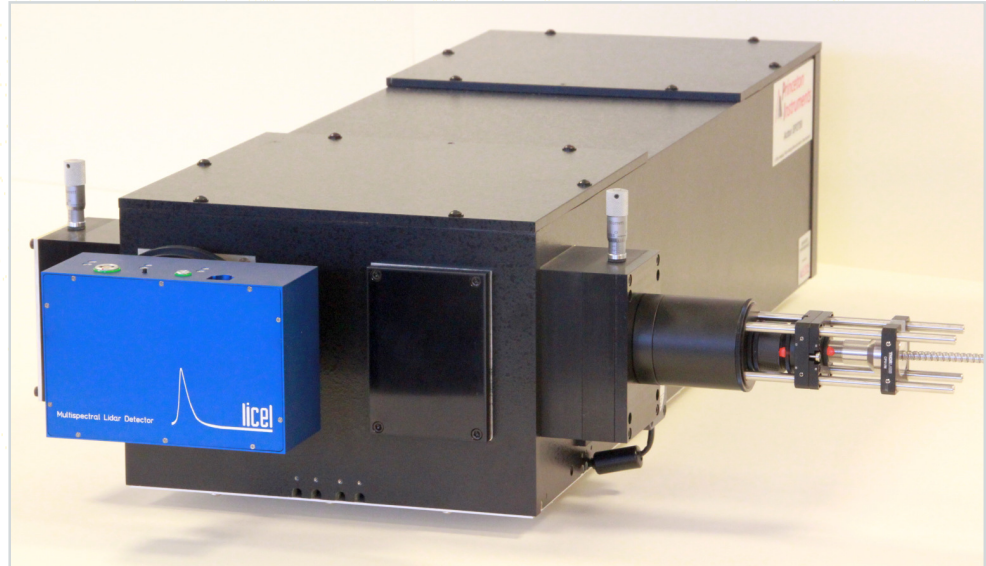


# Multispectral Signal Acquisition

*Model: Sp32-200-2758, 750mm focal length, f/9.7*



## Applications:

Range & spectral resolved data for

- Raman Lidar
- Fluorescence Lidar
- Temperature Lidar

## System Overview:

The Licel multispectral lidar detector allows simultaneous detection of multiple spectrometer wavelengths. It is based on a multianode, metal-channel-dynode photomultiplier. 32 photocathode elements together with 32 single photon counting systems provide 2-dimensional, spectral and range resolved data.

## Features:

- Multi -Anode PMT detector
- up to 0.3nm/channel resolution
- 32 channel photon counting system
- 100 MHz max. count rate
- on board averaging
- integrated HV supply

The high voltage supply, an adjustable discriminator and the trigger logic is integrated on the module. An Ethernet interface is used together with LabView software to control the measurement and readout the acquired data.

## Specifications

### Detector:

Spectral sensitivity:	
Super-Bialkali	300-650nm, -100
Ultra-Bialkali	300-650nm, -200
Bialkali	185-650nm, -03
Multialkali	: 300-880nm, -01
Multialkali:	185-880nm, -04
Multialkali:	300-920nm, -20

### Detector geometry and max. current:

total detector area:	31.8 x 7mm
single cathode area:	0.8 x 7mm (32 channels)
inactive area	
between cathodes:	0.2 x 7mm
Anode uniformity:	1:1.5 typ., 1:2 max. (Bialkali) 1:1.7 typ., 1:2.5 max. (03,04,20)
Cross-talk:	3% to neighbouring channel 0.6% to channel n+2 0.2% to channel n+3 0.1% to channel n+4
PMT max. total average anode current:	
total:	100µA (30 seconds)
per channel:	6 µA (30 seconds)

### Single photon counting system

Max. photon count rate:	100 MHz
Bin width:	50 ns
No. of range bins:	1024
No. of shots to average:	1 - 4096
Max. trigger rate:	110 Hz

### Spectral range and resolution:

with Acton SP-2758 spectrometer f/9.7, 750mm focal length and -200 detector (Ultra Bialkali cathode):

300 grooves/mm ruled grating, 68 x 68mm  
spectral range: 300-650 nm  
spectral resolution: 4.35-4.38 nm/mm

600 grooves/mm ruled grating, 68 x 68mm  
spectral range: 300-650 nm  
spectral resolution: 2.15-2.17 nm/mm

2400 grooves/mm holographic grating, 68 x 68mm  
spectral range: 300-532 nm  
spectral resolution: 0.382-0.471 nm/mm

### Power supply and connectors Dimensions:

Power supply :	+5V/2A, -5V/1A, +15V/0.5A
HV supply:	0..-1000 V
Trigger input:	+2.5V into 1kOhm
Interface:	Ethernet

### Connectors:

Power supply:	Lemo 1B-304
Trigger input:	Lemo Camac
Ethernet:	RJ45

### Dimensions:

Spectrometer, fiber adapter, SP32:	930 x 660 x 220 mm
Power supply:	91 x 128 x 220 mm

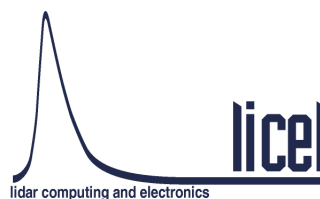
### Optical interface:

Quartz/quartz fiber bundle:  
3.5mm x 0.35mm to 1.25mm round dia.,  $n_a=0.12$

2.15 x imaging fiber adapter to convert  
fiber  $n_a 0.12 = f/4.5$  to spectrometer =  $f/9.7$

### Environmental conditions:

Operating temperature: 0°C to 30°C (non  
condensing)



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