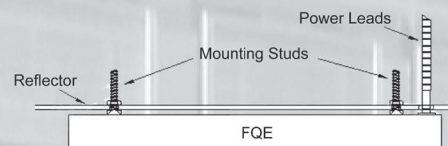
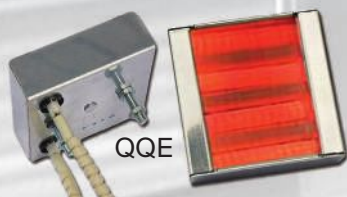
Ovens are available in a variety of shapes and configurations.
Mix and match element sizes and wattages to fit every application.



Medium Wave Quartz Infrared Emitters

Ceramicx Medium Wave Quartz Infrared Emitters

- Quartz emitters have a broad emission spectrum of 3-8 microns
- Quartz emitters reach temperatures up to 1422°F (772°C)
- Quartz infrared heating emitters are effective in systems where faster heater response is required.
- Pillared quartz emitters have the same mounting fixture as ceramic emitters allowing replacement without difficulty.
- A combination of ceramic and quartz is ideal for design alternatives involving the use of materials with different absorption characteristics.
- Options:
 - Thermocouple:
 - Cerix J or K Type Thermocouple



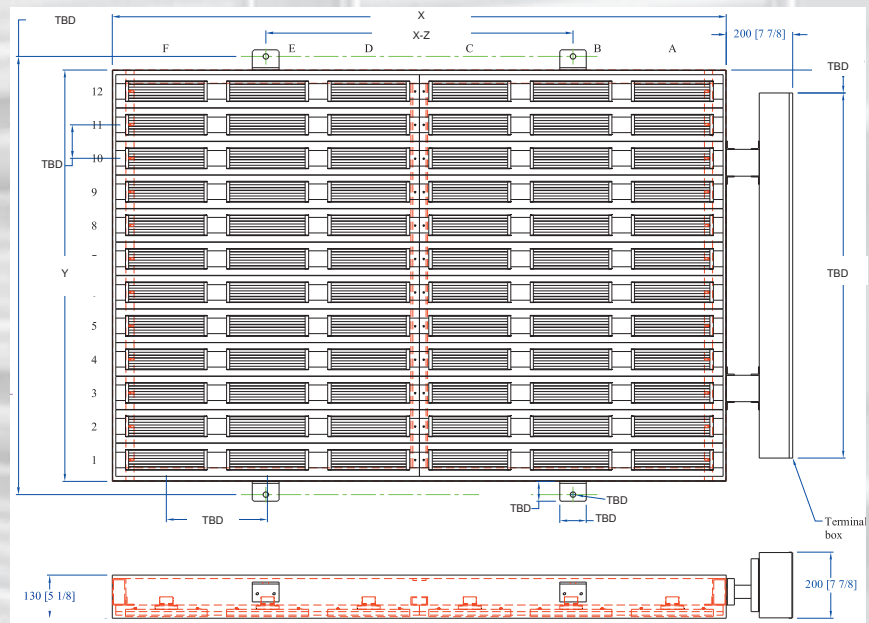
Style	Desc.	Wattage (Watts)	Voltage (VAC)	Mean Surface Temperature deg F (deg C)	Heat-up Time to 100% (mins)	Dimensions LxWxD (mm)
FQE	Full Quartz Emitter	150 – 1000	120/240/480	650 (343) – 1422 (772)	4 – 6	253 x 62.5 x 22
HQE	Half Quartz Emitter	150 – 500	120/240/480	878 (470) – 1422 (772)	4 – 5.5	124 x 62.5 x 22
QQE	Quarter Quartz Emitter	125 – 250	120/240/480	1175 (635) – 1422 (772)	4 – 5	62.5 x 62.5 x 22
SQE	Square Quartz Emitter	150 – 1000	120/240/480	650 (343) – 1422 (772)	4 – 6	124 x 124 x 22
PFQE	Pillard Full Quartz Emitter	150 – 1000	120/240/480	650 (343) – 1422 (772)	4 – 6	247 x 62.5 x 22
PHQE	Pillard Half Quartz Emitter	150 – 500	120/240/480	878 (470) – 1422 (772)	4 – 5.5	124 x 62.5 x 22
STQH	Single Tube Quartz Emitter	150 – 650	240		4 – 6	100, 112, 140, 150

Medium Wave Quartz Infrared Ovens



Ceramicx Medium Wave Quartz Infrared Ovens

- X" x Y" heated area
- X heaters per zone for X zones of control, customer specific
- "Intelligent Infrared" uses highly efficient elements and unlimited zone control options in order to minimize energy usage, maximize production, and reduce scrap
- Mounting brackets as required to match existing mounting provisions
- Each heater wired back to terminal junction box on end of oven frame
- Optional pre-wired quick connect system
- Drawings and documentation included

