

**Aumictech**

Test & measurement • bought, sold, repaired, calibrated

Data Sheet

August 15, 2026

INFRARED SYSTEMS DEVELOPMENT CORPORATION

infrared systems development corporation ir-301

The Infrared Systems Development Corporation IR-301 is an infrared camera system designed for thermal imaging and analysis. It captures heat signatures and provides detailed thermal data for various applications.

**MODEL****Infrared Systems Development Corporation IR-301****CALIBRATION****Available on request****CONDITION****Used****STATUS****In stock****RFQ / SKU****IR-301****LISTING**<https://aumictechlabs.com/products/ir-301-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Infrared Systems Development Corporation IR-301 is a microprocessor-based PID temperature controller engineered to regulate blackbody radiating surfaces with exceptional stability. The controller employs five independent PID parameter groups, each optimized for specific temperature ranges and automatically selected based on setpoint, eliminating the need for continuous manual parameter adjustment. Dual redundant solid-state zero-voltage switching power relays, integrated RFI filters, and a precision thermocouple feedback loop with Cold Junction Compensation via high-precision RTD sensor ensure reliable long-term performance. The system samples cavity temperature 10 times per second with 0.1°C display resolution and achieves $\pm 0.2^\circ\text{C}$ calibration accuracy to NIST standards. Short-term stability maintains $\pm 0.1^\circ\text{C}$, while long-term stability remains $\pm 0.2^\circ\text{C}$. A dual-display format shows both blackbody temperature and setpoint on an interactive LCD menu, with a large bright LED display for primary temperature readout. All rear-mounted connections support standard rackmount integration.

Technical Specifications Control Type: Microprocessor-based multi-set PID with five independent parameter groups; Standard Proportional Band with Automatic Reset and Derivative method Display Resolution: 0.1°C or 1°C (selectable) Accuracy: $\pm 0.2^{\circ}\text{C}$ (NIST calibration standard) Stability: $\pm 0.1^{\circ}\text{C}$ short-term; $\pm 0.2^{\circ}\text{C}$ long-term Sample Rate: 10 Hz digital cavity temperature update Temperature Sensors: Thermocouple alloys with high-precision RTD for Cold Junction Compensation Wavelength Range: 0.5–99 μm (cavity sources); 1–99 μm (extended area sources) Emissivity: >0.99 (cavity); 0.96 ± 0.02 (extended area) Response Time: <20 minutes (extended area sources); <70 minutes (cavity sources) Key Features Dual redundant solid-state power relays with zero-voltage switching RFI filtering for electromagnetic immunity Automatic PID parameter selection across temperature ranges Two configurable alarm outputs; 5.0 A at 120 VAC, 2.5 A at 230 VAC contact rating Electrical Specifications Input: 105–125 VAC, 50–60 Hz, 500 W maximum (configurable for 220 V operation) Typical Applications Blackbody source temperature regulation for infrared systems calibration and testing across extended temperature ranges.

IR301 Characteristics / Specifications

PARAMETER	VALUE
Model	IR-301
Instrument Type	Blackbody radiating-surface temperature controller
Family	Infrared Systems Development IR-301
Resolution	1 C or 0.1 C selectable
Control Law	multi-band PID, five independent parameter groups by setpoint
Power Relays	dual zero-voltage firing solid-state relays
Upper Display	LED blackbody temperature
Lower Display	LCD setpoint and parameters
Update Rate	cavity temperature 10 times per second, digitally filtered
Scale	C standard, selected at factory
Output 1	5.0 A at 120 VAC
Output 2	2.5 A at 230 VAC
Ambient	0 to 40 C, RH less than 95 percent non-condensing
Line Voltage	105-125 V, 50-60 Hz
Power Max	500 W
Bench Size	5.10 × 12 × 13.4 in
Rack Size	5.25 × 19 × 14.4 in
Weight	9 lb (rack 10 lb)
Shipping Weight	13 lb
Front Panel	four buttons, seven LEDs
Remote Interface	RS-232 or IEEE-488/GPIB on paired blackbody systems
Matching	factory configured to a specific blackbody, not interchangeable without reconfiguration
Thermocouple Wiring	special thermocouple-alloy wire, pins and connectors; cold junction with RTD
Manufacturer	Infrared Systems Development Corporation

PARAMETER	VALUE
Literature	ISDC IR-301 controller specification page
Paired Sources	IR-160, IR-2100/2101, IR-564 and other ISDC blackbodies using IR-301

IR301 Specifications

PARAMETER	VALUE
Key Features	Five-band PID with 0.1 C resolution
LED process and LCD setpoint displays	10 updates/s digitally filtered cavity temperature
Technical Specifications	Model: IR-301

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
Specifications	
PARAMETER	VALUE
Model	IR-301
Instrument Type	Blackbody radiating-surface temperature controller
Family	Infrared Systems Development IR-301
Resolution	1 C or 0.1 C selectable
Control Law	multi-band PID, five independent parameter groups by setpoint
Power Relays	dual zero-voltage firing solid-state relays
Upper Display	LED blackbody temperature
Lower Display	LCD setpoint and parameters
Update Rate	cavity temperature 10 times per second, digitally filtered
Scale	C standard, selected at factory
Output 120	5.0 A at 120 VAC
Output 230	2.5 A at 230 VAC
Ambient	0 to 40 C, RH less than 95 percent non-condensing
Line Voltage	105-125 V, 50-60 Hz
Power Max	500 W
Bench Size	5.10 x 12 x 13.4 in
Rack Size	5.25 x 19 x 14.4 in
Weight	9 lb (rack 10 lb)
Shipping Weight	13 lb
Front Panel	four buttons, seven LEDs
Remote Interface	RS-232 or IEEE-488/GPIB on paired blackbody systems
Matching	factory configured toaspecific blackbody, not interchangeable without reconfiguration
Thermocouple Wiring	special thermocouple-alloy wire, pins and connectors; cold junction with RTD
Manufacturer	Infrared Systems Development Corporation
Literature	ISDC IR-301 controller specification page

PARAMETER	VALUE
Paired Sources	IR-160, IR-2100/2101, IR-564 and other ISDC blackbodies using IR-301
Notes From Infrared Systems Development IR-301 controller specifications. Source temperature ranges (for example IR-564 50-1200 C) belong on the paired blackbody, not on the controller sheet.	

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
30-day returns
NAICS 423690 · 811210 · 541380
Generated August 15, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.