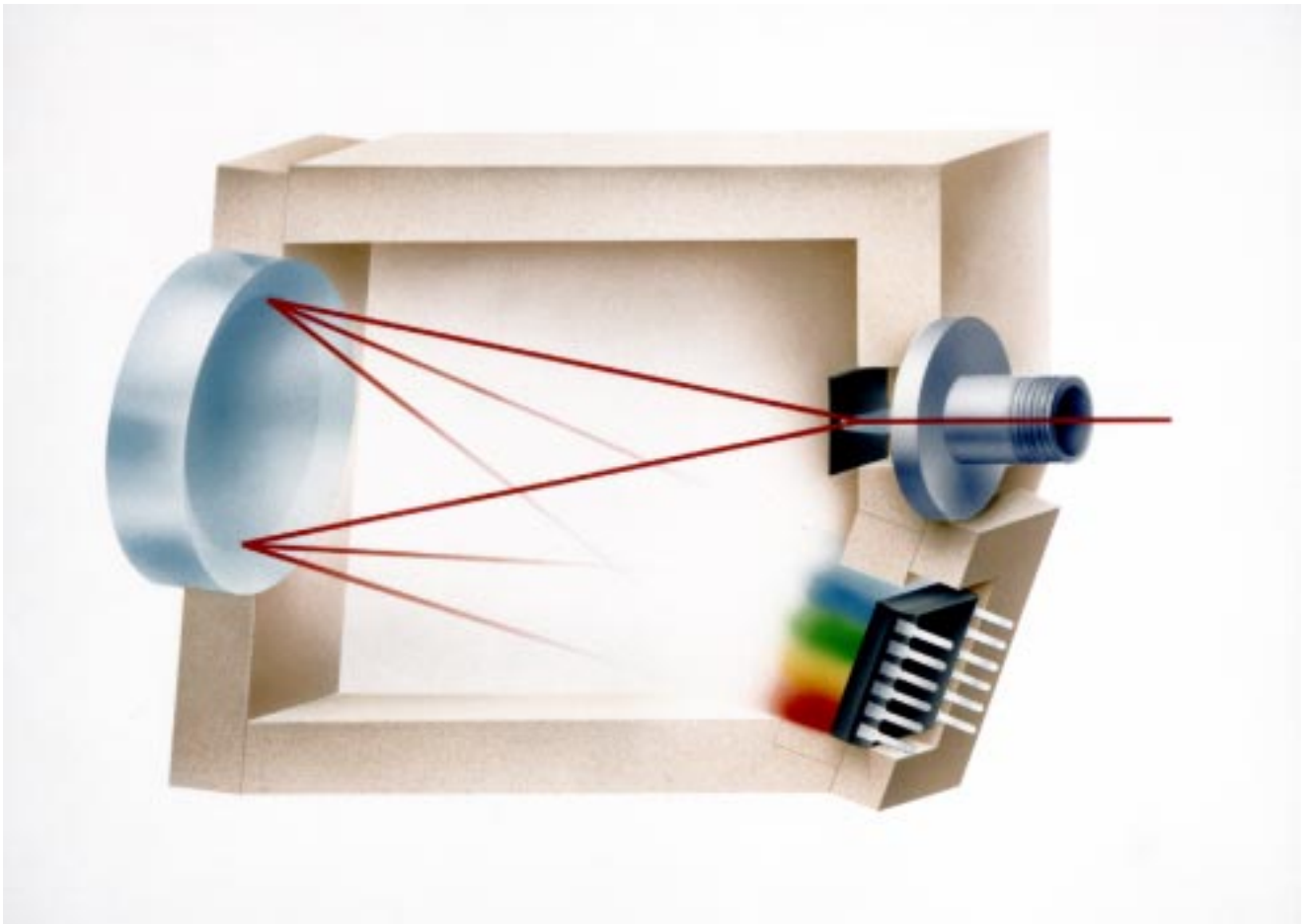


Product Information

MCS

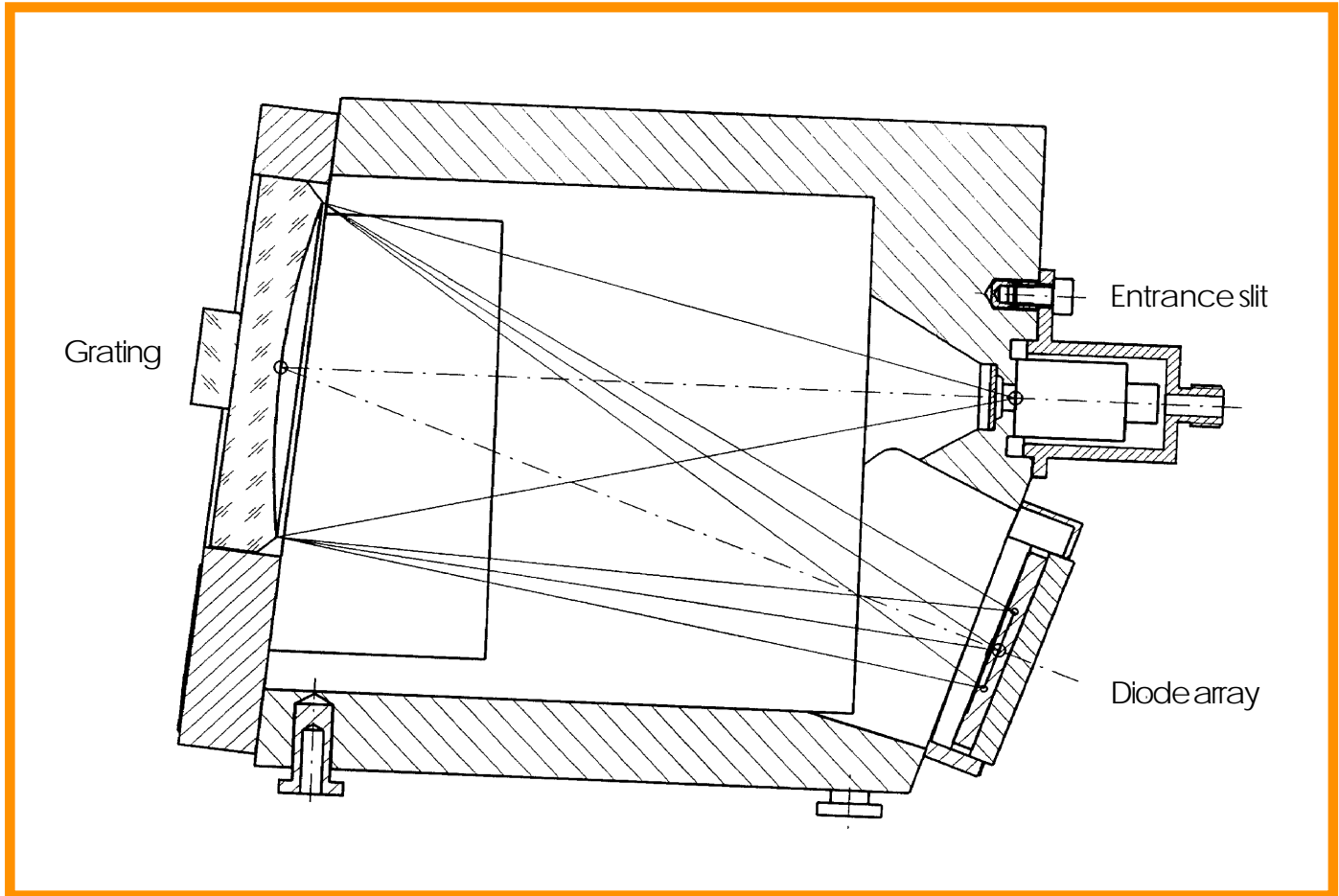
Multi Channel - Spectrometer



Construction

The module consists of a spectrometer body made of patented ceramic structure with an aberration corrected concave grating, a fiber cross section

converter or a mechanical slit as optical entrance and a diode array. All components are cemented to the spectrometer body.



Benefits

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

Specifications

Optical entrance:

CSC-version:	cross section converter: diameter: 0.5mm NA = 0.2 mounted in SMA-coupling, dismountable
Entrance slit	50 μm x 2500 μm

Grating:

Flat-field correction
248l/mm (center)
blazed for approx. 250nm UV- version, 450nm VIS-
version, 750 nm for NIR - version)

Spectral range:

190nm ... 1100nm (220...1000 nm spec. range)
depending on the position and type of diode
array used

Wavelength accuracy absolute:

< 0.3 nm

Reproducibility:

< 0.1 nm

Temperature - induced drift:

< 0.005 nm/ k

Spectral distance of pixel:

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

Resolution: (Rayleigh-criterion)

$\Delta\lambda_{\text{Rayleigh}} \approx 2.4 \text{ nm}$ ($\approx 3 \text{ nm}$ UV-NIR version)

