

# Compact Polymer Spectrometer

190 – 720 nm



**ZEISS CPS Series**





195–390 nm



190–780 nm



190–1100 nm



310–1100 nm



960–2500 nm

## Overview

ZEISS Compact Polymer Spectrometer is a very compact, lightweight and affordable OEM spectrometer for large quantity production. Covering the spectral range of 190–720 nm, the CPS consists of an injection moulded imaging grating and housing components as well as a sensor board with entrance slit and CMOS chip. A special design with passive temperature compensation guarantees thermal and environmental stability. It's ideally suited for integration into hand-held and monitoring devices that use UV-VIS spectrometry.

- ✓ **Low cost**
- ✓ **High-volume production**
- ✓ **Broad spectral coverage**
- ✓ **High Throughput/ NA**
- ✓ **Sensitive CMOS detector**



## Features

ZEISS CPS features a compact design with tailored injection molded imaging grating and housing parts as key components. The sensor board contains a 50 x 600  $\mu\text{m}^2$  optical entrance slit for free space coupling together with the CMOS sensor chip and read-out electronics. The optical design with a numerical aperture of 0.22 enables highest throughput. ZEISS low cost electronics with SPI/UART interface is available.

## Applications

- Water quality monitoring: drinking water, industrial water and wastewater monitoring
- Color measurement: lighting, coatings, displays, printing
- Lighting & LED testing
- Environmental monitoring systems

# Specifications

## CPS UV-VIS

### General

Spectral range	190–720 nm (specified) 160–750 nm (typical)
Resolution (FWHM)	≤ 9 nm
Stray light	≥ 2 AU (@240 nm, NaI 10 g/L, Deuterium light source)
Wavelength accuracy (after system integration)	1.5 nm
Temperature drift	≤ 10 pm/K
Optical entrance/Slit	50 x 600 μm <sup>2</sup>
Numerical aperture	0.22 <sup>1)</sup>
Grating	flat field, 285 L/mm, blazed for 220 nm
Order sorting filter	None

1) Entrance slit must be illuminated homogeneously (± 10%) in area as well as solid angle for specified optical performance.

### Detector

Detector type	S8378-256N (256 px)
Pixel size	25 x 500 μm <sup>2</sup>
Signal / noise <sup>2)</sup>	4000
Mean dark noise (rms) <sup>2)</sup>	≤ 8 counts (at 100 ms integration time)
Nonlinearity <sup>2)</sup>	≤ 1 %

2) When operated with ZEISS Spectrometer Controller LC A.

