



D A T A S H E E T

S P P E C T R U M M S Y S T E M

SpectruMM:400B
 Acton Research
 1340 x 400 imaging array
 20 x 20- μ m pixels

The SpectruMM:400B is a high-performance digital camera system featuring a back-illuminated, spectroscopic-format CCD designed exclusively for Roper Scientific™. Its 8-mm-tall imaging area is ideal for rapid, multistripe spectroscopy and weak phenomena. Back-illumination gives SpectruMM:400B the superior sensitivity necessary for photon-starved applications. The 400B sensor is available in the SpectruMM HP and SpectruMM LN series systems.

F E A T U R E S

B E N E F I T S

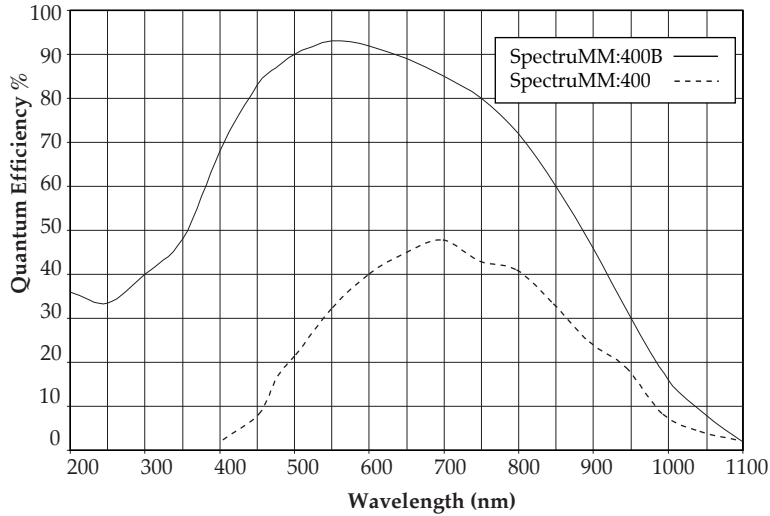
Roper Scientific exclusive CCD	Designed expressly for spectroscopy
1340 x 400 imaging array	Ideal spectroscopy format Delivers 30% more coverage than 1024-pixel CCDs
20 x 20- μ m pixels	Optimal pixel size for best resolution and full well capacity
8-mm-tall imaging area	Ideal for multiple input fibers
Back-illuminated CCD	Provides unparalleled sensitivity and quantum efficiency
Custom AR coating Proprietary surface treatment	Reduces etaloning and lowers reflection losses
Lowest noise CCD available in back-illuminated format	Ideal for extreme low-light measurements





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S P E C I F I C A T I O N S

CCD image sensor	Roper Scientific exclusive; scientific grade 1; MPP; back-illuminated, available with Unichrome UV-enhancement coating
CCD format	1340 x 400 imaging pixels; 20 x 20- μ m pixels; 100% fill factor; 26.8 x 8.0-mm imaging area
Spectrometric well capacity	250,000 e ⁻
System read noise	<2 ADC counts @ 100 kHz; <4 ADC counts @ 1 MHz
Nonuniformity	<4% over entire CCD (excluding blemishes)
Dynamic range	16 bits @ 100 kHz and 1 MHz
Scan rate	100 kHz or 1 MHz
Spectral rate	40 Hz full-vertical binning @ 100 kHz; 75 Hz full-vertical binning @ 1 MHz
Dark current	<0.1 e ⁻ /p/s @ -45°C in SpectruMM HP; <1 e ⁻ /p/hr @ -100°C in SpectruMM LN

Note: Specifications are typical and subject to change.

Roper Scientific / Acton Research

Product Literature

Data sheets

Brochures

SpectraPro monochromators

Spectrum Acquisition Systems

Spectroscopy accessories

Guide to system configuration



ROPER SCIENTIFIC™
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Gratings

CCD Chips

GS 1024 x 128 Front

GS 1024 x 128 Back

GS 1024 x 256 Front

GS 1024 x 256 Back

S 1340 x 100 Front

S 1340 x 100 Back

S 1340 x 100 Red

S 1340 x 100 Back Red

S 1340 x 400 Front

S 1340 x 400 Back

S 1340 x 400 Red

S 1340 x 400 Back Red

S 1024 x 256 Front

S 1024 x 256 Open Elect.

S 1024 x 256 Back