

# CASE STUDY

## AMETEK LAND DELIVERS A TEMPERATURE MEASUREMENT SOLUTION TO SUPPORT QUALITY AND COST SAVINGS AT LADA FOUNDRY, INDIA

### INTRODUCTION

AMETEK Land, the leading specialist in infrared non-contact temperature measurements for global industry, has provided Lada Foundry with its Cyclops 055L handheld portable pyrometer. This ergonomic device has helped to support metal quality during the casting process and reduce ongoing costs.



**LAND**  
AMETEK®



QUALITY CUSTOMER SOLUTIONS



## ABOUT LADA FOUNDRY

Lada Foundry is the leading SG/ductile iron foundry in India, and has been involved in manufacturing and supplying iron casting products across the country, and abroad. With a focus on delivering top-quality products, the company's Kolhapur-based foundry is equipped with state-of-the-art infrastructure facilities and in-house expertise. It generates an annual production of 10000 metric tons, with a diversified range of castings from 0.8 kg to 90 kg, capturing a large proportion of the marketplace.

## THE CHALLENGE

Working with a prestigious customer base, the company aims to deliver world-class products that meet and surpass client requirements. To ensure high-quality metal products, accurate measurements of the liquid metal during the casting process are essential.

Lada Foundry was using dip thermocouple tips in combination with a pyrometer for this application. Dip thermocouples have a long measurement time and require the operator to get close to the high-temperature process. The need to frequently replace disposable tips has a significant cost in both time and money.

The company was looking for a more cost-effective solution that improved both measurement accuracy and user safety.



## THE SOLUTION

AMETEK Land supplied its Cyclops 055L portable pyrometer to Lada Foundry for this application.

Capable of taking a non-contact measurement in under two seconds, the Cyclops 055L is ergonomically designed for single-handed use – operators simply point the Cyclops 055L at the liquid, then pull the trigger when they wish to take a measurement.

This increases safety, as the operator can be positioned five or six metres away from the molten metal.

Four simultaneous modes are available, including Continuous, Peak, Valley, and Meltmaster, to meet specific requirements, providing highly accurate measurements of liquid metal temperatures in the range of **1,000 to 2,000 °C (1,832 to 3,632 °F)**, with high repeatability.

The clear, wide-angle field of view and small, clearly defined measurement area help to ensure precision sighting. A single device can store up to 9,999 readings, and the Cyclops 055L can be used continuously throughout the pouring process, right up to the last mould.

Another benefit for Lada Foundry is the local NABL calibration and service support for the Cyclops 055L available in India.



## CYCLOPS 055L

A highly accurate hand-held non-contact thermometer providing easy, point-and-measure temperature readings.

### BENEFITS

- Made in India with ISO/IEC 17025 certification
- Significantly reduces the use and cost of disposable “dip” type thermocouples
- Standard Bluetooth and USB connectivity
- Rugged instrument casing for harsh environments

### INDUSTRIES

- Forging
- Aluminium
- Steel

### APPLICATIONS

- Melting furnace
- Liquid metal transfer to the ladles
- Ladle treatment location
- Pouring section
- Tundish
- Blast furnace runners
- Liquid metal stream at SMLP
- Continuous caster CCM open stream
- Tundish CCM
- Anode preparation castings
- Cathode metal casting locations

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## THE RESULT

After implementing the Cyclops 055L into its process, Lada Foundry was able to stop using thermocouple tips entirely. This created an annual cost saving of approximately INR 7,00,000.

The Cyclops 055L has no consumables, eliminates the time spent replacing tips, and so offers a rapid return on investment. It also met Lada Foundry's desire to find a more accurate and safer liquid metal temperature measurement solution.

**Lada Foundry Plant Head, Mr. Yuvraj Patil, said:** *“The Cyclops 055L provides us with a safe, accurate, and fast temperature measurement, and is helping us to improve the production at our facility. Because the Cyclops 055L is portable, we can measure each mould pouring temperature, and at the furnace, which helps to avoid super-heating.”*



## ADDITIONAL FOUNDRY SOLUTIONS

The **SPOT MM Application Pyrometer** is an advanced, non-contact infrared pyrometer specifically designed to provide a single-sensor solution for liquid metal temperature measurements in foundry tapping applications.

