



CASE STUDY

LAND Helps High-quality Metal Component Manufacturer, Amar Udyog, to Significantly Reduce Costs



See degrees differently.

ABOUT THE CUSTOMER

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

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 can be used continuously throughout the pouring process, right up to the last mould.

LAND also supplied its Jumbo Display unit, which connects wirelessly with the Cyclops 055L using Bluetooth to provide instant, real-time temperature measurement updates on its four-inch-high, seven-segment screen.

With a 50-metre connectivity range, the LED display unit also provides the capability to set an audible out-of-range alarm should the detected temperature be too high or low.

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 PORTABLE THERMOMETER



CYCLOPS L JUMPO DISPLAY

CYCLOPS 055L SPECIFICATIONS

	CYCLOPS 055L
Measurement Range:	1000 to 2000 °C / 1832 to 3632 °F
Spectral response:	Nominally 0.55 µm
Measuring modes:	Continuous, Peak, Valley and advanced Meltmaster
Display:	External backlit LCD display 4-digit LCD in viewfinder
Data logging:	9999 readings and 9 routes internally; Mobile or PC logger software (via Bluetooth® or USB connector)
Data logging modes:	Classic, Burst, Latched, Route
Focusing Range:	Fixed focus, nominally at 5 m / 197 in. from pyrometer body datum
Repeatability:	<1 °C / 2 °F
Optical system:	9 ° field of view; eyepiece adjustable -3.75 to +2.5 diopters
Accuracy:	0.5 %K
Minimum target size:	Parallel 28 mm / 1.1 in target spot diameter from lens to 5 m / 197 in.
Emissivity adjustment:	0.10 to 1.20 in 0.01 step graduations
Display update time:	0.5 s
Response Time:	30 ms
Measurement resolution:	0.1 °C / 1 °F
Measurement field of view:	Fixed Focus
Operating temp range:	0 to 50 °C / 32 to 122 °F
Power Req.:	One MN1604 / 6LR61 / PP3 Battery or USB
Weight:	0.83 kg / 1.8 lb.
Sealing:	IP40
Output:	Bluetooth®/USB Connector
Free Data-logger Software:	Available at https://www.ametek-land.com/products/software/cyclopslogger ; For Android devices, the Cyclops Data Logger App is available through the Google Play Store
Standard accessories:	Lens cap, protection window/filter, battery, wrist strap, USB cable, heat protection jacket
Optional accessories:	Waterproof carry case, long eye relief eyepiece
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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 LAND, both for their liquid metal measurement solution, and for the expert support they have provided.”



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Our global service centres provide after-sales services to ensure you get the best performance from your system. This includes technical support, certification, calibration, commissioning, repairs, servicing, preventative maintenance and training. Our highly trained technicians/engineers can also attend your site to cover planned maintenance schedules and repair emergency breakdowns.

PORTABLE HANDHLED PYROMETER

CYCLOPS 055L

A portable handheld pyrometer designed to provide precise temperature measurements in multiple locations and verify offline readings. The ergonomic design is durable, yet light weight, allowing for operation without fatigue.



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