IR-301

BLACKBODY SOURCE CONTROLLER

Resolution:	1ºC or 0.1ºC Selectable	**Alarms:**	5.0 amps at 120 VAC, 2.5 amps at 230 VAC
Control:	PID dual Zero voltage firing state power relays	**Operating Environment:**	0 to 40ºC ambient temp with relative humidity less than 95% non-condensing
Readout:	Dual display: BB Temp is shown on upper LED display; Set Point and Parameters are shown on lower LCD Display	**Power Requirement:**	105-125 Volts, 50-60 Hz., 500 Watts Max
Sample Rate:	Cavity Temp is updated 10 times per second; digitally filtered to eliminate noise	**Dimensions (HxWxL):**	5.10" x 12" x 13.4" (Rackmounted 5.25" x 19" x 14.4"
ºF/ºC	Selected at Factory. Standard is ºC	**Weight:**	9 lbs. (Rackmounted 10bs.) (Shipping Weight: 13 lbs. 17lbs.)

The IR-301 controller is a microprocessor based PID (Proportional, Integral and Derivative) system for regulating the Blackbody's Radiating Surface. We have taken a leap forward from the standard PID Controller types of past years. We do this by utilizing five independent PID parameter groups, each for a specific temperature range, internally selected based on the Setpoint. To control stability, the Standard Proportional Band with Automatic Reset and Derivative method is utilized. Unlike standard PID control, these parameters are totally dedicated to control stability only. This allows us to reduce the Proportional Band, creating a much more stable Blackbody system.

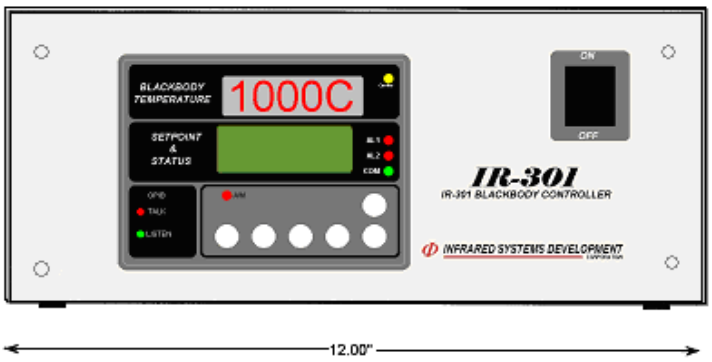
To control warm-up characteristics, we start with an independent Proportional Band, much wider than the stability Proportional Band. Then take the operational span and divide it into five smaller spans. Each of these spans is assigned a factory-selected range of PID Parameters values. Selecting a set temperature automatically loads the proper warm-up parameters into memory for that specific temperature. This process practically eliminates the need for continuous reactionary parameter changes as required by standard PID. For applications requiring one, a Blackbody Radiance Display (WATTS/CM²/STERADIAN) of actual temperature can be monitored at from the front panel LCD display BBRD.

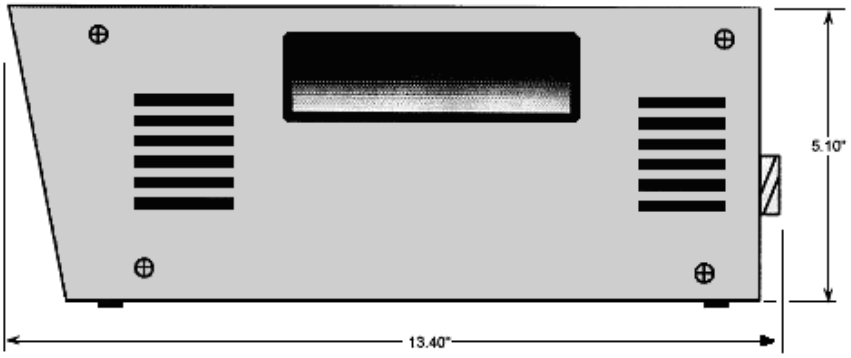
All adjustments, parameters and indications are accessible from the front panel or via one of the communication options. The front panel contains 7 LEDs for visual indication of pertinent controller activity plus a Large LED display of Blackbody Temperature, and an interactive LCD menu display for presentation and changing of Parameters. All control parameters, selections and calibration procedures are accomplished through simple MENU selections using the four front panel buttons (▲▼►◄). These MENU selections are organized into Sections. Each Section presents a specific set of related functions.

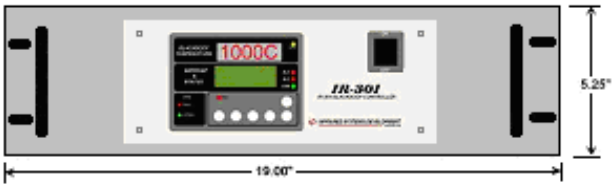
Internally the IR-301 was designed for maximum accuracy while maintaining our trademark reliability and quality. As is apparent with the use of dual redundant solid state (zero-voltage switching) power relays, RFI filters and an entire temperature sensor feedback loop; wire, cable, pins and connectors, being manufactured from special thermocouple alloys to eliminate the effects of ambient temperature change. The Thermocouple Cold Junction is mounted to a high precision RTD sensor to accurately monitor the CJC to provide compensation for ambient temperature variations.All connections are made from the rear for true rackmount capabilities. The IR-301 contains its own power supply which requires the standard 120 VAC 50-60 HZ line power. A 220 VAC option is available.

7319 SANDSCOVE CT. #4 Φ WINTER PARK, FL 32792
(TEL) 407-679-5101 Φ (FAX) 407-679-5520
SALES@INFRAREDSYSTEMS.COM HTTP://WWW.INFRAREDSYSTEMS.COM

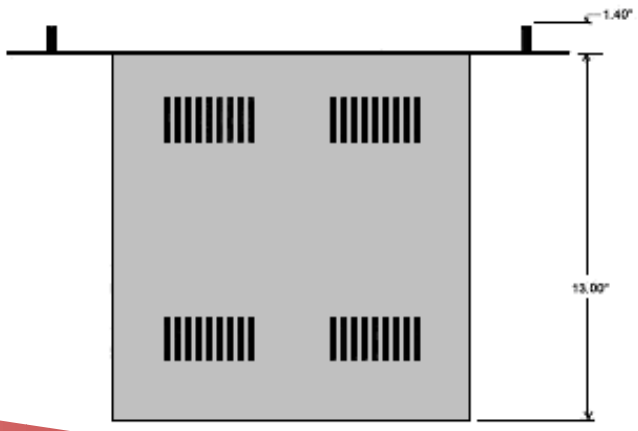
IR-301 DIMENSIONS







IR-301 WITH RACKMOUNT ACCESSORY



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