SPINOR Gratings 11-Dec-03 Elmore

ASP 316 316l/mm grating, 63.46 deg. Blaze, 50 micron slit, 8.5 micron spectral pixels, 19.75 micron spatial pixels, 1219mm camera lens, 244 spectral pixels, 230 spatial pixels

Wavelength (nm)	nm	517	589	630	700	854	1080	1565
Reflection Angle	degrees	64.66		63.85	61.07		54.73	
Slit Spatial Sample	arc-seconds	0.38		0.38	0.38		0.38	
Pixel Spatial Sample		0.37		0.37	0.37		0.37	
Spectral Sample	pm	0.86		1.08	1.33		2.54	
Spectral Resolution	pm	2.354		2.93	3.376		5.939	
Spatial Field	arc-seconds	90.3		90.3	90.3		90.3	
Spectral Field	nm	0.22		0.277	0.341		0.652	
Quantum Efficiency		0.19		0.38	0.31		0.02	
Grating Efficiency		0.928	0	0.983	0.855	0	0.469	0
ASP efficiency+		0.38	0.00	1.00	0.87	0.00	0.06	0.00

SPINOR 316 316l/mm grating, 63.46 deg. Blaze, 40 micron slit, 12 micron spectral pixels, 12 micron spatial pixels, 1000mm camera lens, 256 spectral pixels, 500 spatial pixels

Wavelength (nm)	nm	517	589	630	700	854	1080*	1565*
Reflection Angle	degrees	64.66		63.85	61.07		54.763	
Slit Spatial Sample	arc-seconds	0.3		0.3	0.3		0.3	
Pixel Spatial Sample	arc-seconds	0.27		0.27	0.27		0.27	
Spectral Sample	pm	1.477		2.02	2.296		4.381	
Spectral Resolution	pm	2.32		3.02	3.442		6.341	
Spatial Field	arc-seconds	160.5		160.5	160.5		160.5	
Spectral Field	nm	0.378		0.516	0.588		1.122	
Quantum Efficiency		0.74	0.8	0.82	0.8	0.45	0.4	0.6
Grating Efficiency		0.928	0	0.981	0.855	0	0.469	0
ASP 630 Eff.		1.45	0.00	2.32	2.24	0.00	1.17	0.00

SPINOR 308.6 308.57l/mm grating, 68.0 deg. Blaze, 40 micron slit, 12 micron spectral pixels, 12 micron spatial pixels, 1000mm camera lens, 256 spectral pixels.

Wavelength (nm)	nm	517	589	630	**656**	854	1080*	1565*
Reflection Angle	degrees		62.91		63.57	66.62		
Slit Spatial Sample	arc-seconds		0.3		0.3	0.3		
Pixel Spatial Sample	arc-seconds		0.27		0.27	0.27		
Spectral Sample	pm		1.771		1.923	2.205		
Spectral Resolution	pm		2.499		2.775	3.529		
Spatial Field	arc-seconds		160.5		160.5	160.5		
Spectral Field	nm		0.453		0.492	0.564		
Quantum Efficiency		0.74	0.8		0.8	0.45	0.4	0.6
Grating Efficiency		0	0.497	0	0.617	0.923	0	0
ASP 630 Eff.		0.00	1.01	0.00	1.36	1.31	0.00	0.00

SPINOR 31.6 31.6l/mm grating, 63.8 deg. Blaze, 40 micron slit, 12 micron spectral pixels, 12 micron spatial pixels, 1000mm camera lens, 256 spectral pixels..

Wavelength (nm)	nm	517	589	630	700	**850**	1080*	1565*
Reflection Angle	degrees	64.31	62.85	63.57	63.47	64.45	61.96	62.02
Slit Spatial Sample	arc-seconds	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Pixel Spatial Sample	arc-seconds	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Spectral Sample	pm	1.496	1.805	2.04	2.093	2.444	3.433	4.948
Spectral Resolution	pm	2.317	2.738	29.48	3.267	3.995	5.559	8.911
Spatial Field	arc-seconds	160.5	160.5	178.8	160.5	160.5	160.5	160.5
Spectral Field	nm	0.383	0.462	0.37	0.536	0.626	0.879	1.267
Quantum Efficiency		0.74	0.8	0.82	0.8	0.45	0.4	0.6
Grating Efficiency		0.569	0.114	0.912	0.883	0.713	0.059	0.434
ASP 630 Eff.		0.90	0.24	2.18	2.11	1.12	0.12	1.84

SPINOR 308.57 398.57l/mm grating, 52.0 deg. Blaze, 40 micron slit, 12 micron spectral pixels, 12 micron spatial pixels, 1000mm camera lens, 256 spectral pixels..

Wavelength (nm)	nm	517	589	630	656	854	1080*	1565*	630[&]
Reflection Angle	degrees	53.92	57.97	50.15	56.31	52.51	61.99	41.34	50.15
Slit Spatial Sample	arc-seconds	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.19
Pixel Spatial Sample	arc-seconds	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.16
Spectral Sample	pm	2.29	2.292	3.115	2.696	3.945	3.652	5.732	1.87
Spectral Resolution	pm	3.578	3.85	4.691	4.439	6.302	7.247	9.545	3.04
Spatial Field	arc-seconds	160.5	160.5	178.8	160.5	160.5	160.5	160.5	90.33
Spectral Field	nm	0.383	0.462	0.37	0.536	0.626	0.879	1.267	0.222
Quantum Efficiency		0.74	0.8	0.82	0.8	0.45	0.4	0.6	0.82
Grating Efficiency		0.878	0.451	0.905	0.691	0.984	0.439	0.543	0.905
ASP 630 Eff.		2.12	1.18	3.30	2.13	2.49	0.92	2.67	0.74

Notes:

* 1083 and 1564 (except for ASP) use IR camera with 18 micron pixels and 1500mm camera lens

656 & 850 alternative wavelengths of possible interest and non-zero efficiency

+Efficiency relative to ASP at 630nm accounts for spatial and spectral pixel sample size, grating efficiency, and detector quantum efficiency. Change in solar flux with wavelength is not included.

[&]25 micron slit and 1666mm camera lens