### Electronics

Digitization	16-bit ADC
Integration time	3–6535 ms
Interface	SPI/UART

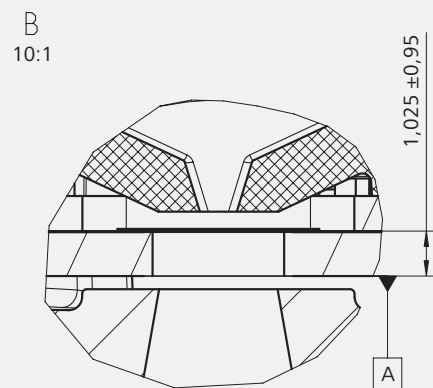
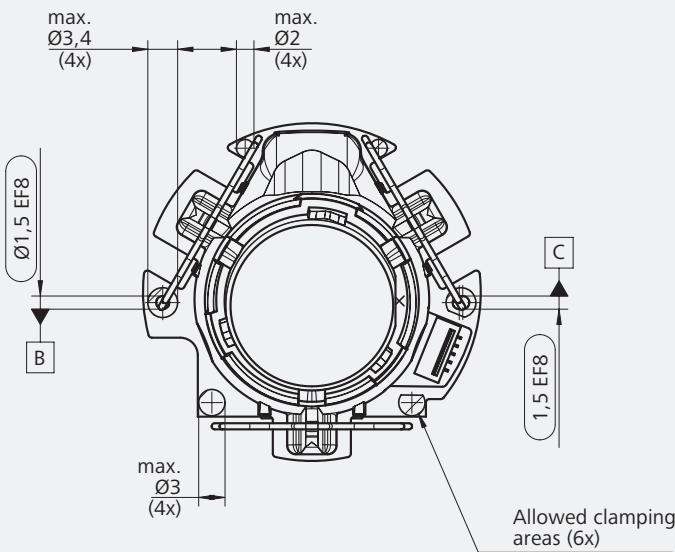
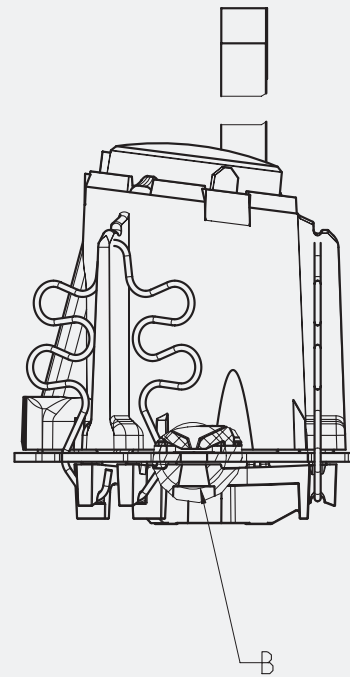
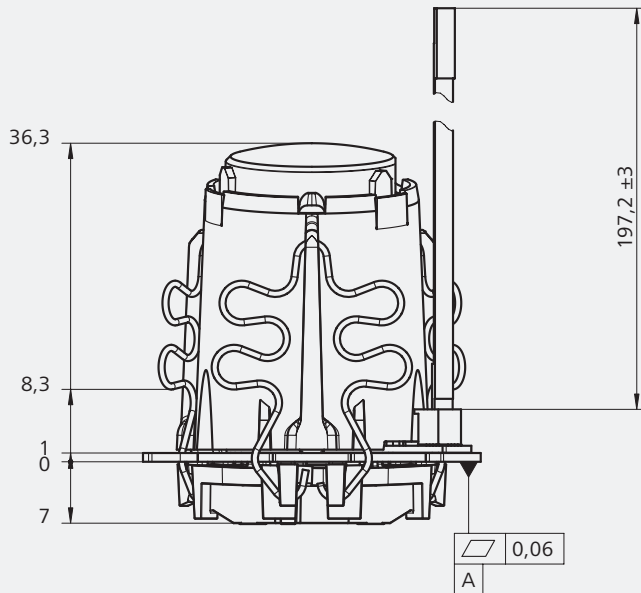
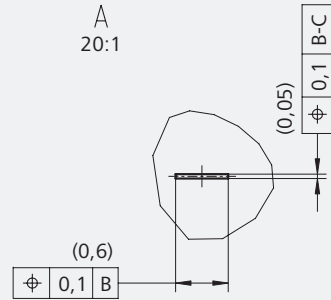
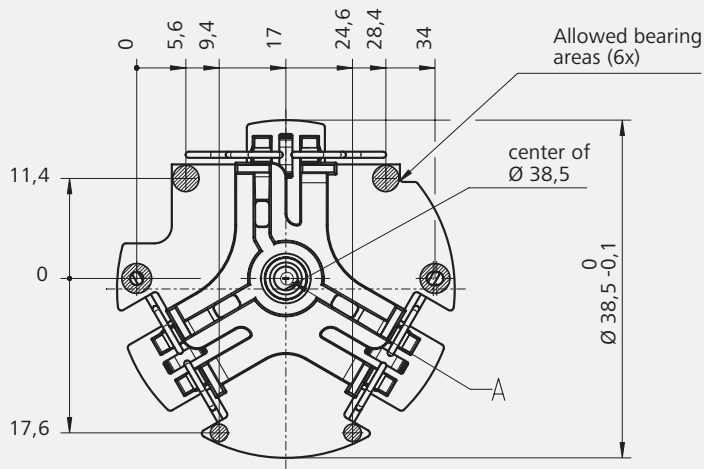
### Environmental/physical

Operating temperature	0 ... 65 °C
Storage temperature	–40 ... 80 °C
Humidity (non-condensing)	≤ 60 % rH long-term ≤ 95 % rH short-term (< 24 h)
UV exposure (plastics parts only)	< 40 mW/m <sup>2</sup> long-term (total irradiance of wavelengths < 360 nm)
Dimensions	Sensor: Ø 38.5 mm x 44 mm A/D Electronics: 65 x 45 x 10 mm <sup>3</sup> Flat Ribbon Cable: (200 ± 5) mm length
Weight (Sensor)	20 g

Specifications are subject to change without notice.

# Dimensional drawings

Dimensional drawing CPS UV-VIS





For questions or  
order requests  
please contact us!

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