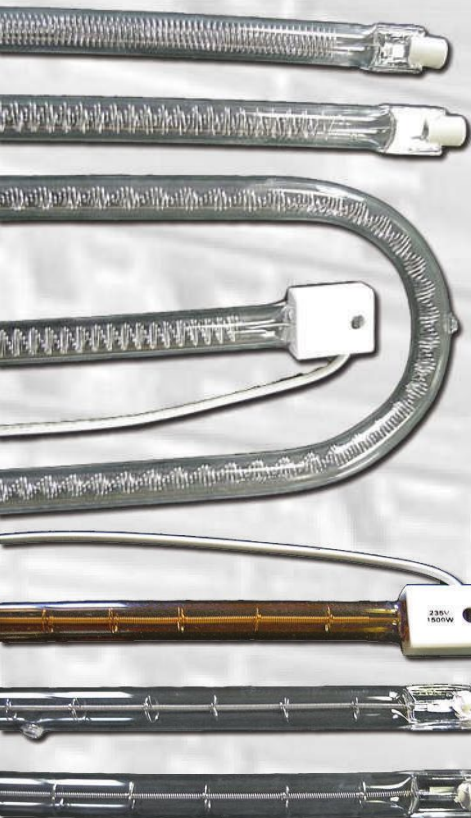


Ovens are available in a variety of shapes and configurations.
Mix and match element sizes and wattages to fit every application.





Short (Near) Wave Tungsten/Halogen Emitters

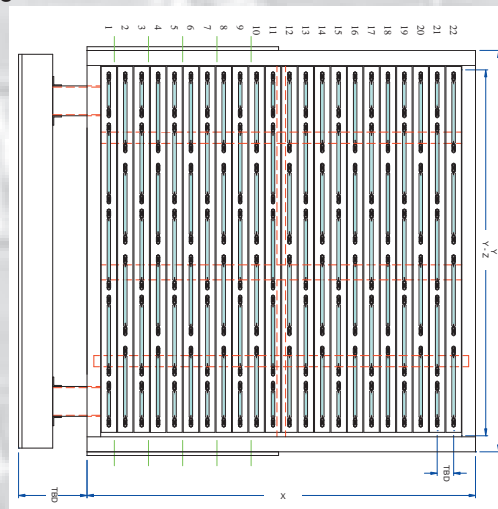
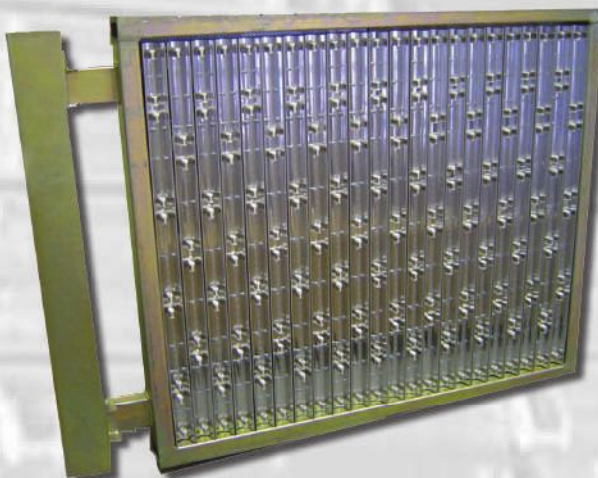


QUARTZ
TUNGSTEN
EMITTERS

QUARTZ
HALOGEN
EMITTERS

Short (Near) Wave Quartz Tungsten/Halogen Emitters

- Quartz Tungsten and Halogen fast response (obtains top temperatures in seconds), high intensity tungsten filament heating lamps emit medium to shortwave infrared radiation.
- Built into special heat reflector systems, the emitters allow instant heat, precise control and very effective directional heating.
- The tungsten filament used in Quartz Tungsten emitters is the porcupine or star type coil, which can be operated at temperatures up to 1500°C (2732°F), with peak wavelength emissions of approximately 1.6 microns. Having excellent structural rigidity, this coil is designed to minimize light output and maximize IR emission thereby increasing IR radiant efficiency.
- Quartz Halogen emitters are filled with Halogen gas to allow the supported tungsten filament to reach temperatures as high as 2600°C (4712°F). The emitter has peak wavelength emissions of approximately 1 micron, are extremely penetrative, and allow rapid on/off cycles.
- Options:
 - Lead Styles:
 - R7s or various lead lengths
 - Quartz Tungsten Elements:
 - QTL – Quartz Tungsten Long Emitter
 - QTM – Quartz Tungsten Medium Emitter
 - QTS – Quartz Tungsten Short Emitter
 - Pillared Elements:
 - QHL – Quartz Halogen Long Emitter
 - QHM – Quartz Halogen Medium Emitter
 - QHS – Quartz Halogen Short Emitter



