Pre-Delivery Resonon Test Report

Identification Data	
Date	October 17th, 2016
Resonon SN	100124-6
Instrument Name	RS6
Andor Camera SN	CCD-16344

Configuration	
Filters Installed	
1. 540-900 nm bandpass filter. See Figure 1.	
Sensors Installed	
1. 10K Ohm Thermister: Digikey part # 615-1010-ND; 3 units. 2. Humidity Sensor: Digikey part # 480-3294-1-ND	
Fiber bundle info: Leoni 800 µm core fibers. See Figure 2.	
Grating: Aug. 2015 batch. See Fig. 3.	

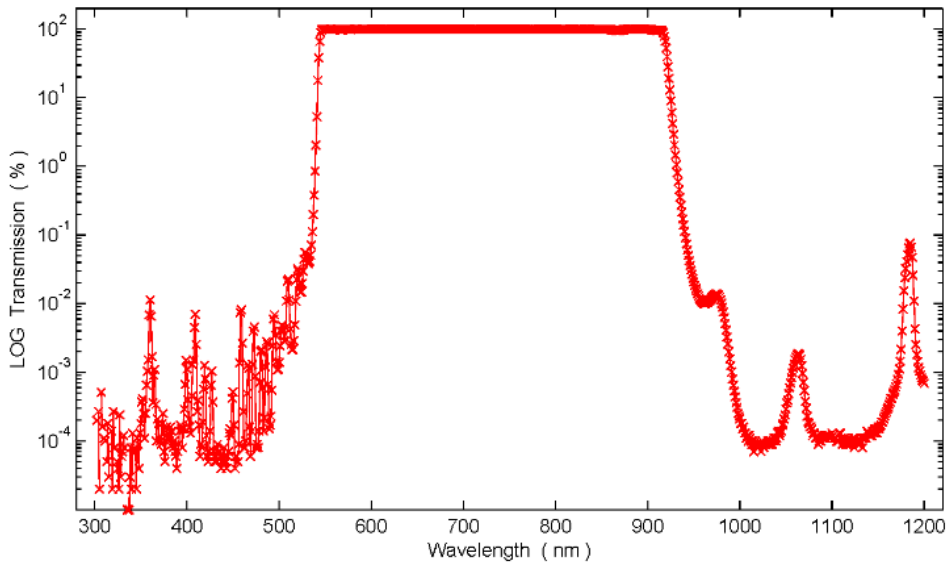


Figure 1: Bandpass filter on front face of 1st prism

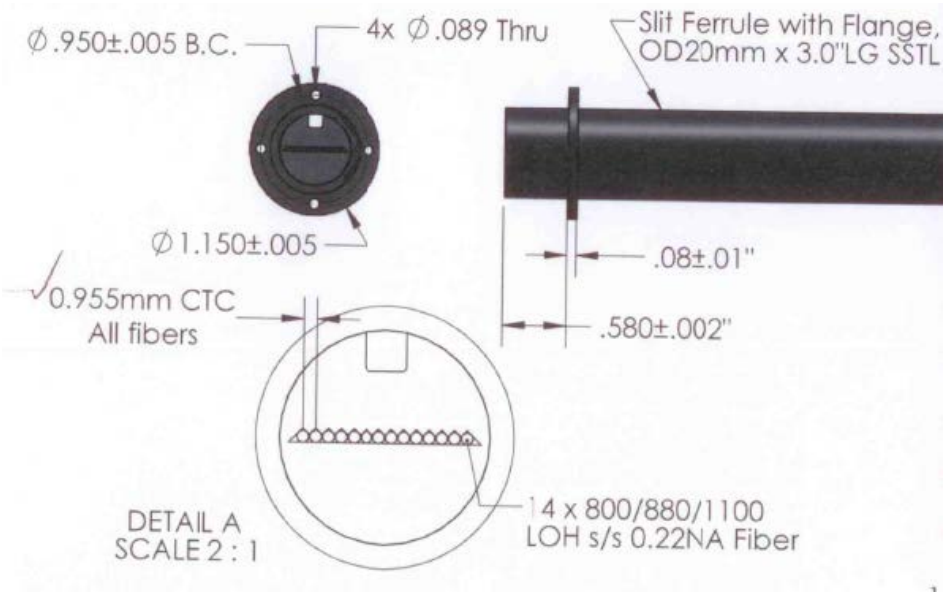
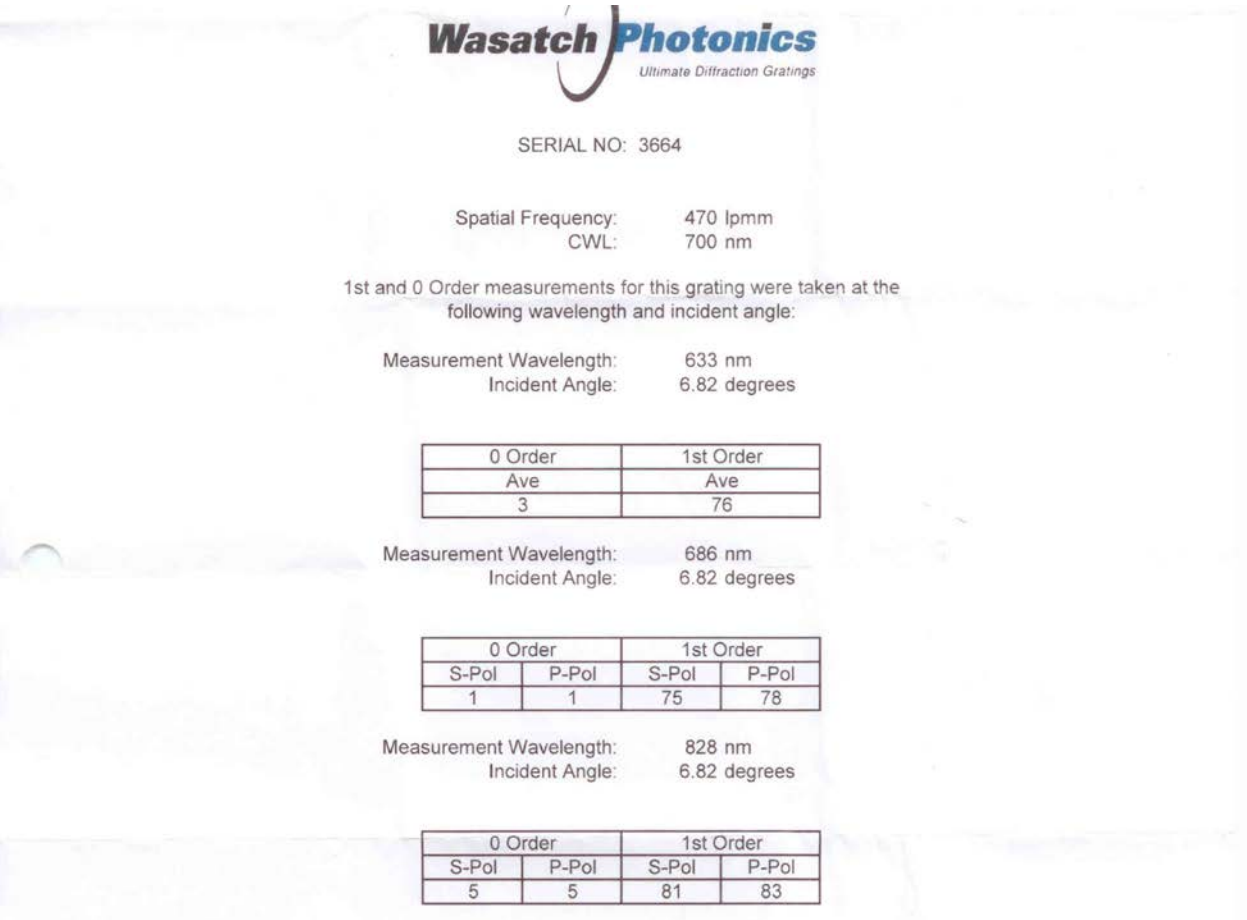


