



D A T A S H E E T

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



The SpectruMM:400BR is a high-performance digital camera system featuring a deep-depletion, 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. The combination of deep depletion and back-illumination gives the SpectruMM:400BR unsurpassed sensitivity and superior noise specifications even in the near-infrared (NIR). The 400BR sensor is available in the SpectruMM LN series system.

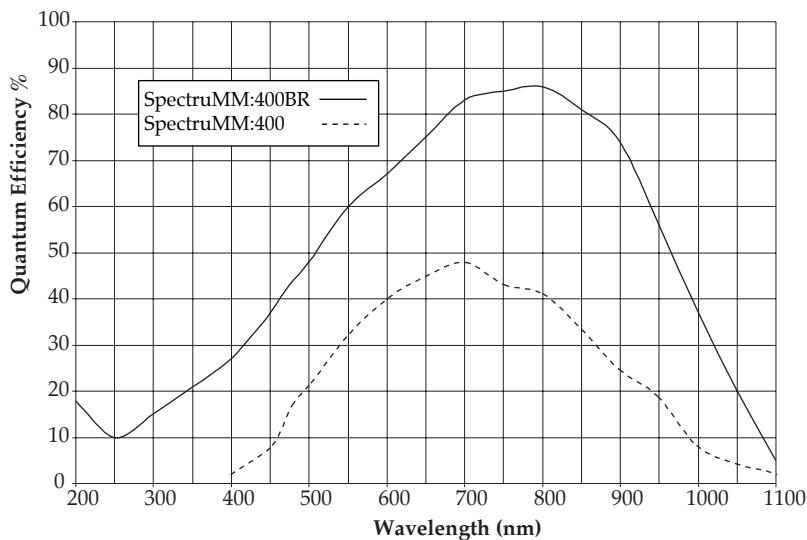
| F E A T U R E S | B E N E F I T S |
|---|--|
| Roper Scientific exclusive CCD | Designed expressly for spectroscopy |
| Deep-depletion silicon | Optimizes response and quantum efficiency (QE) in the NIR |
| 1340 x 400 imaging array | Ideal spectroscopy format Delivers 30% more coverage than 1024-pixel CCDs |
| 20 x 20-µm pixel | 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 QE |
| 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; non-MPP; back-illuminated, deep-depletion; 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 | <0.01 e ⁻ /p/s @ -100°C |

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™
ACTON RESEARCH

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