The integrated Meltmaster application mode and optimized signal processing functions allow accurate measurements of the tapping stream temperatures with each tapping stream or part produced, despite the continuous surface and condition changes common to those applications.

Multiple digital and analogue interfaces allow the **SPOT MM** to be easily integrated into new and existing process control systems. The integrated visual camera enables the operator to monitor and control the tapping process in real time, while the embedded webserver of the **SPOT MM** enables

full remote access to the pyrometer without the installation of any additional software.

The advanced **NIR-2K** thermal imager has a measurement range of 1000 - 1800 °C, and can be installed at a safe distance from the process to monitor liquid metal during the pouring and open caster stages.

Fitted with protective enclosures and focused to cover the required measurement area, this high-resolution thermal imager, fitted with the optimum field of view lens option, can cover the necessary strands of the liquid stream.

With the results processed by the **IMAGEPro V2.0** software, the system is able to provide consistent temperature measurements in a single view, achieving more accurate results with greater safety.

## SPOT+ MM

An advanced non-contact infrared spot pyrometer specifically designed for liquid metal temperature measurements in foundry and tapping applications.

### BENEFITS

- Autonomous operation
- Fast tapping stream temperature measurements
- Plug 'n' play operation
- Automatic alignment
- Integrated video camera

### TEMPERATURE RANGE

600 - 1000 °C / 1112 - 1832 °F

### APPLICATIONS

- Foundries
- Liquid metal tapping stream

### INDUSTRIES

- Steel



## NIR-2K

A range of high-precision thermal imagers producing high-temperature and high resolution measurements in a wide range of applications.

### BENEFITS

- High-resolution radiometric thermal imager
- Robust housings for harsh conditions
- Choice of models and options
- Two-year warranty



### TEMPERATURE RANGE

600 - 1800 °C / 1112 - 3272 °F

### APPLICATIONS

- Heating
- Hot rolling
- Heat treatment
- Continuous casting
- Welding
- Tapping/pouring (liquid metals)
- Coating
- Melting
- Forming/forging
- Annealing

### INDUSTRIES

- Glass
- Hydrocarbon processing
- Speciality metals
- Steel

# AMETEK LAND THERMAL SOLUTIONS



**PORTABLE NON-CONTACT THERMOMETERS**



**CYCLOPS 055L**



**FIXED SPOT NON-CONTACT THERMOMETERS**



**SPOT MM**



**FIXED THERMAL IMAGERS**



**NIR-2K**



AMETEK Land's AMECare Performance Services ensure peak performance and maximum return on investment over the life of your equipment.

We will deliver this by:

- Proactively maintaining your equipment to maximise availability.
- Optimising solutions to meet your unique applications.
- Enhancing user skills by providing access to product and application experts.

AMETEK Land's global service network provides unparalleled after-sales services to ensure you get the best performance and value from your AMETEK Land products.

Our dedicated service centre teams and on-site engineers are trained to deliver the highest standard of commissioning, maintenance and after-sales support.

## NABL Certification

Our India certification laboratories based in Bangalore and Jamshedpur are certified to the international standard ISO / IEC 17025:2005 (General requirements for the competence of testing and calibration laboratories) by the National Accreditation Board for Testing and Calibration Laboratories (NABL).

They offer a comprehensive service for the certification of infrared thermometers, thermal imagers, and scanners. Our certification service verifies the performance accuracy of your instrument at a given point in time by quantifying its errors.

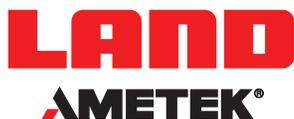
In addition, since the Cyclops 055L is made in India and calibrated in our own NABL-accredited laboratories, customers benefit from an easier transaction, shorter delivery times, local technical support, and access to annual calibration services.

SEE OUR RELATED LITERATURE FOR THE CYCLOPS, SPOT MM AND NIR-2K



**DISCOVER HOW OUR BROAD RANGE OF NON-CONTACT TEMPERATURE MEASUREMENT AND COMBUSTION & EMISSIONS PRODUCTS OFFER A SOLUTION FOR YOUR PROCESS**

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