



OEM Spectrometer BlueSpecCube

300 ... 1000 nm

BlueSpecCube is a compact spectrometer with many modern communication features. It includes a flat field spectrograph and a powerful processing electronics.

Main characteristics of BlueSpecCube:

- ◆ High quality image with low aberrations across the whole spectral range
- ◆ High dynamic range
- ◆ Compact design
- ◆ Internal mechanical shutter
- ◆ SD card slot and RTCC (optional)
- ◆ Laser diode controller (e.g. for RAMAN, SERS)
- ◆ Li polymer battery charger
- ◆ USB interface
- ◆ Bluetooth interface, alternatively LAN interface



Applications:

- ◆ Mobile spectrometric measurement equipment
- ◆ Colorimeter
- ◆ Spectroradiometer
- ◆ Analytical instrumentation
- ◆ Multichannel spectrometric systems
- ◆ Online analyzer

Advantages:

- ◆ Very compact solution
- ◆ Internal battery
- ◆ Easily extendable to an application specific handheld unit
- ◆ SCPI compatible control syntax
- ◆ Large range of integration time

Controller functions:

- ◆ Internal storage of wavelength-pixel relation
- ◆ Preprocessing of data, dark signal correction, absolute calibration
- ◆ Internal calculations like averaging, interpolation, transmission, reflexion, absorption, color coordinates
- ◆ Dedicated control syntax (SCPI compliant)



Specifications

Optical parameters

Spectral range	300 nm ... 1000 nm
Optical bandwidth	< 4.5 nm FWHM (50 µm slit) (other slit widths on request)
Asymmetry factor	0.7 ... 1.1
Optical input	F-SMA connector for a 200 µm fiber
Wavelength accuracy	≤ 0.2 nm (HgAr linesource)
Wavelength reproducibility	≤ 0.02 nm (HgAr linesource)
Stray light	< 0.1 % (ASTM E387, GG495, λ = 420 nm/ 600 nm)
Spectrometer	Holographic grating, flat field
Detector	Hamamatsu S11639
Shutter	Piezo-electric, opening/ closing time < 20 ms

Electronic parameters

Digital resolution	16 bit
Dynamics	≥ 3000
Typical sensitivity	for 50 µm slit, 200 µm fiber, pixel binning 2, gain 3: 6*10 ¹⁷ counts/ Ws at 300 nm 8*10 ¹⁷ counts/ Ws at 600 nm 2*10 ¹⁶ counts/ Ws at 1000 nm
Sampling speed	up to 4 MS/ s
Transfer speed	up to 3 Mb/ s (via Full Speed USB virtuell COM Port)
Integration time	0.01 ... 65 535 ms
Power supply	USB powered or Li battery
Interfaces	USB (Full Speed), TTL UART (up to 3 MBaud), 3 programmable I/O, 2 analog inputs 10 bit (0 ... 3.3 V), Bluetooth (alternatively LAN: BlueSpecCube LAN)
Attachments	Micro SD card slot (optional), RTCC, Laser diode controller, battery charger

Mechanical parameters

Dimensions	54 mm x 58 mm x 53 mm
Weight	200 g (with battery)

Scope of delivery

Spectrometer BlueSpecCube, PC software VersaSpec, JETI SDK, operation manual, USB cable, BT adapter, USB charger