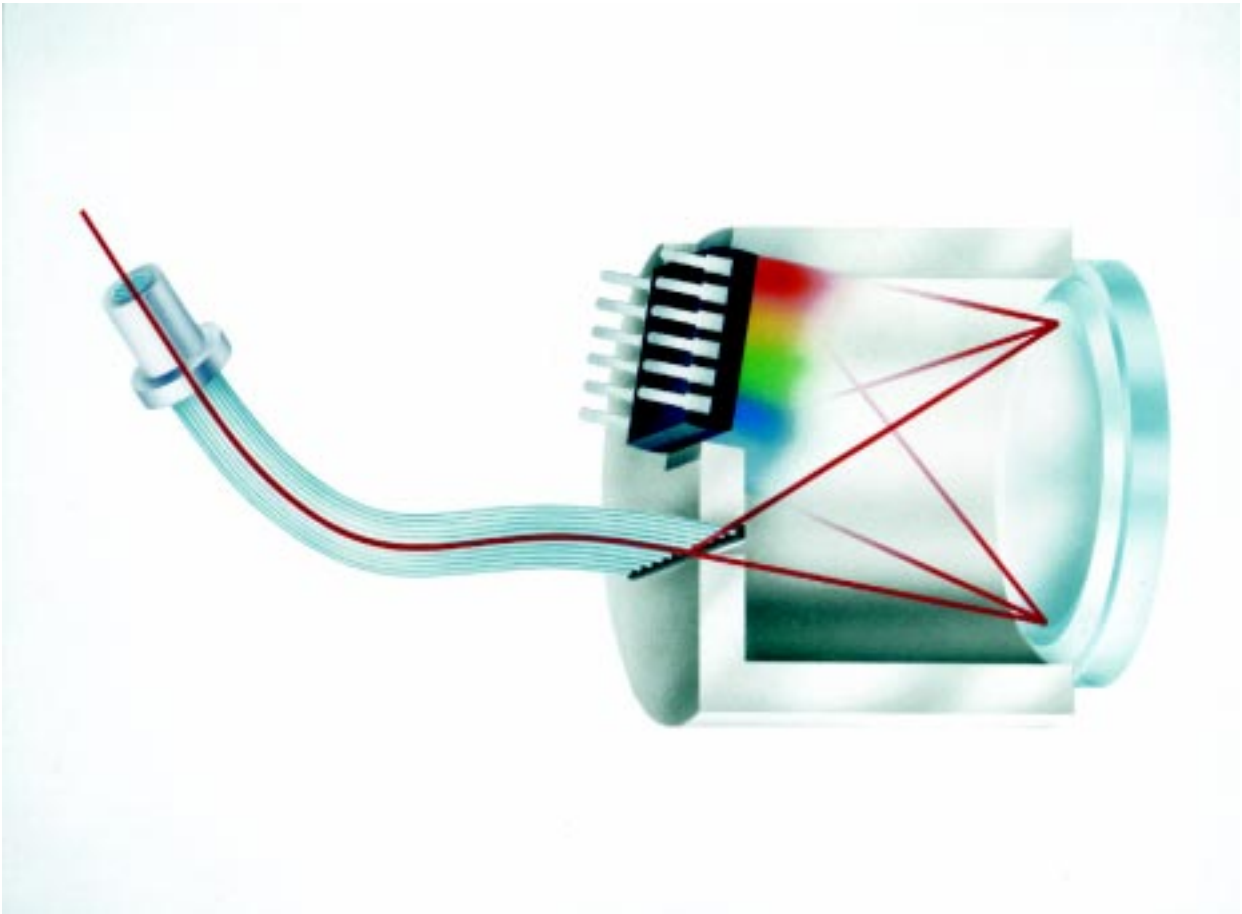


Product Information

MMS UV

Monolithic Miniature - Spectrometer

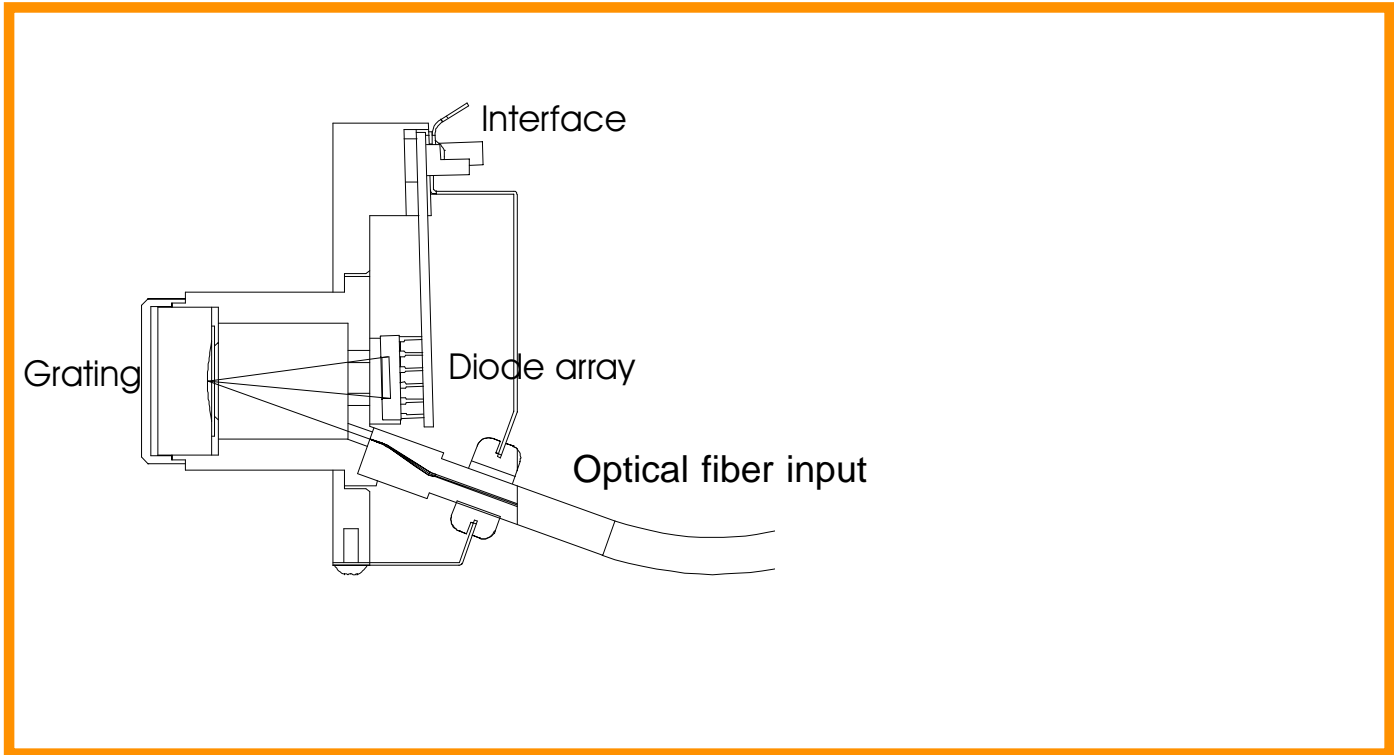


ZEISS

Construction

The module consists of a spectrometer body made of titanium with an aberration corrected grating, a cross section converter as optical entrance and a diode array.

Cross section converter and diode array are fixed to the titanium body.



Benefits

- Use for diverse measuring tasks
- Compact, permanently aligned
- Robust and thermally stable
- Small

Specifications

Optical entrance:

input round:	Fiber cable consisting of approx. 15 quartz glass fibers with 70 μm core diameter each, designed as cross section converter. diameter: 0.4mm NA = 0.2 mounted in SMA-coupling
output linear:	70 μm x 1250 μm (optical entrance)

Grating

Flat-field,
1084 l/mm (center)
blazed for approx. 220nm

Spectral range:

200 nm ... 400 nm
specifications for the range
220 nm... 400 nm

Wavelength accuracy absolute:

0.2 nm

Temperature - induced drift:

< 0.005 nm / K

Spectral distance of pixel:

$\Delta\lambda_{\text{pixel}} \approx 0.8 \text{ nm}$

Resolution

(Rayleigh-criterion):

$\Delta\lambda_{\text{Rayleigh}} \approx 3 \text{ nm}$

