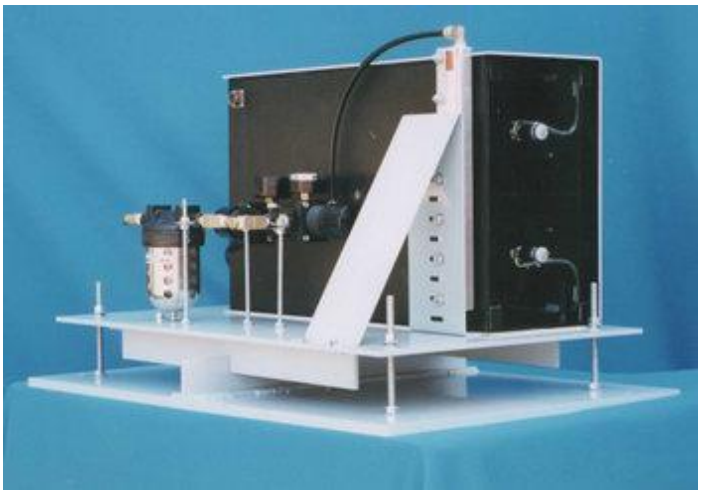
Optical Scientific, Inc.

OPTICAL ANEMOMETER (LOA-105)

The DSP-Based Airflow Instrument Specifically Designed for Aluminum Smelter Potroom Applications



Facing the ever-increasing environmental requirements, aluminum producers have been searching for new and improved ways to measure HF flow. Optical Scientific, Inc. (formerly Scientific Technology, Inc.), a US manufacturer of optical environmental and atmospheric instruments, has devised an innovative and effective solution for secondary emissions airflow measurements.

OSi's Optical Anemometer for Aluminum Plants (PN# LOA-105) is specifically designed for the tough pot room environment while providing better performance. The sensor uses proven optical technology to measure the airflow velocity through roof vents. The LOA-105 consists of a LED-powered, eye-safe transmitter, a double diode receiver unit, and an electronics enclosure. The transmitter and receiver are placed at either end of the pot room and simply need to "look" through the HF flow to measure the airflow. Its maximum path length of 1 km allows the LOA to handle the biggest of pot rooms with ease. The instrument is pot room ready with features such as HF resistant windows and air knives to keep the windows clear of dust. The LOA also has automatic gain control and error status codes to inform the user of trouble.

The optical technology of the LOA has several advantages: 1) Spatially Averaged Measurement – The LOA takes the average velocity rate over the entire optical path. Due to flow variations, this result provides a more representative measurement of the flow characteristics in a pot room unlike point-source sensors. 2) Predictable Performance over Time – Designed for long-term use in a pot room, all critical components of the LOA are enclosed in air-purged housings and HF resistant windows are used to transmit the IR light into the pot room environment. 3) Low Maintenance – Preventative maintenance is as simple as checking optical alignment and performing a calibration check using the TST-104. Since it is not directly exposed to the effluent, the LOA has better durability over instruments that are directly exposed to HF flow.

The LOA-105 has received the seal of approval from the US government with EPA Method 14 Equivalency Approval (the rule for measuring airflow velocity in aluminium roof vents). The instrument has seen great success in the US capturing nearly 70% of the market. Major players in the industry such as ALOCA, Reynolds and Kaiser use LOA as well as ALCAN in Canada, Comalco in Australia, and ALCOA Europe outside the US.

For more details on the LOA, contact Optical Scientific (an ISO-9001 certified company), located in Gaithersburg, MD, USA. Ph 301-963-3630 Fax 301-948-4674 email sales@opticalscientific.com.

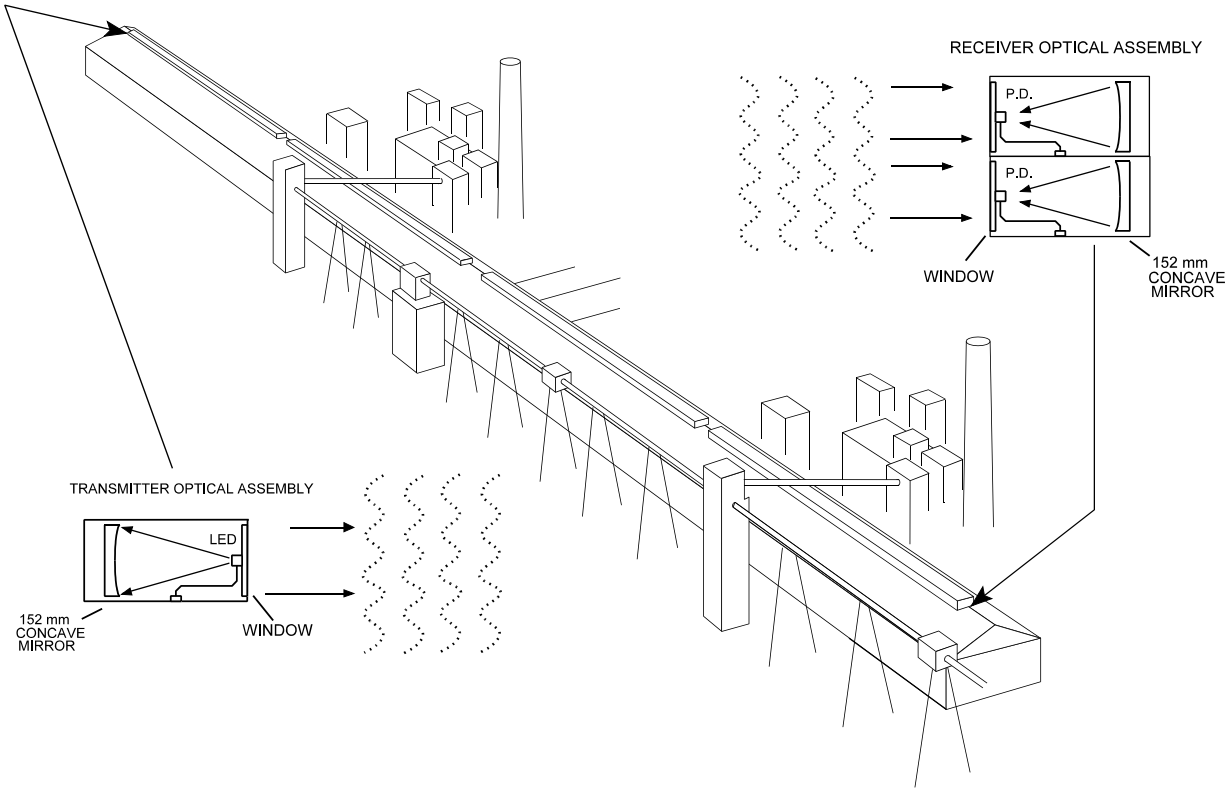


Figure 1.1-1 LOA Installed at Typical Potroom

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