

DATA SHEET

For the most current version visit www.phantomhighspeed.com
Subject to change Rev January 2020

Phantom® Miro-R Series

Reliable high-speed imaging
in a rugged, compact package



Miro R-321S

Key Benefits:

Phantom Miro-R cameras are designed to capture and deliver high-quality high-speed video in a variety of test environments including:

- On and off-board automotive crash testing, and applications with similar harsh conditions
- Remote camera installations where complete setup and control must be at a distance
- Multiple-camera installations with limited space

The Miro-R series is available in three unique models, each incorporating a custom 12-bit, global-shutter CMOS sensor.

Imaging Specifications:

	R-311	R-321S	R-341
Pixel Resolution	1280 x 800	1920 x 1200	2560 x 1600
Frame Rate at max res	3,200 fps	1,380 fps	800 fps
Sensor Size	25.6 x 16mm	19.2 x 12mm	25.6 x 16mm
ISO (12232 STD)	Mono: 16,000T, 6400D Color: 2000T, 2000D	Mono: 16,000T, 6400D Color: 1250T, 1250D	
Exposure Index	Adjustable E.I.* Mono E.I. 6400 – 32,000 Color E.I. 2000 – 10,000	Adjustable E.I.* Mono E.I. 6400 – 32,000 Color E.I. 1250 – 6,400	

Key Features:

3.2 Gpx/s throughput at 1, 2 or 4 Megapixel resolution

Minimum exposure: 1µs

RAM: 12 GB

Removable media: 120GB or 240GB CineFlash drives
(120GB CineFlash and dock included)

Battery backup: Compatible with Sony BP-U30 & 60
(BP-U30 and charger included)

Durable metal body construction rated up to 30G standard
or 100G without internal shutter

Video monitoring:

- R-311 includes NTSC/PAL
- R-321S includes HD-SDI

Made in USA

*Recommended Exposure Index (E.I.) range is specified.

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Resolution/Speed Chart & Record Times

	Miro R-311	Miro R-321S	Miro R-341
Resolution	Max Frames per Second; (12GB rec time in seconds)		
2560 x 1600	-	-	800 (2.5s)
1600 x 1600	-	-	1,220 (2.5s)
1920 x 1200	-	1,380 (2.5s)	1,380 (2.5s)
1920 x 1080	-	1,530 (2.5s)	1,530 (2.5s)
1280 x 800	3,260 (2.3s)	2,940 (2.5s)	2,960 (2.5s)
1280 x 720	3,630 (2.3s)	3,200 (2.6s)	3,280 (2.5s)
640 x 480	10,100 (2.5s)	8,300 (2.6s)	8,450 (2.5s)
512 x 512	11,500 (2.6s)	9,200 (2.6s)	9,280 (2.6s)
256 x 256	39,700 (3s)	26,400 (4.6s)	27,200 (4.4s)
128 x 128	120,700 (4s)	62,000 (8s)	66,600 (7s)
128 x 8	650,000 (12s)	240,000 (45s)	311,000 (25s)

Other resolutions and speeds are available.

Visit phantomhighspeed.com/calc for recording time calculator for all available resolutions and frame rates.

Connectivity

Ethernet: Gb Ethernet with locking Fischer cable

Power: 12-28 VDC, 65W power supply included

Battery: Removable Sony BP-U30 and U60

I/O: Capture port supplies access to trigger, IRIG timecode in/out, analog video, and assignable signals such as F-Sync, Event, Strobe, Ready.

Mini-BOB included for access to signals.

Video Output: R-311 has NTSC/PAL analog video only. R-321S has HD-SDI only. R-341 has no video output.



Vision Research Global Support Network

The Phantom Miro line is supported by Vision Research's Global Service and Support network offering AMECare Performance Services from multiple sites around the globe. Maximize the value of your Phantom camera with a menu of professional support services. Learn more about our service and support options at www.phantomhighspeed.com/Service-Support

Select Features & Accessories

Image-based Auto Trigger (IBAT): Trigger the camera (or even multiple connected cameras) from motion detected within the live image, per the parameters set up in PCC

CineFlash Workflow: Save images from RAM immediately after capture, either manually or automatically. The save rate is ~4GB/minute. The CineFlash module can be removed when ready and downloaded via USB3 or eSata via the CineFlash dock. A 120GB CineFlash module and dock come standard with each Miro-R purchase.

Junction Box: Connect up to 6 Miro-R cameras (or a mix of other Miro/VEO cameras) to the Phantom Miro Jbox (JB2.0). Power, FSync and other signals are all managed through the Jbox and a single Ethernet cable connects to the PC for software control.

Camera Control & File Formats

Phantom PCC Software for setup, control, download, image manipulation and basic motion analysis

Native File Format is Phantom Cine Raw (.cine). Cines can be easily converted to other formats including h.264 mp4, Apple ProRes .mov, AVI, Tiff, JPEG, DPX, DNG and many more using PCC. Cine Raw files directly compatible with many major video editing and motion analysis programs

SDK with both Labview and Matlab support is available

Mechanical & Environmental

Dimensions: 7.5 x 3.5 x 4 in (19 x 8.8 x 10 cm)

Weight: 3.5 lbs, 1.6 kg without battery or lens

Lens Mount: Choices include Nikon F with G-style lens support, C-mount, and Canon EF with electronic lens control

Mounting Points: 3X standard 1/4 x 20 on top and bottom

Cooling: Actively cooled. Quiet mode temporarily disables the fan, useful for microscopy.

Operational Temperature: -10°C - +50°C

Operational Shock:

* 30G standard config with internal shutter installed and BP-U30 battery

* 100G without internal shutter (option available at time of purchase)

Test details: Sawtooth wave, 11ms, 10 pulses, all axes, no lens.

VISION
RESEARCH

AMETEK
MATERIALS ANALYSIS DIVISION

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Please visit www.phantomhighspeed.com/export for more information.