

NM-3DH and NM-5DH Monochromators

PRODUCT SUMMARY

Low stray light, excellent throughput and wide wavelength range highlight the features of Gamma Scientific's NM-3DH and 5DH monochromator systems. Each system uses an f/3.2 astigmatic holographic grating as the monochromatic selector.

With the addition of either a Gamma Scientific detector assembly or light source, these systems can be quickly configured to measure sources or detectors respectively. In either configuration they are computer controlled using our Model GS-4100A or GS-3100 intelligent radiometer.

The NM-3DH and NM-5DH are identical except for optical specifications. Each includes an electric shutter for dark-current subtraction via computer control. Each includes automatic insertion of a second-order rejection filter at the appropriate wavelength. These filters are motor driven during both insertion and removal for positive, trouble-free operation.

In both systems, careful optical design eliminates any optical element between slits except for the concave grating. There are no mirrors or lenses between slits. This approach minimizes scattered light in this, the most critical optical part of the monochromator.

Both the NM-3DH and NM-5DH monochromators are controlled by the GS-4100A or GS-3100 intelligent radiometers. The system is easily controlled using any Windows-based computer using the Light Touch software package.



FEATURES

- *Low stray light*
- *Excellent throughput*
- *Wide wavelength range*
- *NM-5DH 200-800 nm*
- *NM-3DH 300-1100 nm*
- *Excellent wavelength accuracy*
- *Different half-power bandwidths available*
- *Optical design has no mirrors or lenses between the slits*



GAMMA SCIENTIFIC

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NM-3DH and NM-5DH Monochromators

SPECIFICATIONS

	NM-3DH	NM-5DH
Grating	Holographic-recorded, aberration-corrected, concave, 800 grooves per mm, especially optimized for flat spectral response from 300 nm to 1.1 μ m.	Holographic-recorded, aberration-corrected, concave, 1200 grooves per mm, especially optimized for flat spectral response from 200 to 800 nm.
Effective aperture	f/3.2	f/3.2
Wavelength range	300-1100 nm	200-800 nm
Wavelength linearity	± 0.3 nm	± 0.3 nm
Wavelength repeatability	± 0.5 nm	± 0.3 nm
Half-power bandwidth	10, 6, 3, or 1.2 nm	6.7, 4, 2, or 0.8 nm
Scattered light	5×10^{-4} at less than 2 bandwidths from the HeNe laser line	5×10^{-4} at less than 2 bandwidths from the HeNe laser line
Scan rate	10 nm/sec to 0.7 nm/sec.	6.6 nm/sec to 0.5 nm/sec.
Digital wavelength accuracy	± 0.1 nm	± 0.1 nm
Higher order rejection filter	Automatic in/out at 590 nm blocks below 550 nm	Automatic in/out at 500 nm blocks below 450 nm
Ghosts	No ghost above 10^{-10} of its parent	No ghost above 10^{-10} of its parent
Optical design	No mirrors or lenses between slits	No mirrors or lenses between slits
Reciprocal dispersion	12 nm per mm	8 nm per mm
Shutter	Internal electric shutter	Internal electric shutter
Weight	11 lbs (5 kg)	11 lbs (5 kg)
Height	6.6" (16.8 cm)	6.6" (16.8 cm)
Width	6.5" (16.5 cm)	6.5" (16.5 cm)
Length	11 1/2" (29.2 cm)	11 1/2" (29.2 cm)
Power	7 watts	7 watts
Line voltage	105/125 or 210/250 VAC, 50-60 Hz	105/125 or 210/250 VAC, 50-60 Hz



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