InGaAs-APD module

Concept:
The Licel InGaAs APD module is an integrated detector solution for eye-safe lidar systems. The detector head comprises a thermoelectrically cooled detector and preamplifier in a XYZ-translation stage.

Features:
- 0.5 mm detector size
- detector temperature -15°C
- temperature stability 0.2°C
- signal bandwidth 10 MHz
- integrated alignment optics and mechanics
- integrated preamplifier
- HV supply, AC/DC supply

Detector for eye-safe lidars @ 1100 nm-1700nm

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Specifications

Detector:
detector size: 500 µm square
responsivity @1550nm: 10 A/W

Preamplifier for analog detection:
bandwidth: DC-10 MHz
gain: 11mV/µA into 50 Ω
NEP (DC-10 MHz) 0.57pW/√Hz
output polarity: negative
output signal: 0...-1V (max), 0...-500mV (typ.) into 50 Ω

HV supply:
voltage range: 0...+100V
max. current: 0.6 mA
voltage ripple: <0.005%

Mechanics:
The compact APD/preamp/TEC controller unit is mounted in
a XYZ translation stage for easy integration and alignment in
detection systems.
XY axis travel: 6 mm
Z-axis travel: 6 mm
precision: 4µm

Integrated 3TE cooler and temp. controller:
Detector temperature: -15°C
Temperature stability: <0.5 K

Power supply:
input: 100V,110V or 230V, 50/60 Hz
output: +5V, -5V, +15 V

Environmental conditions:
Operating temperature: 0°C to 30°C (non condens.)
Storage temperature: -40°C to 70°C