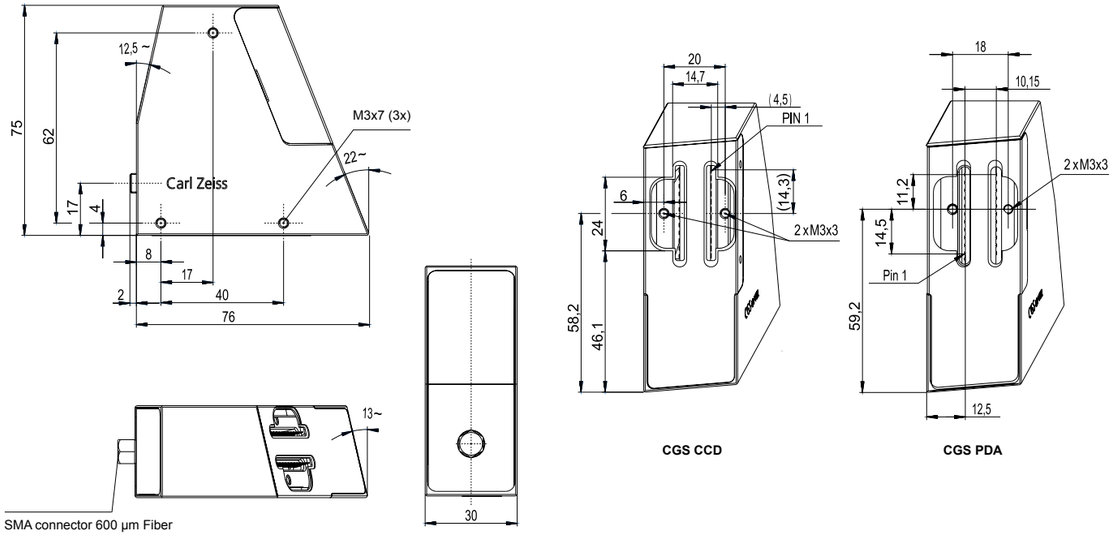
Technical Data

	CGS UV-NIR CCD	CGS UV-NIR PDA
Optical entrance	SMA-coupling	SMA-coupling
	50 µm optical slit (can be varied upon request)	40 µm optical slit (can be varied upon request)
	NA = 0.22 (homogeneous illumination of the acceptance angle)	NA = 0.22 (homogeneous illumination of the acceptance angle)
	600 µm mono-fiber recommended	600 µm mono-fiber recommended
Grating	Flat-field	Flat-field
	528 l/mm (center)	528 l/mm (center)
	blazed for approx. 230 nm	blazed for approx. 230 nm
Spectral range	190 – 1015 nm	190 – 935 nm
Resolution (FWHM)	UV-VIS < 2,2 nm	UV-VIS < 2,0 nm
	NIR < 2,5 nm	NIR < 2,0 nm
Straylight (ASTM 387-04)	3 AU at 240 nm with deuterium lamp (absorption A_{10} of NaI)	3 AU at 240 nm with deuterium lamp (absorption A_{10} of NaI)
Integration time (depending on operation electronics)	min. 30 µs	min. 500 µs
Sensorarray	Hamamatsu S11156, Back-thinned CCD, 2048 pixel	Hamamatsu S3903, 1024 pixel
	Height of element: 1 mm	
	Pixel pitch: 14 µm	
Dimensions L x W x H	78 x 30 x 75 mm³	78 x 30 x 75 mm³

Dimensional drawing



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CGS UV-NIR Family

Compact Grating Spectrometer
from Carl Zeiss

ZEISS
We make it visible.

CGS UV-NIR Family

The compact grating spectrometer CGS UV-NIR is a class all its own. Extremely compact, a rugged design, and with various detector (CCD or PDA) options allow users to measure with maximum quality and optimal spectral efficiency.

The CGS utilizes an aberration corrected imaging grating, a SMA connector as optical input and a CCD or Si Photodiode array (PDA) detector.

The uncooled, back thinned CCD detector captures clear, bright images and ensures high sensitivity. The PDA has extremely low noise and high S/N, even at low light levels. The core component of the spectrometer is a blazed, flat-field grating for light dispersion and imaging. The overall configuration results in a spectral pixel pitch of 0.4 nm/pixel (CCD) and 0.7 nm/pixel (PDA) with spectral resolution of around 2 nm (depending on slit size) according to Rayleigh criterion. The optical interface is an SMA fiber connector with fixed entrance slit (various widths are available) to allow precise alignment of fibers. All optical components are attached to an Aluminum housing.

The spectrometer modules' compact body and thermally stable design make them ideal for industrial applications. Low thermal expansion and minimum stray light guarantee reliable measurement results, even in rough environments. The CGS spectrometer family completes the product lines of the MMS, MCS and PGS spectrometer modules.

The flexible design of the Carl Zeiss spectrometer modules suits many applications. Spectrometer made by Zeiss can be classified according to the measurement principles, the field of use, or material to be analyzed. However, the most important benefits of the CGS are the compact body, reasonable price and insensitivity to external influences which allow direct process integration.

Benefits

- High resolution
- High sensitivity
- Very good signal-to-noise ratio
- High dynamic range
- Small size

Applications

- HPLC Detectors
- Thickness Measurement
- Color Measurement
- Fluorescence Measurement
- Emission Spectroscopy

Measurement principles

- Emission
- Diffuse reflection
- Reflection
- Transmission – absorption
- White Light interference