



# D A T A S H E E T

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

**SpectruMM:100R**  
 Acton Research  
 1340 x 100 imaging array  
 20 x 20-µm pixels

The SpectruMM:100R is a high-performance digital camera system featuring a deep-depletion, spectroscopic-format CCD designed exclusively for Roper Scientific™. The 1340 x 100 imaging array is ideal for spectroscopy applications, providing small height for fast spectral rates and full 26-mm spectral coverage. Deep-depletion silicon optimizes the quantum efficiency (QE) and overall near-infrared (NIR) response of the SpectruMM:100R, providing unsurpassed sensitivity and noise specifications. The 100R sensor is available in the SpectruMM LN series system.

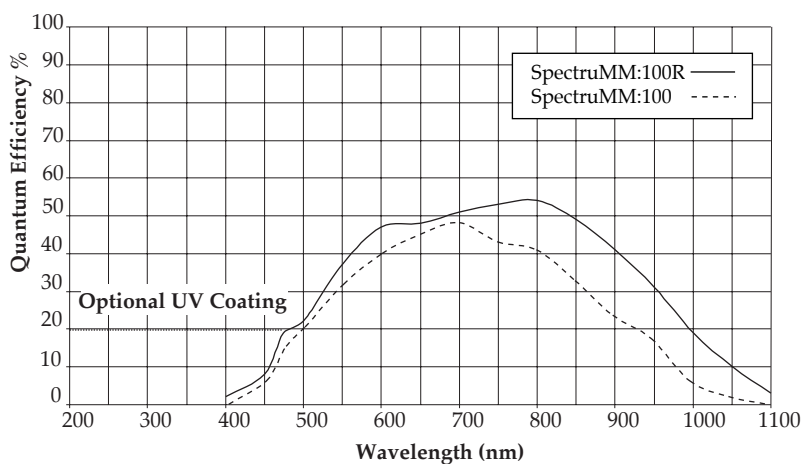
F E A T U R E S	B E N E F I T S
Roper Scientific exclusive CCD	Designed expressly for spectroscopy
Deep-depletion silicon	Optimizes response and QE in the NIR
1340 x 100 imaging array	Ideal spectroscopy format Delivers 30% more coverage than 1024-pixel CCDs
20 x 20-µm pixels	Optimal pixel size for best resolution and full well capacity
2-mm-tall imaging area	Ideal for rapid, single-stripe spectroscopy
Front-illuminated CCD	Offers affordable, high-quality performance No etaloning
Lowest noise CCD available	Ideal for extreme low-light measurements and fluorescence-free Raman spectroscopy





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S P E C I F I C A T I O N S M M U R T C E S



## 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 100 imaging pixel; 20 x 20- $\mu$ m pixels; 100% fill factor; 26.8 x 2.0-mm imaging area
Spectrometric well capacity	250,000 e <sup>-</sup>
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 <sup>-</sup> /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*