Laser Contouring System (LCS)

Mobile Contouring
Fast, Accurate, Reliable Refractory Profiling
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In 2014 Process Metrix was purchased by Vesuvius and is now a wholly-owned subsidiary of Vesuvius. This partnership leverages the worldwide presence of Vesuvius with the technical capabilities of Process Metrix to bring world-class measurement solutions to the steel industry.

The mobile Laser Contouring System (LCS) by Process Metrix rapidly measures lining thickness in the BOF, EAF, AOD, Q-BOP, or ladle environment. The LCS combines high-speed, laser scanning technology with a robust mechanical platform and easy-to-use software. Using Process Metrix new 300 kHz Anteris* laser scanner, millions of contour points comprise each measurement, providing incredibly detailed surface and feature resolution in less than six minutes.

The Mobile Platform

Two principle objectives are emphasized in our mobile platform:

• SIMPLICITY
• SPEED

Fast measurement times are achieved with Process Metrix Anteris laser scanner coupled with our industry-leading, laser-based technology. This system automatically measures system position eight times per second and reports position information directly to the on-board computer. A WiFi transmitter reports position information directly to a receiver located in the mobile computer. The on-board computer communicates position information directly to the on-board computer. A WiFi transmitter reports position information directly to a receiver located in the mobile computer.

LCS’ innovative completion grid. Vessel cone outlined in blue, barrel in black, bottom in gray. Darker shading indicates more data in that sector.

Feature-Rich System

From our purpose built Anteris laser scanner to our intuitive software, the LCS Mobile System includes features that make the system safe, reliable, and user friendly.

Developed by Process Metrix specifically for this application, the Anteris laser scanner has a 3.6mm laser beam diameter that provides detailed measurements of the refractory surface. Purpose-built software automates data acquisition, making the system easy to use. Turn it on, start the measurement, and enter a heat number. That’s it! Simple!

A WiFi-enabled tablet PC configuration is available that leaves the unit in the heat load while you control it from a safe, remote location. Our innovative completion grid (depicted on previous page) illustrates the sections of the vessel that have and have not been measured. The vessel profile is displayed automatically within five seconds after acquisition. Bath height and bath load are instantly available and automatically applied to every measurement. A plot of bath height as a function of charge weight is available as is a complete suite of integrated wear rate analysis tools. Automatic data transfer to your refractory gunning robot is also supported. Our report generator automatically prints all of the views to hardcopy, along with a complete suite of integrated wear rate analysis tools. Automatic data transfer to your refractory gunning robot is also supported. Our report generator automatically prints all of the views to hardcopy, pdf or jpg formats.

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Uncompromising Support

Process Metrix provides a preventive maintenance plan designed to keep your system operating at peak performance. Should a failure occur, a Process Metrix certified technician can normally be reached around the clock through our dedicated support line. If on-site support is required, a Process Metrix certified technician will be on site within 48 hours. Remote support via internet through a cell phone modem (included in our standard service contract) or VPN connection affords fast, seamless parameter changes, data review, and software upgrade from any remote location.

Mobile LCS System Specification

• Laser: Anteris, Accuracy: 6 mm (average)
• Measurement speed: 120 kHz (TDS-300)
• Measurement time: 4 min, 4-5 scans
• Battery life: 3 hours
• Field-of-View: +65, -45° vertical, 360° horizontal
• Optional integrated two-color pyrometer for surface temperature measurement
• Scanner Safety Class: 1
• Measurement range: 2-25m
• Convector inclinometer accuracy: 0.1°
• Instrument inclinometer accuracy: 0.05°.
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