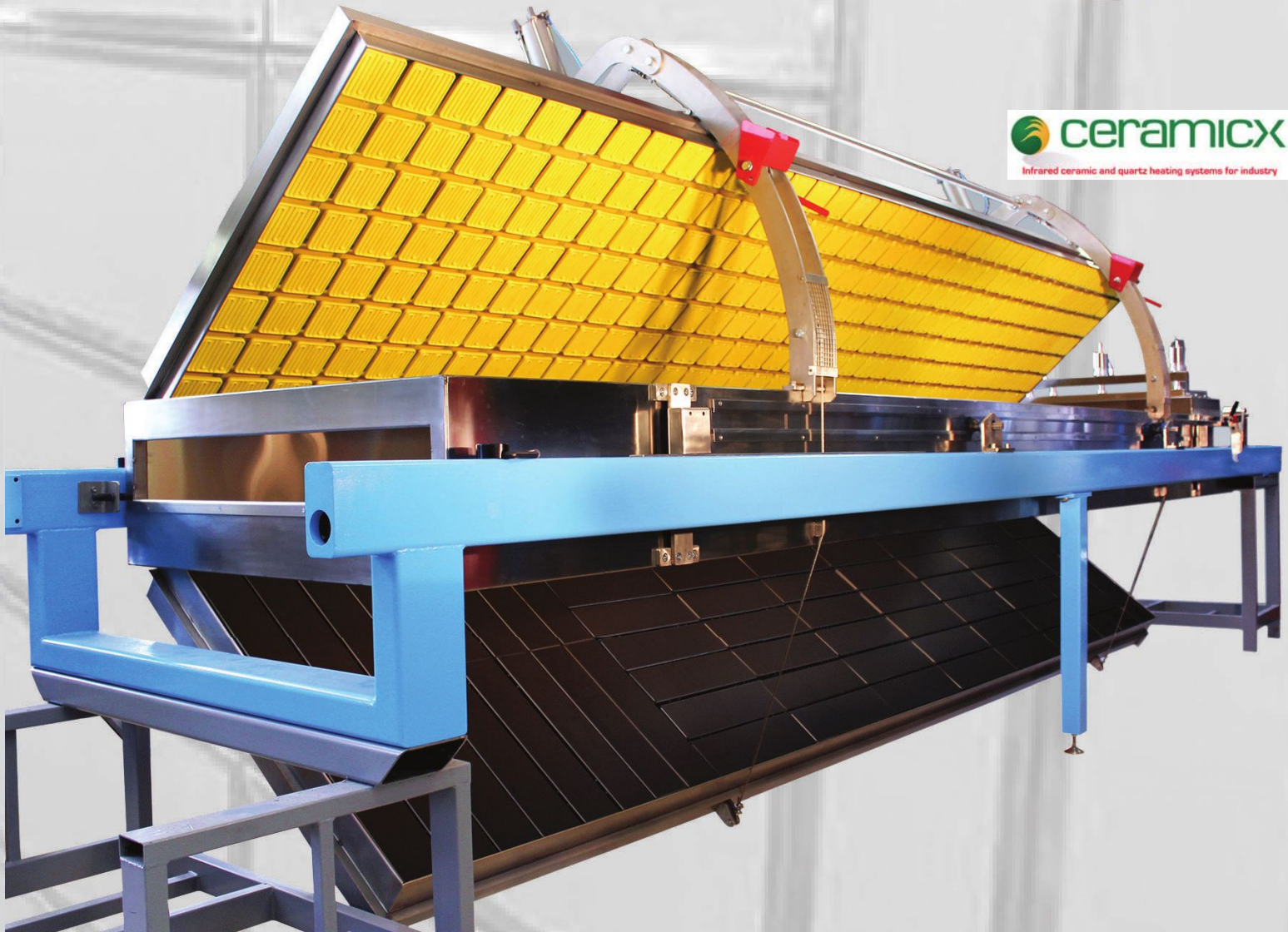
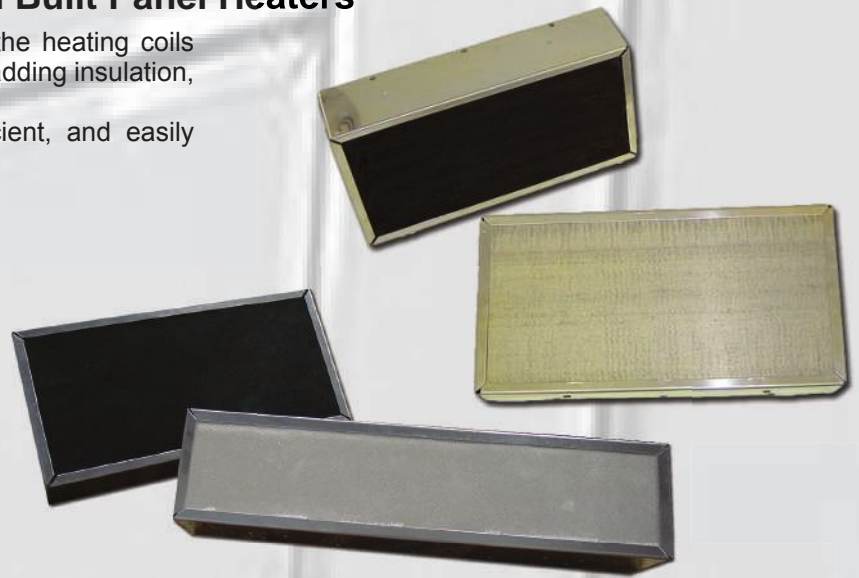
Style *	Wattage (Watts)	Voltage (Vac)	Max Coil Temperature deg F (deg C)	Terminals	Glass Diameter	Overall Length inch (mm)	Heated Length inch (mm)
QTS	750	120/240/480	2642 (1450)	R7s	10mm	8.81 (224)	6.69 (170)
QTM	750 - 1000	120/240/480	2210 (1210) - 2642 (1450)	R7s	10mm	10.91 (277)	8.86 (225)
QTL	1500 - 2000	120/240/480	2310 (1270) - 2732 (1500)	R7s	10mm	18.62 (473)	16.34 (415)
QHS	1000	240	4370 (2410)	R7s	10mm	8.81 (224)	6.69 (170)
QHS	1000	480	4568 (2520)	R7s	10mm	8.81 (224)	9.25 (235)
QHM	1000	240/480	4370 (2410)	R7s	10mm	10.91 (277)	9.25 (235)
QHL	2000	240	4082 (2250)	R7s	10mm	18.62 (473)	16.73 (425)
QHL	2000	480	4334 (2390)	R7s	10mm	18.62 (473)	16.73 (425)

