

# CASE STUDY

## CYCLOPS MELTMASTER HELPS REDUCE COSTS AND INCREASE EFFICIENCY FOR SNAM ALLOYS PVT LTD, INDIA

### INTRODUCTION

Snam Alloys Pvt Ltd, a producer of value-added Ferro Alloys, chose AMETEK Land's Cyclops Meltmaster high-precision portable non-contact thermometers to optimise the quality of their molten metal, whilst making significant savings on consumables every year.

With 30 years of national and international experience, SNAM today is the undisputed manufacturer in India and Asia of Ferro Silicon, Ferro Silicon Magnesium and Ferro Silicon based inoculants. Leading automotive and engineering foundries worldwide choose trusted and reliable SNAM products to address their critical requirements.

### THE CHALLENGE

Snam Alloys required an effective solution to be able to accurately measure the temperature of liquid metal in its furnace and the ladle, with high accuracy and consistency, with the information clearly displayed on the shop floor for the production team to see.

### THE SOLUTION

AMETEK Land recommended that engineers utilise two Cyclops 055L-2F Meltmasters, installed at their Pakala Andrapradesh and Pondicheery factories in India. The main advantage of the Cyclops 055L-2F is that it provides an accurate temperature reading of molten metal, which makes a fundamental difference to the quality of the casting.

- 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



# CYCLOPS MELTMASTER HELPS REDUCE COSTS AND INCREASE EFFICIENCY FOR SNAM ALLOYS PVT, INDIA



## **CYCLOPS 055L-2F** **Meltmaster Portable** **Non-contact Pyrometer** **1000 to 2000 °C /1832 to 3632 °F**

### **HOW DOES IT WORK**

The operator is positioned five to six metres away from the molten metal and points the Cyclops Meltmaster at the liquid. The trigger is then pulled when they wish to take a measurement, which is displayed in four simultaneous modes, including Continuous, Peak, Valley and Meltmaster to meet their specific requirements. The Cyclops 055L-2F Meltmaster provides accurate measurement of liquid metal temperatures in the range 1,000 to 2,000 °C (1,832 to 3,632 °F).

Accurate sighting is ensured by the clear, wide-angle field of view and small, clearly defined measurement area.

### **RETURN ON INVESTMENT**

The AMETEK Land Cyclops Meltmaster paid for itself at Snam Alloys within 12 months. Every year, the company was spending \$4,020 on Dip type thermocouples, a cost it no longer needs to incur. The fact that the Cyclops Meltmaster uses no consumables is the main reason for the cost savings.

Also, being able to accurately measure the temperature of liquid metal, whilst delivering best and consistent mould quality, is essential.

### **THE ADVANTAGES**

There are many other benefits of the Cyclops 055L-2F Meltmaster, in addition to return on investment. The instrument has a positive impact on health and safety because of its non-contact nature, making it much safer from an operational point of view. It is also very user-friendly and provides consistent and accurate readings.

The Cyclops 055L-2F Meltmaster offers high accuracy measurement of temperature, even while



pouring, right up to the last mould. The instrument is renowned for its ability to measure the real liquid metal temperature, regardless of high-temperature sparks, low-temperature water vapour, dust and smoke that can cause errors in temperature measurement.

The Cyclops Meltmaster features four trigger operating modes for data logging, which are available from logging a measurement for each trigger release to precisely execute pre-configured routes for consistent, long term readings. This innovative pyrometer can store up to 9,999 number readings.

Emissivity compensation is provided via the icon-based menu system. The operating waveband has been carefully chosen to minimise errors due to uncertainty in emissivity and the effects of atmospheric vapour components, such as steam or hot sparks. Its rugged instrument casing is designed to withstand harsh environments for extended periods. It also features a lens protector, which maintains the optics in good condition. The equipment is designed for single-handed operation, with contact-free measurement for excellent ergonomics and better safety in hazardous environments.

## CONCLUSION

Snam Alloys has been able to take advantage of the latest version of the Cyclops 055L-2F Meltmaster. This offers greater convenience when accessing data. It also offers USB connectivity to download the data to a PC or mobile device. Consistency of measurement is assured as the Cyclops Meltmaster offers excellent repeatability.

AMETEK Land offers a NABL Calibration and technical service available locally in India, with facilities in both Bangalore and Jamshedpur. Each Cyclops Meltmaster made in India is calibrated to national standards, which gives the customer a guarantee of measurement accuracy.

Mr Karunakaran. J, AGM ELECTRICAL at Snam Alloys, explains: "We are really pleased with how the AMETEK



Land solution is working and how the Cyclops Meltmaster has provided a more effective method of temperature measurement. Our production team have welcomed the consistency, reliability and accuracy that the equipment provides and from a business point of view, there have been major savings already."

Prasath Venkatasamy, Regional Manager - Business Development & Services for Middle East and India said: "In the past, Snam Alloys, used thermocouple tips, which are consumable and therefore an ongoing expense that builds up over the year. The company also had to check the calibration of the Dip thermocouple instrument every three months and minor issues that needed to be rectified required spare parts. This was expensive and time-consuming and meant that the accuracy of the process was not always consistent. With the Cyclops Meltmaster, the equipment is extremely easy to use and reliable and the Bluetooth display means that the readings are clear for the production staff to interpret. It is great to see that even though the equipment was only installed just over a year ago, it has already paid for itself."

Venkatasamy continues "For any foundry in India, the Cyclops 055L-2F can provide major cost savings by reducing thermocouple tips, highly accurate and fast temperature measurements, reduction in quality defects, energy savings with immediate furnace control and operator safety improvements, plus its performance is proven throughout India with more than 300+ users in the last 5 years."





## SPECIFICATIONS - CYCLOPS 055L-2F

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>



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 maximize availability.
- Optimizing 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.

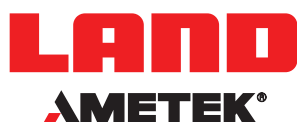
SEE OUR RELATED LITERATURE FOR THE CYCLOPS L FAMILY:



CYCLOPS L  
FAMILY OF  
PORTABLE  
PYROMETERS

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

[WWW.AMETEK-LAND.COM](http://WWW.AMETEK-LAND.COM)



### CONTACT US



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



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

