

# NM-7DHA, NM-9DHA and NM-10DH Monochromators

## PRODUCT SUMMARY

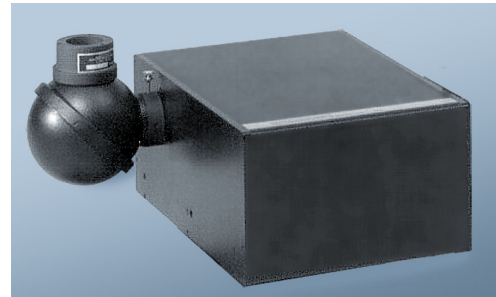
Low stray light, excellent throughput and wide wavelength range highlight the features of Gamma Scientific's NM-7DHA, NM-9DHA and NM-10DH monochromator systems. Each system uses two mechanically linked f/3.2 astigmatic holographic gratings as the monochromatic selector.

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-7DHA, NM-9DHA, and NM-10DH 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.

With all 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.

All 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-9DHA 200-800 nm*
- *NM-7DHA 300-1100 nm*
- *NM-10DH 350-1700 nm*
- *Excellent wavelength accuracy*
- *Different half-power bandwidths available*
- *Optical design has no mirrors or lenses between the slits*



**GAMMA SCIENTIFIC**

8581 Aero Drive San Diego, CA 92123 Ph (858) 279-8034 Fax (858) 576-9286

Website: [www.gamma-sci.com](http://www.gamma-sci.com)

# NM-7DHA, NM-9DHA and NM-10DH Monochromators

## SPECIFICATIONS

<b>Gratings: Two holographic recorded aberration-corrected, concave gratings, especially optimized for excellent spectral throughput</b>			
	<b>NM-7DHA</b>	<b>NM-9DHA</b>	<b>NM-10DH</b>
<b>Grooves per mm</b>	800	1200	600
<b>Effective aperture</b>	f/3.2	f/3.2	f/3.2
<b>Wavelength range</b>	300-1100 nm	200-800 nm	350-1700 nm
<b>Wavelength range with NM-200-- Dual Detector Option</b>	300-1100 nm	200-800 nm	350-1700 nm
<b>Wavelength accuracy with emission source calibration</b>	±0.2 nm	±0.2 nm	±0.2 nm
<b>Wavelength repeatability</b>	±0.17 nm	±0.17 nm	±0.2 nm
<b>Bandwidth</b>	See below	See below	See below
<b>At 8 bandwidths from NeNe laser line</b>	4x10 <sup>-7</sup>	N/A	4x10 <sup>-7</sup>
<b>With Xenon arc lamp &amp; cellulose acetate filter</b>	N/A	4E-7	N/A
<b>Higher order rejection filter, automatic Insertion</b>	590 nm	400 nm	590 nm
<b>Ghosts</b>	10 <sup>-10</sup> of parent	10 <sup>-10</sup> of parent	10 <sup>-10</sup> of parent
<b>Reciprocal dispersion</b>	6 nm per mm	4 nm per mm	8 nm per mm
<b>Shutter</b>	Electric	Electric	Electric
<b>Weight</b>	16.5 lbs	16.5 lbs	16.5 lbs
<b>Height</b>	5.5"	5.5"	5.5"
<b>Width</b>	9.4"	9.4"	9.4"
<b>Length</b>	12.5"	12.5"	12.5"
<b>Control Unit</b>	GS-4100A or GS-3100	GS-4100A or GS-3100	GS-4100A or GS-3100
<b>Computerized operation</b>	Full	Full	Full
<b>Scan time, typical</b>	400-700 nm with 1 sample @ each point in less than 30 seconds		
<b>Optical design</b>	No mirrors or lenses between slits		

### Nominal Half-Power Bandwidths

<b>Model #</b>	<b>Slit width (mm)</b>	<b>NM-7DHA (nm)</b>	<b>NM-9DHA (nm)</b>	<b>NM-10DH (nm)</b>
NMS-08	2.5	15.0	10.0	20.0
NMS-07	2.5 x 3H	15.0	10.0	20.0
NMS-06	1.67	10.0	7.0	13.0
NMS-05	1.25 x 3H	7.5	5.0	10.0*
NMS-04	1.0	6.0	4.0	8.0
NMS-03	0.83	5.0	3.3	6.6
NMS-02	0.5	3.0*	2.0*	4.0
NMS-01.1	0.416	2.5	1.7	3.3
NMS-01	0.25	1.5	1.0	2.0
NMS-0.9	0.167	1.1	0.9	1.7

User interchangeable, 3 required. Except where noted, all slits are 8 mm long.

\* denotes standard slits supplied: others are available as options.



# **GAMMA SCIENTIFIC**

8581 Aero Drive San Diego, CA 92123 Ph (858) 279-8034 Fax (858) 576-9286

Website: [www.gamma-sci.com](http://www.gamma-sci.com)