Long (Far) Wave Panel Heaters



Ceramicx Long (Far) Wave Custom Built Panel Heaters

- Custom built infrared panel heaters have the heating coils embedded in a special ceramic fiber board adding insulation, durability, and shock resistance.
- Panel Heaters are extremely robust, efficient, and easily mounted.
- Wide Range of Wattage/Voltage
- Customized Length x Width x Height
- Options:
 - Face:
 - Anodized Aluminum
 - Cloth
 - Zoning:
 - Single – zone
 - Multi – zone
 - Thermocouple:
 - Replaceable Thermocouple

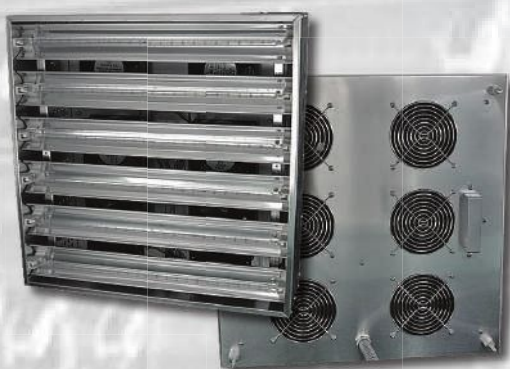




E2O - Energy Efficient Ovens Short Wave FastIR Modules

E²O Series - Short Wave FastIR Oven Modules

- These compact, robust heating systems form an ideal instant on short wave oven using the quartz tungsten and halogen glass tube emitters.
- Optimum efficiency is achieved by highly polished aluminized steel reflectors and rear mounted axial flow fans, eliminating rear convection losses and cooling the critical molybdenum crimp.
- The external body is manufactured of an stainless steel housing.
- FastIR Model #305
 - 4,000W (12" x 12" - 4 Tube)
 - 5,000W (12" x 12" - 5 Tube)
- FastIR Model #500
 - 12,000W (20" x 20" - 6 Tube)
 - 14,000W (20" x 20" - 7 Tube)



FastIR Model #500 Series



FastIR Model #305 Series



IR Model #305 Series
(Available in Quartz and Ceramic)

PAS - Projector Aluminized Steel

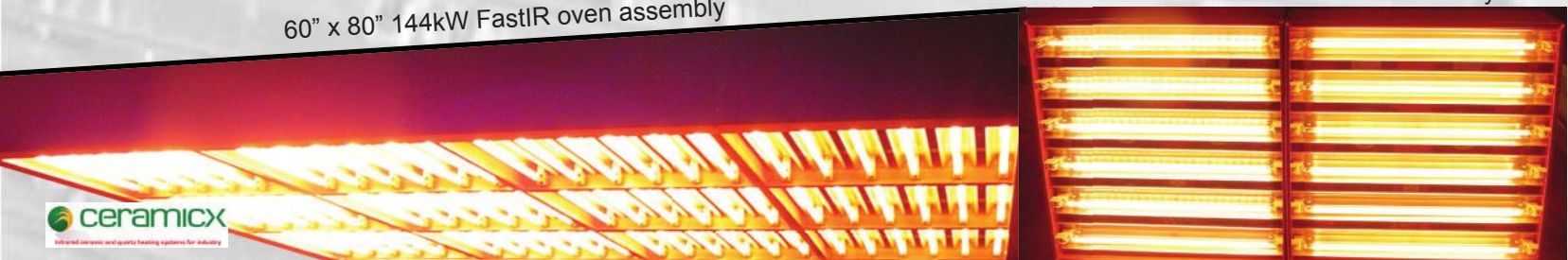


RAS - Reflector Aluminized Steel



60" x 80" 144kW FastIR oven assembly

20" x 40" 28kW FastIR oven assembly



Heater Control Panels & Energy Management



WECO Offers a Wide Range of Both Standard and Custom Engineered Power Panels

SCR & SSR Power Panels

- Single or Three Phase, Phase Angle Fired, Zero Voltage Switch.
- Nema 12,3R, 4X, S.S. Enclosures Available
- Fan Cooled or Air Conditioned
- Temperature Controlled (Optional)
 - Pyrometer
 - Contact Thermocouple
- Standard Panel Sizes are 20,30,60,100,150,200,250,350 and 600 AMP;
24-600 VAC



AVATAR
INSTRUMENTS

WECO Offers Energy Monitoring and Energy Power Quality Systems For Monitoring Energy Consumption As Well As Problems With Power Quality.