Figure 2: Leoni Fiber details



Wasatch Photonics
Ultimate Diffraction Gratings

SERIAL NO: 3664

Spatial Frequency: 470 lpmm
CWL: 700 nm

1st and 0 Order measurements for this grating were taken at the following wavelength and incident angle:

Measurement Wavelength: 633 nm
Incident Angle: 6.82 degrees

0 Order	1st Order
Ave	Ave
3	76

Measurement Wavelength: 686 nm
Incident Angle: 6.82 degrees

0 Order		1st Order	
S-Pol	P-Pol	S-Pol	P-Pol
1	1	75	78

Measurement Wavelength: 828 nm
Incident Angle: 6.82 degrees

0 Order		1st Order	
S-Pol	P-Pol	S-Pol	P-Pol
5	5	81	83

Figure 3: Grating efficiency

Test Summary	
Smile (Peak to Trough)	
@ 587 nm	.4 pixels (See Fig. 4)
@ 705nm	.3 pixels (See Fig. 5)
Keystone (Peak to Trough)	
Channel 1	2 pixels (See Fig. 6)
Channel 7	2.5 pixels (See Fig. 7)
Channel14	4 pixels (See Fig. 8)
Spectral Resolution (FWHM)	
@ 587 nm	~1.1 nm (See Fig. 9)
@ 705 nm	~1.1 nm (See Fig. 9)
Stability (“shake” test)	
2 pixel shift spatially. See Table 2	

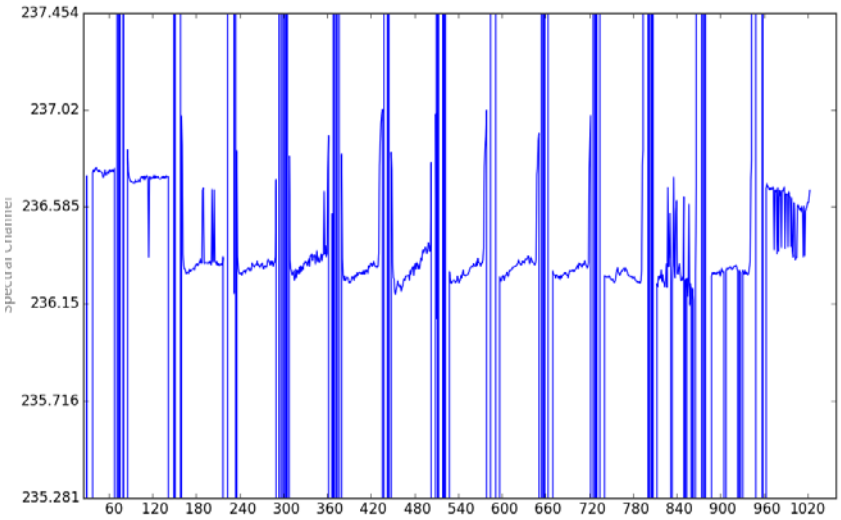


Figure 4: Smile at 587 nm. Horizontal axis is spatial channels and vertical axis is spectral.

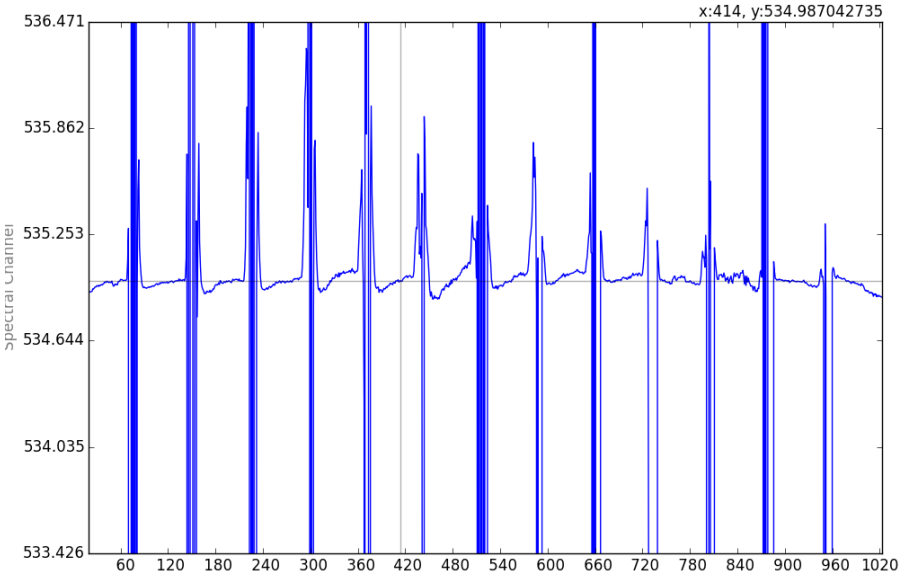


Figure 5: Smile at 705 nm.

