



CERTIFICATE NO. FSCN-2021-005-A

Functional Safety Assessment Certificate

Product:

Diode Laser Gas Analyzer

Product model: LGA-4000Z

Manufacturer :

Teledyne Analytical Instruments

Address: 16830 Chestnut Street, City of Industry, CA 91748 USA

Safety function:

LGA-4000Z is a laser gas analyzer. The installation, configuration and commissioning are correctly completed in accordance with safety manual. LGA-4000Z can detect the concentration of a specific gas by adjusting the laser signal and pass the concentration signal to next device (such as the controller) after calculation and conversion. LGA-4000Z stops concentration measurement and directly outputs an alarm signal when critical failures are diagnosed by itself, achieving the safe state.

Having been assessed as per the requirements of following standards:

IEC61508-1:2010

IEC61508-2:2010

IEC61508-3:2010

In conformity with following integrity protection capabilities:

Systematic Capability: **SC2**

Hardware safety integrity: **Type B, Can be used in applications up to SIL2 (HFT=0)**

Application restriction:

When used in Safety Instrumented Function(SIF), it shall be installed and operated according to the requirements of the *LGA-4000Z Safety Manual*. It must be checked and ensured that LGA-4000Z meets the requirements of architectural constraints and quantified random failures in SIF. Refer to the relevant parameters in the *LGA-4000Z Safety Manual* for verification.

The following document is a part of this certificate:

LGA-4000Z Diode Laser Gas Analyzer Functional Safety Assessment Report V1.0



Safety and Security Center of Instrumentation Technology and Economy Institute



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Expiry Date: 2026-08-19