Energy Management Systems

- Phase Sequence
- Phase Asymmetry
- Phase Loss
- Harmonic Analysis
- Total & Partial Kwh and Kvarh
- Revenue Grade
- Run Hour Counter
- Date Stamp
- Ethernet IP on Request

**Measure Your
Energy Costs:
Per Part!
Per Shift!
Per Machine!**



Infrared Testing Services and Training Courses

Test Oven

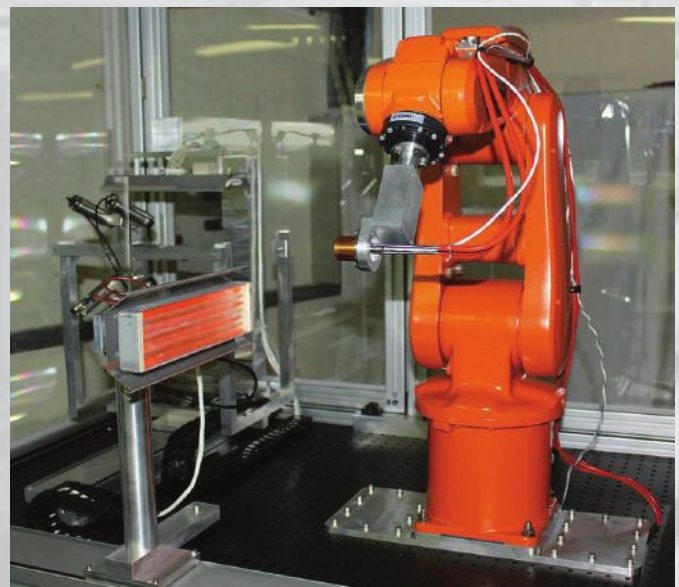


Long/Medium/Short Wave Infrared Test Oven

- Infrared test oven for material versus heater type evaluations
- Total electrical load: 6kW to 8kW
- Power supply: Single phase 240V, 40A minimum recommended
- Maximum power density: 25W/in²
- Maximum sheet size: 450 x 350mm (17.7" x 13.8")
- Supplied with 3 interchangeable heating platens containing long wave ceramic (375W), medium wave quartz (375W), and short wave halogen (2000W) heaters
- 2 zone open loop 0-100% control
- Power switching via phase angle fired SCR's (thyristors)
- Forced air cooling system
- Thermally insulated side walls
- Platen reflectors manufactured from polished aluminized steel (500°C/932°F max)
- Includes power cable and device over current protection

Long/Medium/Short Wave Infrared Testing

- Material testing with all wavelengths emitters to determine best wavelength to achieve fastest heat up time/forming temperature
- Infrared testing of customer supplied material versus heater type
- Data table and graphical reports similar to charts shown below
- Determine the best emitter for the fastest cycle time on single product (material specific) dedicated machines
- Determine the best emitter for fastest cycle times across a variety of products on multiple product code machines



On-Site and Online Training Courses

Ceramicx and WECO have teamed up to provide training courses for our customers who wish to understand Infrared technology. An informed and educated employee is the most productive. These courses are designed to teach the student the basics of IR through a complete understanding of how and why IR affects your process. Customers can subscribe to the online training courses with unlimited seats per company. A company will have the ability to train each and every one of their employees at their own pace. Each course is complete with a test, grade and certificate of completion. The course can be taken as many times and required, needed or desired.

MODULE 1: Fundamentals of Heat Transfer and Infrared

MODULE 2: Infrared Energy In Process Heat

MODULE 3: Matching The Infrared Element to the Application

MODULE 4: Control of Infrared

MODULE 5: Introduction to Energy Efficient Controls & Ovens

Infrared Heating Assemblies and Accessories



Engineered assemblies and accessories allow infrared emitters to function at their maximum potential. High temperature elements require specialized heat resistant components to allow for safe operation and a durable assembly.



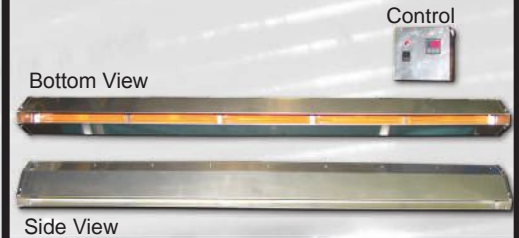
Non-Touch Pyrometer



Thermocouple & Thermocouple Wire



Line Bender - FocusIR



Designed to run 1-5 ceramic or quartz elements, FocusIR projector assemblies with a narrowed focus point allow precise heat control for line bending applications. Available in a variety of sizes, wattages, voltages and zoning.

Enclosure Heaters



The 5" W x 12" L x 6" H 500/1000W 240V enclosure heaters are great for light signal boxes or any place that may need freeze and condensation protection. Also included is a fan for circulation of the warmth.

ESE Holder and Reflector



ESE reflectors are used with ESE style ceramic bulbs to maximize the infrared output delivered to a target. The high temperature porcelain holder is used to mount the bulb to the reflector and acts as a terminal block to deliver power.

High Temperature Terminal Blocks



Open or closed high temperature ceramic terminal blocks are used for power distribution in a variety of high temperature applications including RAS, PAS, Line Bender, and Oven assemblies.

