

NON CONTACT TEMPERATURE MEASUREMENT OF LIQUID METALS IN THE FOUNDRY

Recent product development has enabled Land Infrared to offer on-line systems and portable thermometers providing accurate, easy to use, non contact temperature measurement. These instruments are designed to replace the old system of expensive, disposable dip thermocouples used to measure molten metal temperatures.

Land has combined the latest ultra-short wavelength technology with application experience based on over 50 years in the industry to develop a system that is unrivalled for accuracy, ease of use and response time.

Designed specifically for the foundry industry, the Liquid Metal Temperature Measurement System is a stand-alone system that can also be utilized for automated process control and has the flexibility to be configured to monitor and display up to four separate pour temperatures simultaneously.

The system has the ruggedness to withstand the harsh foundry environment.

The Problem

Measuring molten metal temperatures at the furnace, or pour, without disrupting the process.

The Solution

Either a portable hand held thermometer – Land Cyclops Meltmaster for spot measurement or a fixed on-line system for continuous liquid metal temperatures.

Features and Benefits

- Reduces operating costs while improving casting quality
- Non contact measurement does not interrupt casting process
- Operates at a wavelength which is specially selected to ensure maximum freedom from errors due to variable emissivity and atmospheric absorption.
- Simple alignment with adjustable focus and through-the-lens sighting
- Analog and alarm outputs provide process control and automated notification of out-of range metal temperatures
- Graphical and numerical displays to monitor metals temperatures
- Continuous monitoring of molten metal in the foundry – with System 4
- Rugged housing designed to withstand harsh foundry environment

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Infrared Temperature Measurement

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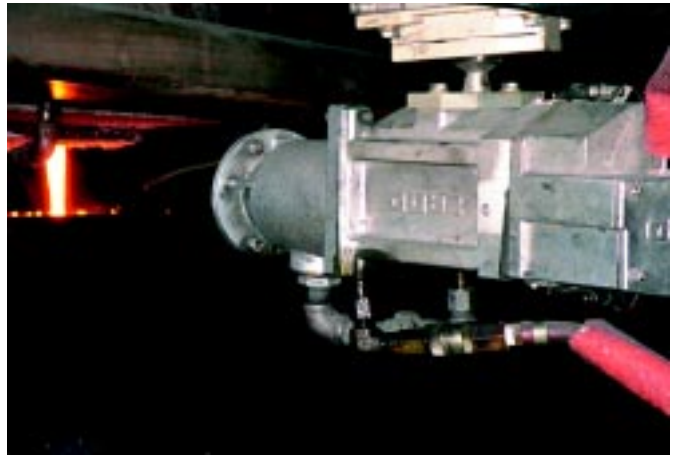
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Liquid Metal Temperature Measurement System

- Thermometer:** Land System 4 MZ radiation thermometer
- Processor:** Landmark Graphic processor providing graphical and numerical displays
- Protective Mountings:** Well proven air purge, cooling jacket and protective back cap
- Interconnect cable:** Connects thermometer to processor
- Mounting ball:** Allows for no-tools thermometer alignment
- Wall mount enclosure:** Steel housing for processor (optional extra)

Everything is included to set-up and start monitoring molten metal temperatures.



System Specifications

Thermometer:		Processor:	
Temperature range:	1200 to 2000°C/2200 to 3600°F	Display:	Cold cathode, backlit, 320 x 240 pixels
Response time:	5ms	Outputs:	0 to 20 or 4 to 20mA and 1mv/° per thermometer channel
Optics:	Adjustable focus with through-the-lens sighting, 6° sighting angle	Output update:	10ms
Field of view:	200:1	Emissivity:	0.100 to 1.000 in 0.001 steps
Focusing range:	0.5m/19.6in to infinity	Time Functions:	Peak Picker, Averager, Track and Hold
Accuracy:	±0.5%°C/°F	Alarms:	High and low, selectable
Repeatability:	Better than 2°C/4°F	Serial Communications:	Optional
Ambient temperature:	0 to 70°C/32 to 150°F specified. -10 to 80°C/14 to 176°F operating	Sealing:	IP65/NEMA 4 - with cover fitted
		Ambient Temperature:	5 to 50°C/40 to 120°F specified. 5 to 60°C/40° to 140°F operating

Land Cyclops Meltmaster portable thermometer for liquid metals

The Land Cyclops Meltmaster, a lightweight, hand-held non contact thermometer designed specifically for the foundry industry, is Land's solution for portable spot thermometry applications.

Utilizing unique short wavelength response to ensure high accuracy, the Land Cyclops Meltmaster is used with confidence without relying on operator judgement.

- Temperature range: 1000 to 1800°C/1830 to 3270°F
- Target size: 29mm at 5m/1.1in at 16.4ft (fixed focus)

- The thermometer automatically compensates for ambient temperature changes to give immediate, reliable readings.
- Fast response time of 0.8s.
- Competitively priced to provide a quick payback on investment.

