

IMPAC IS 12-AI

Addendum to IS 12/IGA 12 Data Sheet

Digital pyrometer for non-contact temperature measurement of aluminum between 350 and 1050°C (662 and 1922°F).



The Impac® IS 12-AI is a version of the pyrometer IS 12, specially designed for the measurement of aluminum. The robust die-cast housing with protection class IP 65 is designed for the use in industrial environments. The parameters of this digital instrument can be set directly via push buttons on the rear side of the instrument. The built-in digital display indicates the corresponding parameters or the actual temperature reading in measuring mode.

PRODUCT HIGHLIGHTS

- Two wide temperature ranges between 350 and 1050°C (662 and 1922°F)
- Spectral range: narrow band in the near infrared
- Short response time < 1.5 ms
- Small spot sizes
- Analog output 0 to 20 mA or 4 to 20 mA
- Digital interface RS232 or RS485
- Integrated maximum value storage
- Built-in digital display

TYPICAL APPLICATIONS

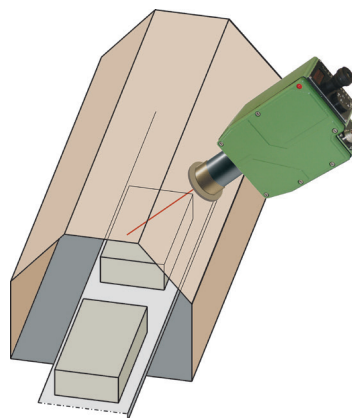
- Aluminum extrusion
- Rolling
- Billet heating and other heating processes

APPLICATION OVERVIEW

The IS 12-AI is a special development of the well proven IS 10-AI for aluminum applications in temperature ranges between 350 and 1050°C.

Conventional pyrometers—even 2-color pyrometers—are not able to measure the temperature of aluminum correctly due to the special physical properties

of aluminum. To avoid the negative influence of these properties in the non-contact temperature measurement, the IS 12-AI operates in a special spectral range. In this spectral range, solid aluminum has a very high and stable emissivity between 30 and 43%. That is why the instrument is suitable for aluminum applications such as extrusion, rolling, billet heating and other heating processes. Due to physical reasons, the IS 12-AI is sensitive to light at the beginning of the temperature range. This sensitivity decreases with increasing temperature. In applications with low temperatures (at the start of the temperature range), the measuring area has to be screened against light to avoid its influence.



TECHNICAL DATA¹

Response time T ₉₀	< 1.5 ms (with dynamical adaption at low signal levels) adjustable up to 10 s
Spectral Range	Narrow band in the near infrared
Accuracy	0.3% of measured value in °C + 1°C (ε=1, t ₉₀ =1 s, T _{Amb} =15 to 40°C, T _M ≥ 400°C (MB 9), T _M ≥ 450°C (MB 10.5))
Ambient Temperature	0 to 70°C (70 to 158°F)

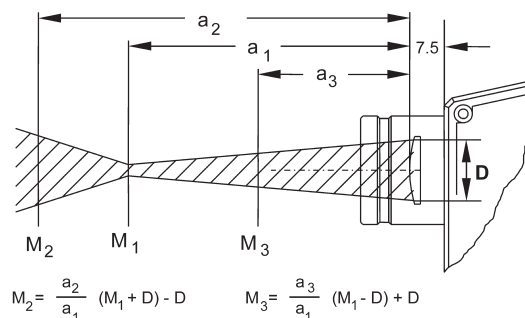
¹ Different from IS 12

OPTICS

The IS 12-AI is supplied with one fixed optics shown in the table.

Select one optics corresponding to the required measuring distance of the application.

Spot sizes differing from the stated values can be calculated with the following equations.



Fixed Optics MB 9 (350 to 900°C)		
Optics	Measuring Distance a [mm]	Spot Size M ₉₀ [mm]
1-P	112	2.5
2-P	240	4.5
3-P	660	11.5
4-P	1300	22
5-P	5600	92
Aperture D	26	

Fixed Optics MB 10.5 (400 to 1050°C)		
Optics	Measuring Distance a [mm]	Spot Size M ₉₀ [mm]
1	80	1.1
2	160	1.5
3	250	2.2
4	660	5.5
5	1300	11
6	5600	45
Aperture D	19	

REFERENCE NUMBERS

IS 12-AI		
Reference Number	Temperature Range	Type
3 840 200	350 to 900°C (MB 9)	With view finder and targeting light
3 840 210	350 to 900°C (MB 9)	With view finder, targeting light, and built-in scanner
3 840 220	400 to 1050°C (MB 10.5)	With view finder and targeting light
3 840 230	400 to 1050°C (MB 10.5)	With view finder, targeting light, and built-in scanner

Scope of Delivery

Instrument with one optics, works certificate, and PC software InfraWin.

Accessories

See IS 12 data sheet.



For international contact information,
visit advancedenergy.com.

sales.support@aei.com
+1 970 221 0108

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2019 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy®, Impac®, and AE® are U.S. trademarks of Advanced Energy Industries, Inc.