Termination Styles

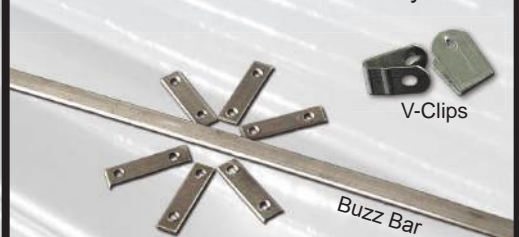


Ceramic R7s holders are used for the mounting of heaters with the R7s termination and have a maximum temperature rating of 350°C (662°F). The standard terminations on the power leads of all ceramic emitters are 10mm long uninsulated ferrules. Ring terminations are also available.



- MGT 538°C (1000°F) 600V Heavy Duty High Temperature
- PFA/PTFE 250°C (482°F) 600V Teflon® Insulated
- TGGT 250°C (482°F) Apparatus and Power
- 200°C (392°F) SRML Silicone Rubber/ Glass Braid Motor Lead Wire
- Additional Specialty Wire and Cable Assemblies

Buzz Bar Power Distribution System



Buzz Bars (Dimensions: 8 x 2 mm) can be used with the ceramic terminal block to produce a flexible and maintenance free power distribution system. V-clips are used to connect power leads to buzz bar distribution systems with a supplied fixing screw.



HC500 COMPONENTS



HC500 MODULES



HC500 INSTALLED SYSTEM

Advantages of HETRONIK Heater Control Systems

HETRONIK heater control (HC) systems are percentage and temperature controllers. HC Systems have a CPU to control their outputs by firing single half or full sinusoid waves of the 50 or 60 Hz power supply voltage. They have the ability to monitor current loads, fuses, and cables for failure. HC's have replaceable fast melt fuses to protect the triacs against destruction at short circuit. HC's keep the power output (heat) constant as the supply voltage fluctuates. As compared to PLC controlled SSRs, the HC products fire emitters much faster, need substantially less space in the electrical cabinet and provide detection of broken heaters, fuses, and cables.

ADVANTAGES ARE:

- **FAILURE DETECTION** - single heating element failure detection without additional hardware
- **SINUSWAVE FIRING** - more precise control and even heating with sinuswave firing
- **VOLTAGE COMPENSATION** - maintains constant voltage output to heaters regardless of incoming voltage fluctuations
- **SYNCHRONIZED FIRING** - reduces peak amperage requirements
- **INTELLIGENT INFRARED ZONING** - overall field percentages allows operators to change zones quickly, and smart zoning maximizes energy savings across product mixes
- **PRODUCTION/STANDBY ZONES** - maximize energy savings to operating schedule during breaks/lunch, etc.
- **REDUCED WIRING** - power outputs and fuses are part of the systems
- **COMPACT** - less space needed in control enclosure -vs- SSR style systems

7:53:21 PM 1/30/2013 Recipe # 16 3541-7 BOTTOM OVEN CONTROL SETUP SCREEN



Oven Zone Status

	OC01	OC02	OC03	OC04	OC05	OC06	OC07	OC08
CH01	Heater U Fuse 001 Triac	Heater U Fuse 013 Triac	Heater U Fuse 025 Triac	Heater U Fuse 037 Triac	Heater U Fuse 049 Triac	Heater U Fuse 061 Triac	Heater U Fuse 073 Triac	Heater U Fuse 085 Triac
CH02	Heater U Fuse 002 Triac	Heater U Fuse 014 Triac	Heater U Fuse 026 Triac	Heater U Fuse 038 Triac	Heater U Fuse 050 Triac	Heater U Fuse 062 Triac	Heater U Fuse 074 Triac	Heater U Fuse 086 Triac
CH03	Heater U Fuse 003 Triac	Heater U Fuse 015 Triac	Heater U Fuse 027 Triac	Heater U Fuse 039 Triac	Heater U Fuse 051 Triac	Heater U Fuse 063 Triac	Heater U Fuse 075 Triac	Heater U Fuse 087 Triac
CH04	Heater U Fuse 004 Triac	Heater U Fuse 016 Triac	Heater U Fuse 028 Triac	Heater U Fuse 040 Triac	Heater U Fuse 052 Triac	Heater U Fuse 064 Triac	Heater U Fuse 076 Triac	Heater U Fuse 088 Triac
CH05	Heater U Fuse 005 Triac	Heater U Fuse 017 Triac	Heater U Fuse 029 Triac	Heater U Fuse 041 Triac	Heater U Fuse 053 Triac	Heater U Fuse 065 Triac	Heater U Fuse 077 Triac	Heater U Fuse 089 Triac
CH06	Heater U Fuse 006 Triac	Heater U Fuse 018 Triac	Heater U Fuse 030 Triac	Heater U Fuse 042 Triac	Heater U Fuse 054 Triac	Heater U Fuse 066 Triac	Heater U Fuse 078 Triac	Heater U Fuse 090 Triac
CH07	Heater U Fuse 007 Triac	Heater U Fuse 019 Triac	Heater U Fuse 031 Triac	Heater U Fuse 043 Triac	Heater U Fuse 055 Triac	Heater U Fuse 067 Triac	Heater U Fuse 079 Triac	Heater U Fuse 091 Triac
CH08	Heater U Fuse 008 Triac	Heater U Fuse 020 Triac	Heater U Fuse 032 Triac	Heater U Fuse 044 Triac	Heater U Fuse 056 Triac	Heater U Fuse 068 Triac	Heater U Fuse 080 Triac	Heater U Fuse 092 Triac
CH09	Heater U Fuse 009 Triac	Heater U Fuse 021 Triac	Heater U Fuse 033 Triac	Heater U Fuse 045 Triac	Heater U Fuse 057 Triac	Heater U Fuse 069 Triac	Heater U Fuse 081 Triac	Heater U Fuse 093 Triac
CH10	Heater U Fuse 010 Triac	Heater U Fuse 022 Triac	Heater U Fuse 034 Triac	Heater U Fuse 046 Triac	Heater U Fuse 058 Triac	Heater U Fuse 070 Triac	Heater U Fuse 082 Triac	Heater U Fuse 094 Triac
CH11	Heater U Fuse 011 Triac	Heater U Fuse 023 Triac	Heater U Fuse 035 Triac	Heater U Fuse 047 Triac	Heater U Fuse 059 Triac	Heater U Fuse 071 Triac	Heater U Fuse 083 Triac	Heater U Fuse 095 Triac
CH12	Heater U Fuse 012 Triac	Heater U Fuse 024 Triac	Heater U Fuse 036 Triac	Heater U Fuse 048 Triac	Heater U Fuse 060 Triac	Heater U Fuse 072 Triac	Heater U Fuse 084 Triac	Heater U Fuse 096 Triac

