

# CASE STUDY

## AMETEK LAND HELPS HIGH-QUALITY METAL COMPONENT MANUFACTURER, AMAR UDYOG, TO SIGNIFICANTLY REDUCE COSTS

### INTRODUCTION

AMETEK Land, the leading specialist in infrared non-contact temperature measurements for global industry, has supplied its Cyclops 055L handheld portable pyrometers to high-quality metal products manufacturer Amar Udyog. These instruments provide liquid metal measurements during the casting process to support metal quality, replacing the role of dip thermocouples, which are expensive to maintain.



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## **ABOUT AMAR UDYOG**

One of the leading manufacturers of grey iron, ductile iron, and SiMO machined castings, Amar Udyog uses cutting-edge technology to manufacture components for a range of diverse industries, including agricultural machinery and the demanding automotive sector. Based at Faridabad, Haryana, in India, Amar Udyog has become a highly reputed OEM supplier for many popular brands, with a sophisticated manufacturing unit and production capacity of 18,000 tons per annum.

## **THE CHALLENGE**

Quality plays a pivotal role for Amar Udyog, with components created to meet all customer requirements and specifications. This quality depends on reliable and accurate temperature measurements at the foundry stage.

Amar Udyog had been using dip thermocouples for these measurements. These have a long measurement time – typically 13-14 seconds – and require an operator to get quite close to the process. They also use disposable tips, which must be replaced frequently, costing time and money.

Their use of thermocouples meant that Amar Udyog experienced high costs for maintenance, calibration, and monthly consumables, including a typical monthly spend of INR 95,000 on replacement thermocouple tips. The company wanted a solution that would deliver cost savings as well as better measurement accuracy and user safety.





## THE SOLUTION

AMETEK Land supplied two Cyclops 055L 2F portable pyrometers to Amar Udyog for this application. This device takes a non-contact measurement in under two seconds and is ergonomically designed for single-handed use.

The Cyclops 055L 2F also increases safety, as the operator can be positioned five or six metres away from the molten metal. They simply point the Cyclops 055L 2F at the liquid, then pull the trigger when they wish to take a measurement.

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.

Precision sighting is ensured by the clear, wide-angle field of view and small, clearly defined measurement area. A single device can store up to 9,999 readings, and the Cyclops 055L 2F can be used continuously throughout the pouring process, right up to the last mould.

Additionally, NABL calibration and service support for the Cyclops 055L 2F is available locally in India, providing Amar Udyog with rapid assistance if required.

### CYCLOPS 055L 2F



Portable Handheld Pyrometer  
1000 to 2000 °C / 1832 to 3632 °F

### MODEL RPI 10000 BT LED



Cyclops L Pyrometer integration for  
real-time temperature display

<b>CYCLOPS 055L</b>	
<b>SPECIFICATION</b>	
Measurement range	1000 to 2000 °C / 1832 to 3632 °F
Display	4-digit LCD in viewfinder; external backlit LCD display
Measuring modes	Continuous, Peak, Valley and advanced Meltmaster
Data logging	9999 readings and 4 routes internally; Mobile (4GB standard storage) or PC logger software (via Bluetooth® or USB connector)
Data logging modes	Classic, Burst, Latched, Route
Optical system	9° field of view; eyepiece adjustable -3.75 to +2.5 diopters
Focusing range	Fixed focus, nominally at 5 m / 197 in. from thermometer body datum
Minimum target size	Parallel 28 mm / 1.1 in target spot diameter from lens to 5 m / 197 in
Spectral response	Nominally 0.55 µm
Emissivity adjustment	0.10 to 1.20 in 0.01 step graduations
Response time	30 ms
Display update time	0.5 s
Accuracy	<0.5% (K) of reading
Measurement resolution	0.1 °C / 1 °F
Measurement field of view	Fixed Focus
Repeatability	<1 °C / 2 °F
Operating temp range	0 to 50 °C / 32 to 122 °F
Power requirement	One MN1604 / 6LR61 / PP3 Battery or USB
Output	Bluetooth® / USB Connector
Weight	0.83 kg / 1.8 lb.
Sealing	IP40
Standard accessories	Lens cap, protection window/filter, battery, wrist strap, USB cable, heat protection jacket
Optional accessories	Waterproof carry case, Long eye relief eyepiece
Free data-logger software	Available at <a href="http://www.ametek-land.com/products/software/cyclopslogger">www.ametek-land.com/products/software/cyclopslogger</a>





## THE RESULTS

Amar Udyog began using the Cyclops 055L 2F pyrometers at its foundry in 2021. Within 9-10 months, they had already seen a return on their investment.

Puneet Vinayak, Director at Amar Udyog, said: ***“Using the Cyclops 055L 2F has significantly reduced the amount we spend on thermocouple tip replacements each month. The instruments are easy to use, provide fast, accurate measurements, and increased safety for the user. We would definitely recommend AMETEK Land, both for their liquid metal measurement solution, and for the expert support they have provided.”***



## CYCLOPS 055L 2F

MADE IN INDIA



Portable Handheld Pyrometer  
1000 to 2000 °C / 1832 to 3632 °F

### AMECARE<sup>®</sup>

PERFORMANCE SERVICES

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.

SEE OUR RELATED LITERATURE FOR THE CYCLOPS 055L



#### CYCLOPS L

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FOR YOUR PROCESS**

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#### CONTACT US



[www.ametek-land.com](http://www.ametek-land.com)



[land.enquiry@ametek.com](mailto:land.enquiry@ametek.com)



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