Light. Measurement. Excellence.

BENTHAM

P200
Imaging Spectrograph

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Plug-and-play, flat-field spectrograph for physical and life science applications

The P200 is an advanced spectrograph that delivers high spectral resolution and seamless integration into a wide range of spectroscopic applications. Compact in design, the P200 offers excellent optical performance and a fully flat field delivering high spectral resolution across the full band pass.

The P200 is customised to your requirements with a range of factory- installed gratings, cameras and slit options. Easy to deploy and fully integrated with no need for user intervention either in focussing or optimisation.

- Fully integrated spectrograph
- Dual grating turret
- Compact design, ideally suited for OEM applications
- Easy to integrate to your experiment

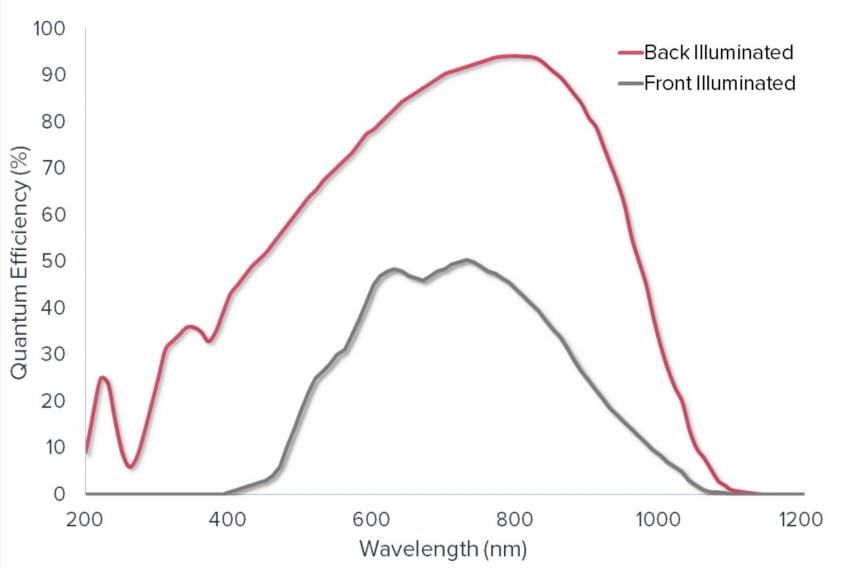
Applications

- Raman
- Photoluminescence
- Fluorescence
- Hyperspectral imaging
- Absorption
- Transmission
- Reflection
- Time-resolved spectroscopy
- Non-linear optics
- LIBS
- Plasma Studies
- Micro-spectroscopy

Quick Summary

Gratings						
Line density (g/mm)	150	300	600	1200	1800	2400
Bandpass (nm)	840	420	210	105	70	52.5
Resolution (nm)	1.6	0.8	0.4	0.2	0.13	0.1

Cameras		
	E2V 261 CCD back illuminated, deep depleted	E2V 261 CCD front illuminated
Full spectral range	200-1100nm	400-1100nm
Active pixel	2048x264 pixel	2048x264 pixel
Pixel size	15 x15µm	15 x15µm
Active area	30.7x 4.0mm	30.7x 4.0mm
Image pixel well depth	120ke-	120ke-
Peak QE	95% @ 800nm	50% @ 730nm
Typical dark current @ -40°C	1 e/p/s	~0.1 e/p/s
Readout noise (@ 500 Hz)	5e- rms (typ.)	5e- rms (typ.)



Specifications

Preliminary Specifications	
Focal length	200mm
Monochromator configuration	Asymmetric Czerny-Turner
Grating mount	Dual-grating turret (interchangeable)
Slits	Motorised variable slits/ interchangeable laser-cut slits
Aperture ratio	f/3.6
Vertical magnification	1.05
Spectral resolution (FWHM)	0.2nm[1]
Bandpass	105nm[2] (full usable range accessible using computer-controlled grating turret)
Useable wavelength range	200-1100nm
Wavelength accuracy	0.15nm
Wavelength repeatability	± 0.05nm
Stray light at 10x FWHM from peak	10^{-4}[3]
Digital Output	16 bit
Non linearity	< 1%
Lowest camera temperature	-40°C in 25°C ambient
Maximum integration time	Up to 60 mins[4]
Software	Benwin+ spectral acquisition application: 64-bit Windows application. Control wavelength, slit width and camera exposure time. Visualise and export results. SDK: Software development kit compatible with C++, Delphi, Java, LabView, MatLab, Python & VBA.
Dimensions	H365mm x W170mm x D220mm Approx
Weight	TBC
Interface	USB 2.0
Power supply	110/220 V AC external supply

[1] At 500nm centre wavelength, with 1200g/mm grating and 10µm slit

[2] Achieved with 2048x264 pixel camera and 1200g/mm grating

[3] Stray light measured under HeNe laser illumination (632.8nm), laser peak normalised to unity.

[4] When operating in ITP mode

Options
Interchangeable laser-cut entrance slit
Motorised entrance slit
High repetition rate shutter

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