Standard SpectraPro HRS Gratings

Groove density (g/mm)	Blaze wavelength (nm)	Mechanical scanning range	Optimum wavelength range (nm)		Spectral resolution (nm)*	Dispersion (nm/mm)*	Grating part number (68 mm x 68 mm)
50	600	0 – 36 µm	402	950	2.4	64.119	i1-005-600-P
66.6	740	0 – 27 µm	496	1150	1.8	48.078	i1-006-740-P
75	1800	0 – 24 µm	1200	2800	1.6	42.666	i1-007-1800-P
100	450	0 – 18 µm	300	700	1.2	31.938	i1-010-450-P
100	1500	0 – 18 µm	1000	2350	1.2	31.938	i1-010-1500-P
120	410	0 – 15 µm	275	650	1	26.574	i1-012-410-P
150	300	0 – 12 µm	200	500	0.8	21.208	i1-015-300-P
150	500	0 – 12 µm	330	800	0.8	21.208	i1-015-500-P
150	800	0 – 12 µm	425	1400	0.8	21.208	i1-015-800-P
150	1250	0 – 12 µm	850	2100	0.8	21.208	i1-015-1250-P
150	1600	0 – 12 µm	1050	2500	0.8	21.208	i1-015-1600-P
300	200	0 – 6 µm	135	325	0.4	10.467	i1-030-200-P
300	500	0 – 6 µm	330	800	0.4	10.467	i1-030-500-P
300	750	0 – 6 µm	500	1200	0.4	10.467	i1-030-750-P
300	1000	0 – 6 µm	650	1600	0.4	10.467	i1-030-1000-P
300	1200	0 – 6 µm	700	2100	0.4	10.467	i1-030-1200-P
300	1700	0 – 6 µm	1100	2700	0.4	10.467	i1-030-1700-P
300	2000	0 – 6 µm	1300	4000	0.4	10.467	i1-030-2000-P
600	150	0 – 3 µm	105	250	0.2	5.072	i1-060-150-P
600	300	0 – 3 µm	200	500	0.2	5.072	i1-060-300-P
600	500	0 – 3 µm	330	800	0.2	5.072	i1-060-500-P
600	750	0 – 3 µm	500	1300	0.2	5.072	i1-060-750-P
600	1000	0 – 3 µm	670	1600	0.2	5.072	i1-060-1000-P
600	1600	0 – 3 µm	1050	2500	0.2	5.072	i1-060-1600-P
900	500	0 – 2 µm	335	800	0.133	3.251	i1-090-500-P
1200	150	0 – 1500 nm	105	250	0.1	2.323	i1-120-150-P
1200	300	0 – 1500 nm	200	700	0.1	2.323	i1-120-300-P
1200	500	0 – 1500 nm	325	1000	0.1	2.323	i1-120-500-P
1200	750	0 – 1500 nm	475	1500	0.1	2.323	i1-120-750-P
1200	UV holographic	0 – 1500 nm	200	450	0.1	2.323	i1-120-HUV-P
1200	VIS holographic	0 – 1500 nm	400	1100	0.1	2.323	i1-120-HVIS-P
1800	250	0 – 1000 nm	160	400	0.067	1.356	i1-180-250-P
1800	500	0 – 1000 nm	330	800	0.067	1.356	i1-180-500-P
1800	670	0 – 1000 nm	450	1100	0.067	1.356	i1-180-670-P
1800	UV holographic	0 – 1000 nm	200	500	0.067	1.356	i1-180-HUV-P
1800	VIS holographic	0 – 1000 nm	350	1000	0.067	1.356	i1-180-HVIS-P
2400	150	0 – 750 nm	105	250	0.05	0.825	i1-240-150-P
2400	240	0 – 750 nm	160	400	0.05	0.825	i1-240-240-P
2400	UV holographic	0 – 750 nm	200	500	0.05	0.825	i1-240-HUV-P
2400	VIS holographic	0 – 750 nm	250	750	0.05	0.825	i1-240-HVIS-P
3600	240	0 – 500 nm	160	400	0.033	0.68*	i1-360-240-P
3600	UV holographic	0 – 500 nm	200	500	0.033	0.68*	i1-360-HUV-P
MIRROR	–	0 nm	–	–	–	–	i1-300-500-MIRROR

** Specifications at 500 nm, 3600 g/mm calculated at 250 nm*
Larger 68 mm x 84 mm gratings are available as an option in 1200, 1800, 2400, and 3600 g/mm to maintain throughput at high grating angles (1200 g/mm at 1000 nm and above, 2400 g/mm at 500 nm and above, etc.)