Diagnostics Cards 9 to 16

Diagnostics Card 17

Back to Main

Output Card Diagnostics



AB/NT50/HC500-IPmaster
for ALLEN BRADLEY CompactLogix and
ControlLogix with
gateway NT_50-DP-EN/IP(900.012)



AB1769/PS69-DPM/HC500-2DPmaster
PROFIBUS-DP master
for Allen-Bradley ControlLogix PACs
via ProSoft MVI56-PDPMV1 PROFIBUS
DP-V1 Master Communication Module



AB1769/PS69-DPM/HC500-2DPmaster
PROFIBUS-DP master
for Allen-Bradley CompactLogix PACs
via PROFIBUS
DP-V1 PS69 Master Communication
Module



S7/HC500-PNmaster
for SIEMENS S7-300,
S7-400 and STEP 7 V5
with proxy NL_51N-DPL(900.011)



S7/HC500-3DPmaster
for SIEMENS S7-300, S7-400 and STEP 7 V5



QJ71PB92V/HC500-2DPmaster
for MITSUBISHI SystemQ with
QJ71PB92V PROFIBUS-DP Master
Module



CJ2M/CJ1W-PRM21/HC500-2DPmaster
PROFIBUS-DP master
for OMRON JJ2 PLCs
via CJ1W-PRM21 Profibus-DP Master
Unit







RX3i/IC695PBM300/HC500-2DPmaster
for GE FANUC RX3i with PROFIBUS
Master Module IC695PBM300









HC500-DIAG and HC500-DIAG 2
WINDOWS software for HC500
- diagnostics
- master functionality for testing
- data simulation for programmers

Hetronik Control Card Detail

	HC500-230	HC500-230	HC500-480	HC500-480
				
Part Numbers	HC510-OC-230-16-I *HC510-OC-230-16-SL	HC510-OC-230-10-I *HC510-OC-230-10-SL	HC510-OC-480-12-I *HC510-OC-480-12-SL	HC510-OC-480-10-V2 *HC510-OC-480-10-SL
Line Voltage	230 WYE/DELTA, 50/60Hz	230 WYE/DELTA, 50/60Hz	480 WYE/DELTA, 50/60Hz	480 WYE/DELTA, 50/60Hz
Dimensions	4 Rack - 6"x15"x9" and 8 Rack – 11.5"x15"x9"			
Channel Qty.	16	10	12/11**	10/8**
Maximum Channel Amp	6.52 A (1500 W / 230 V) *4.35 A (1000 W / 230 V)	10.87 A (2500 W / 230 V) *8.70 A (2000 W / 230 V)	4.18 A (2000 W / 480 V) * 2.50 A (1200 W / 480 V) ** 4.69 A (2250 W / 480 V)	10.0 A (4800 W / 480 V) * 7.50 A (3600 W / 480 V) **12.5 A (6000 W / 480 V)
normalSTART softSTART or softSTARTlight	normalSTART *softSTART	normalSTART *softSTARTlight		
Control Type	Sinuswave Fired			
PID Autotune T/C Feedback	Yes, with optional HC500-TU, 128 channel maximum PID loops per network			
Channel Amp Measurement	No	Yes, to detect a broken heater wired in parallel with other heaters at the same output. (only for products with -I = amp measurement.)		
Voltage Spike Protection	Electronic			
Voltage Compensation	Yes			
Short Circuit Protection of Power Switches	Super fast melt fuses in holders through front panel	Super fast melt fuses in holders on circuit board		
Maximum Number of Zones	1024 per network	640 per network	768 per network	640 per network
Alarm Temp / Shutdown Temp	114°F /131°F	114°F /131°F	114°F /131°F	114°F /131°F