Sensitivity:

$\approx 10^{11}$ - 10^{12} Counts/Ws
(with 14-Bit conversion)

Straylight:

0.3 % Deuterium lamp
Signal at 240 nm with NaJ-solution (10g/l)

Dimensions:

total (with case):
cross section converter:
(external length)

70 x 60 x 40 mm³

24 cm standard, up to 1m available.

Diode array

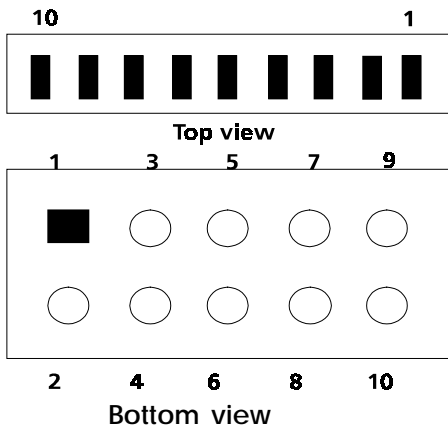
Producer:	Hamamatsu
Type:	S 3904 - 256Q in a special housing
Number of pixels:	256
Dimensions of pixels:	25 x 2500 μm^2
Maximum clock - rate:	2 MHz
Blocking filter for the second order is directly coated on the diode array.	

Preamplifier

Output:	3 V (full modulation)
Sensitivity:	40 $\mu\text{A/V}$
Rise time:	35 V/ms
Frequencyrange:	< 400 KHz
Power consumption:	50 mW

Interface

Video - Output:	SMB - socket
Diode array:	Micromodul - connection MICS - D 10
Connector assignment:	Pin 1,3,5,7,9: 0 V - digital ground
	Pin 2: start
	Pin 4: Phi 2 - clock rate
	Pin 6: EOS - End of Scan
	Pin 8: - 5 V
	Pin 10: + 5 V



System data

Realised with:	14 - Bit - AD - conversion, integration time 10 ms
Dynamic range:	clock rate 28 KHz and 20 - cycles averaging
Noise:	2 ¹⁴
	1 count standard deviation



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