Example Gratings Sets*

Spectroscopy	Grating 1	Blaze wavelength	Grating 2	Blaze wavelength	Grating 3	Blaze wavelength
UV set	600 g/mm	300 nm	1200 g/mm	300 nm	2400 g/mm	240 nm
High-resolution UV set	1200 g/mm	300 nm	2400 g/mm	240 nm	3600 g/mm	240 nm
UV-VIS-NIR set	1200 g/mm	300 nm	1200 g/mm	500 nm	1200 g/mm	750 nm
Visible set	300 g/mm	500 nm	600 g/mm	500 nm	1200 g/mm	500 nm
NIR set	600 g/mm	1000 nm	1200 g/mm	750 nm	1800 g/mm	1600 nm
SWIR set	150 g/mm	1600 nm	300 g/mm	1700 nm	600 g/mm	1600 nm

Microspectroscopy	Grating	Blaze wavelength	Range**	Spectral resolution
Microspectroscopy set-1	Mirror	Direct sample imaging (non-dispersed)		
	150 g/mm	500 nm	217 nm	1.0 nm
	600 g/mm	500 nm	52 nm	0.25 nm
Microspectroscopy set-2	Mirror	Direct sample imaging (non-dispersed)		
	300 g/mm	500 nm	107 nm	0.5 nm
	600 g/mm	500 nm	52 nm	0.25 nm
Microspectroscopy set-3	Mirror	Direct sample imaging (non-dispersed)		
	150 g/mm	500 nm	217 nm	1.0 nm
	1200 g/mm	500 nm	23.3 nm	0.11 nm

Raman spectroscopy	Grating	Blaze wavelength	Range†	Spectral resolution
532 nm Raman set-1	600 g/mm	500 nm	281 – 3937 cm^{-1}	8.13 cm^{-1}
	1200 g/mm	500 nm	307 – 2157 cm^{-1}	4.13 cm^{-1}
	1800 g/mm	500 nm	309 – 1405 cm^{-1}	2.64 cm^{-1}
532 nm Raman set-2	600 g/mm	500 nm	281 – 3937 cm^{-1}	8.13 cm^{-1}
	1200 g/mm	Holographic	307 – 2157 cm^{-1}	4.13 cm^{-1}
	1800 g/mm	Holographic	309 – 1405 cm^{-1}	2.64 cm^{-1}
633 nm Raman set-1	600 g/mm	500 nm	298 – 2910 cm^{-1}	5.84 cm^{-1}
	1200 g/mm	500 nm	304 – 1552 cm^{-1}	2.82 cm^{-1}
	1800 g/mm	500 nm	296 – 960 cm^{-1}	1.80 cm^{-1}
633 nm Raman set-2	600 g/mm	500 nm	298 – 2910 cm^{-1}	5.84 cm^{-1}
	1200 g/mm	Holographic	304 – 1552 cm^{-1}	2.82 cm^{-1}
	1800 g/mm	Holographic	296 – 960 cm^{-1}	1.80 cm^{-1}
785 nm Raman set-1	600 g/mm	750 nm	317 – 2008 cm^{-1}	3.79 cm^{-1}
	1200 g/mm	750 nm	304 – 1042 cm^{-1}	1.78 cm^{-1}
	1800 g/mm	700 nm	306 – 617 cm^{-1}	0.96 cm^{-1}
785 nm Raman set-2	600 g/mm	750 nm	317 – 2008 cm^{-1}	3.79 cm^{-1}
	1200 g/mm	Holographic	304 – 1042 cm^{-1}	1.78 cm^{-1}
	1800 g/mm	Holographic	306 – 617 cm^{-1}	0.96 cm^{-1}

** Suggested grating sets. Build your own sets or contact us to help define the best gratings for your application.*
*** Wavelength region captured in a single exposure using a Princeton Instruments ProEM-HS:1K (10.2 mm sensor width).*
† Raman scatter dispersed across a Princeton Instruments PIXIS:400BRX (26.8 mm sensor width).

Grating Efficiency Curves