Heater Controller Details



HC500-OM-230	HC500-OM-480	HC500-OU	HC500-TU	HC300-480
				
HC500-OM-230-3-I *HC500-OM-230-3-SL	HC500-OM-480-3-I *HC500-OM-480-3-SL	HC500-OU-24-12 HC500-OUI-100-1	HC500-TU-8-TC HC500-TU-8-TC-PID	HC200-230
230 WYE/DELTA, 50/60Hz	480 WYE/DELTA, 50/60Hz	60-110, 110-230, or 230-480 Vac	24 VDC	
5.71" x 4.33"	5.71" x 4.33"	4.25" x 0.9 x 4.01"	4.25" x 0.9 x 4.01"	
3	3	12	128	
17.39 A (4000 W / 230 V) *10 A (2300 W / 230 V)	16.7 A (8000 W / 480 V) *10 A (4800 W / 480 V)	Control of SSR Up To 90 A per channel	Type J & K	
normalSTART *softSTARTlight		normalSTART	N/A	
Sinuswave Fired			Read Only or PID	
Yes, with optional HC500-TU, 128 channel maximum PID loops per network			Auto Tune	
Yes, to detect a broken heater wired in parallel with other heaters at the same output. (only for products with -I = amp measurement.)		Yes, with use of HC500-OUI	N/A	
Electronic				
Yes			N/A	
Super fast melt fuses in holders on circuit board		No	N/A	
960 per network		384 per network	128 per network	
114°F /131°F	114°F /131°F			



Infrared Comfort Heaters

COMFORTIR - simple, safe, and affordable comfort heat.

The output of ComfortIR long wave infrared heaters have similar wavelengths to the sun with none of the detrimental ultraviolet (UV) effects. All of the best features of infrared heat have been captured in a compact, low profile, easy-to-install system. Designed to be positioned overhead, ComfortIR provides warmth and comfort in a simple, quiet, and cost-effective solution.

Features:

- Silent
- Low Maintenance
- Efficient
- Odorless
- Flameless
- Indoor/Outdoor

Endless Uses:

- Animal Warming
- Auto Repair/Body Shops
- Barns
- Boating
- Cafés and Coffee Shops
- Camping
- Construction Sites
- Dog Kennels
- Factories
- Game Rooms
- Garages
- Gazebos
- Open Air Restaurants
- Outdoor Smoking Areas
- Patios
- Restaurants
- RV's
- Snow Removal
- Stables
- Sun Rooms
- Temporary Buildings
- Umbrellas
- Warehouses
- And MANY MORE

Styles:



CIR - SS Black



CIR - SS White



CIR-360

Dare to Compare

Replacing inefficient traditional propane and natural gas heaters with ComfortIR infrared comfort heaters, significantly reduces heating bills and labor for refilling, while maintaining a comfortable environment for you and your guests. See for yourself how they compare...

* Based on hourly usage for CIR2, 1300 115V single phase heater. The national average is \$0.0986 KW/hr, therefore:
 $1300W / (1000W/kW) * \$0.0986/hr = \$0.128/hr$ usage or 12.8 cents per hour to run at 100%.

** Natural Gas - Usage requires approximately .0320 MCF/hr. Average is \$ 9.85 per MCF.
 $.0320 \text{ MCF/hr} * \$ 9.85 \text{ MCF} = 32.0 \text{ cents/hr.}$

***Based on national average of \$16.77/refill of LPG tank - Using roughly 1.32 lbs. per hour equals 20 lb tank gives 10 hours = \$1.10/hr.

Factors	Infrared	Natural Gas	Propane/LPG	Advantage
Energy Conversion	90%	35-40%	35-40%	ComfortIR
Affected by Wind	No	Yes	Yes	ComfortIR
Warm Up Time	3-5 Min.	5 min.	5 Min.	ComfortIR
Indoor Use	Yes	Yes	No	ComfortIR
Quiet Operation	Silent	No	No	ComfortIR
Cost per Hour	\$0.13*	\$0.22 and Up**	\$1.10 and Up***	ComfortIR
Cost/Year (3hr/day)	\$137	\$344	\$1,206	ComfortIR
Emissions	None	Yes	Yes	ComfortIR
Residuals	None	Yes	Yes	ComfortIR
Directional Heat	Yes	No	No	ComfortIR
O ₂ Consumption	None	Yes	Yes	ComfortIR
Variable Control	Yes	Marginal	Marginal	ComfortIR
Portability	Electrical Cord	Line or Tank	LPG Tank	Even





Infrared Comfort Control



#14 4100 for 120 Volt or #14 4200 for 240 Volt Input Heat Regulator with Stainless Steel Wall Plate and Gang Box



#14-4105 for 120 volt or #14-4205 for 240 volt Dual Input Heat Regulators with Stainless Steel Face Plate and Gang Box



#14-4110 for 120 volt or #14-4210 for 240 volt Input Heat Regulator with Weatherproof Cover for In Wall Installation. Wall mount also available.



#14-4115 for 120 volt or #14-4215 for 240 volt Dual Input Heat Regulators with Weatherproof Cover for In Wall Installation. Wall mount also available.



1 Zone Analog Control

OR



2 Zone Analog Control

+



1 or 2 Zone Relay Control Panel



1 Zone Analog Control with Digital Timer

OR



2 Zone Analog Control with Digital Timer

+



1 or 2 Zone Relay Control Panel

Up to 6 Zone Control Panels Available!



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