

ProcessGUARD

Laser integrated process monitoring for cutting, welding, and additive manufacturing



ProcessGUARD
Laser-Integrated Process Monitoring



ProcessGUARD integrates the photodiode-based plasmo process**observer** (psO) into the nLIGHT lasers. The process light is captured from the feeding fiber and transferred to psO 6.0 sensors (VIS Sensor 400-1100nm / NIR sensor 750-1800nm / 250kHz sampling rate). The photodiode sensors convert the process light to electrical signals that are evaluated in real time using mathematical algorithms.

Features

Welding

- Power / Focus Shift
- Contamination
- Misalignment
- Spatter
- Holes
- Pores
- Insufficient Penetration
- Gap
- Lack of Fusion
- Seam Undercut
- False Friend
- Thermal Effects, Shield Gas Distribution

Cutting

- Pierce Detection
- Loss of Cut
- Power / Focus Shift
- Process Drift Detection
- New Recipe Development

Additive Manufacturing

- Power / Focus Shift
- Deviating or Irregular Layer Thickness (PBF)
- Seam Thickness and Distance (DED)
- Process Drift Detection

nLIGHT

nLIGHT ProcessGUARD Specifications

Model	processobserver 6.0 (VIS/NIR)
Spectrum (nm)	VIS = 400 – 1100nm / NIR = 750 – 1800nm
Sampling rate	up to 250kHz
Digital I/O (24 V)	2 I/O per sensor
System interfaces	Digital I/O, DeviceNet, Ethernet IP, Profibus, Profinet, EtherCAT, etc.
Connection – Visualization – Analysis	database connection, rework visualization, statistical data analysis, Industry 4.0 ready

nLIGHT continually improves its products to provide customers outstanding quality and reliability. The information contained herein is subject to change without notice. nLIGHT, Inc. shall not be liable for technical or editorial errors or omissions contained herein. Warranties are set forth in express warranty statements accompanying products. Nothing herein should be construed as constituting an additional warranty. For details, please contact your nLIGHT sales representative.

sales@nlight.net | www.nlight.net

© Copyright 2023 nLIGHT, Inc.

