



D A T A S H E E T

S P E C I A L I Z E D S E N S I T I V E S Y S T E M

SpectruMM:400R
 Acton Research
 1340 x 400 imaging array
 20 x 20-µm pixels

The SpectruMM:400R is a high-performance digital camera system featuring a deep-depletion, spectroscopic-format CCD designed exclusively for Roper Scientific™. Its 8-mm-tall imaging area is ideal for rapid, multistripe spectroscopy and weak phenomena. Deep-depletion silicon optimizes the quantum efficiency (QE) and overall near-infrared (NIR) response of the SpectruMM:400R, providing unsurpassed sensitivity and noise specifications. The 400R sensor is available in the SpectruMM LN series system.

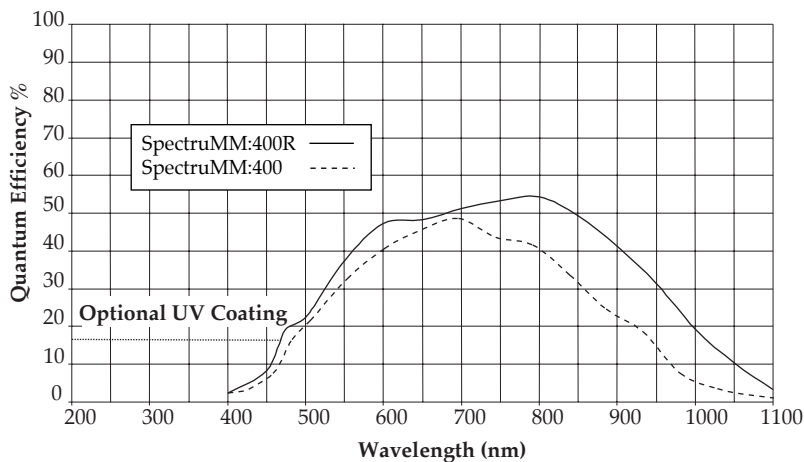
F E A T U R E S	B E N E F I T S
Roper Scientific exclusive CCD	Designed expressly for spectroscopy
Deep-depletion silicon	Optimizes response and QE in the NIR
1340 x 400 imaging array	Ideal spectroscopy format Delivers 30% more coverage than 1024-pixel CCDs
20 x 20-µm pixels	Optimal pixel size for best resolution and full well capacity
8-mm-tall imaging area	Ideal for multiple input fibers
Front-illuminated CCD	Offers affordable, high-quality performance No etaloning
Lowest noise CCD available	Ideal for fluorescence-free Raman spectroscopy





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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; deep-depletion, available with UV-enhancement coating
CCD format	1340 x 400 imaging pixels; 20 x20- 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	50 Hz full-vertical binning @ 100 kHz; 135 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