

Advanced Application Pyrometers and Thermal Imaging Solutions for non-contact Temperature Measurement in the Aluminium Industry

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Abstract

Based on a long company history of more than 75 years and a broad experience and deep expertise through many years of working in the aluminium industry, AMETEK Land offers leading products and solutions for accurate and reliable temperature measurements across a wide range of aluminium applications.

AMETEK Land pioneered thermometers for aluminium application in the early 1990s. In the late 1990s, a second generation of Land application pyrometers was introduced, and the technology has been continuously developed to become today's leading measurement and application solutions specifically designed for use in the aluminium industry. The latest developments of the smart application pyrometer family and thermal imaging solutions enhance and expand the previous capabilities and are ready for Industry 4.0 integration and operation.

This presentation will introduce the underlying measurement technologies and discuss the capabilities and limitations of these technologies in aluminium applications. It will demonstrate the use of these technologies in proven application solutions ranging from smelter applications and molten aluminium to extrusion processes, rolling and forging. The use cases also include induction heating and other process steps as examples of the application of accurate and reliable temperature measurement solutions that are used and required in the aluminium industry.

Finally, an outlook is given on introducing new and future orientated projects, such as the combination of IR temperature measurements and artificial intelligence (AI) for aluminium melting furnaces and more.