Sensitivity:

$\approx 10^{12}$ - 10^{13} Counts/Ws (14-Bit-conversion)

Straylight :

0,1%
measured at 240 nm with Deuterium lamp and
10 mm 5% NaJO solution

Dimensions:

total 140 x 105 x 75 mm³

Options:

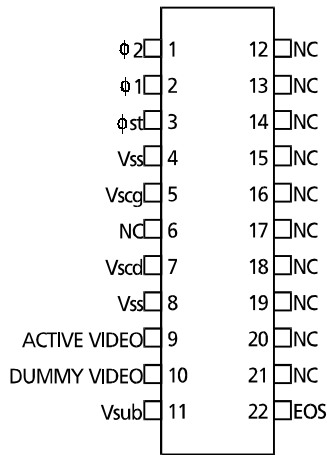
MCS UV-NIR	190 - 1015 nm
MCS UV-VIS	200 - 620 nm
MCS VIS	360 - 780 nm
MCS NIR	680 - 1100 nm

Diode array

Producer:	Hamamatsu
Type:	S 3904 - 512Q ,S 3904-1024Q, (S 4874-1024Q or S 4874-512Q on request)
Number of pixels:	512 or 1024
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.

Interface



- 1 - f_2 - Clock 2
 - 2 - f_1 - Clock 1
 - 3 - f_{ST} - Start Pulse
 - 4 - V_{SS} - Passive Node (GND)
 - 5 - V_{acg} - Saturation Control Gate Voltage
 - 7 - V_{sod} - Saturation Control Drain Voltage
 - 8 - V_{SS} - Passive Node (GND)
 - 9 - Active Video Signal
 - 10 - Dummy Video Signal
 - 11 - V_{aub} - Passive Node (GND)
 - 12 - EOS - End of Scan
- NC : No connection - not used (GND)

Preamplifier with MMS style interface available.

System data

Realised with:	16 - Bit - AD - conversion, integration time 10 ms 100 KHz and 50 -cycles averaging
Dynamic range:	$\approx 2^{15}$
Noise:	1...2 count standard deviation