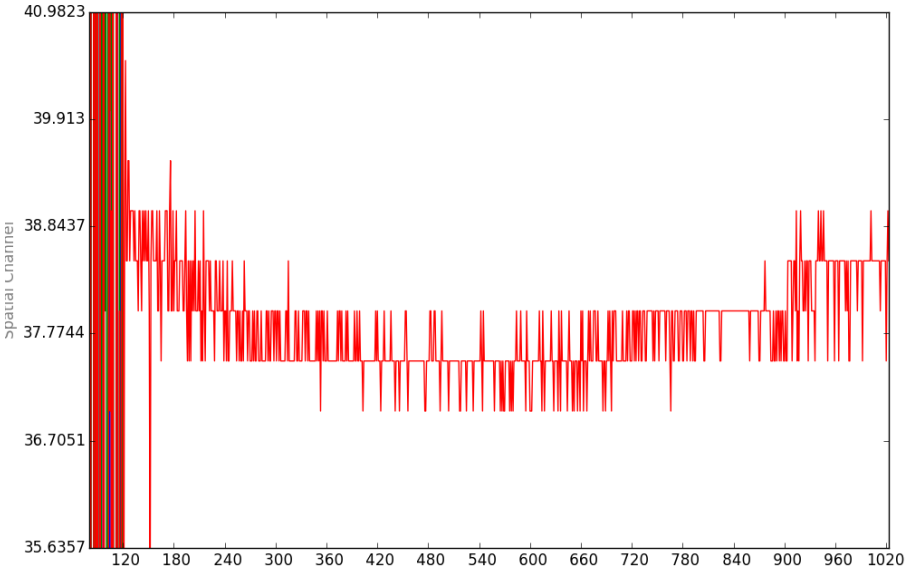


Figure 6: Channel 1 keystone. Horizontal axis is spectral channels and vertical axis is spatial.

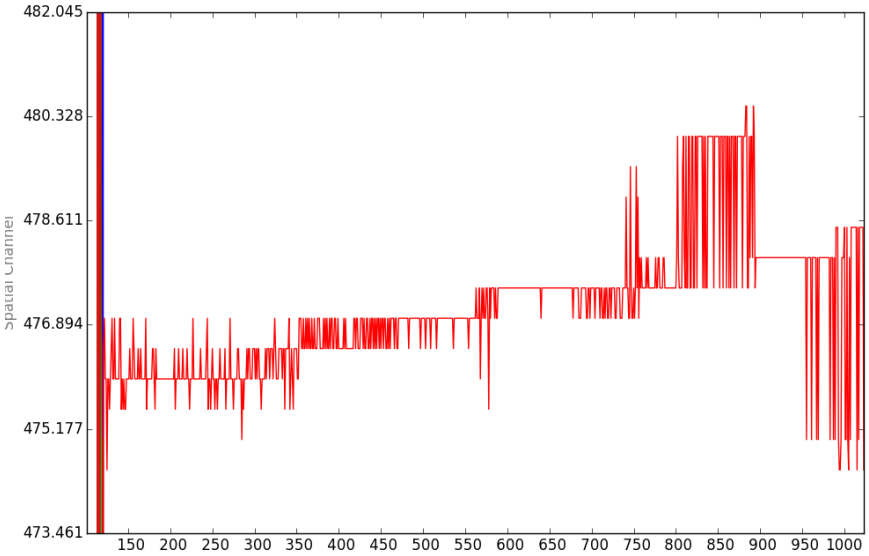


Figure 7: Channel 7 tilt

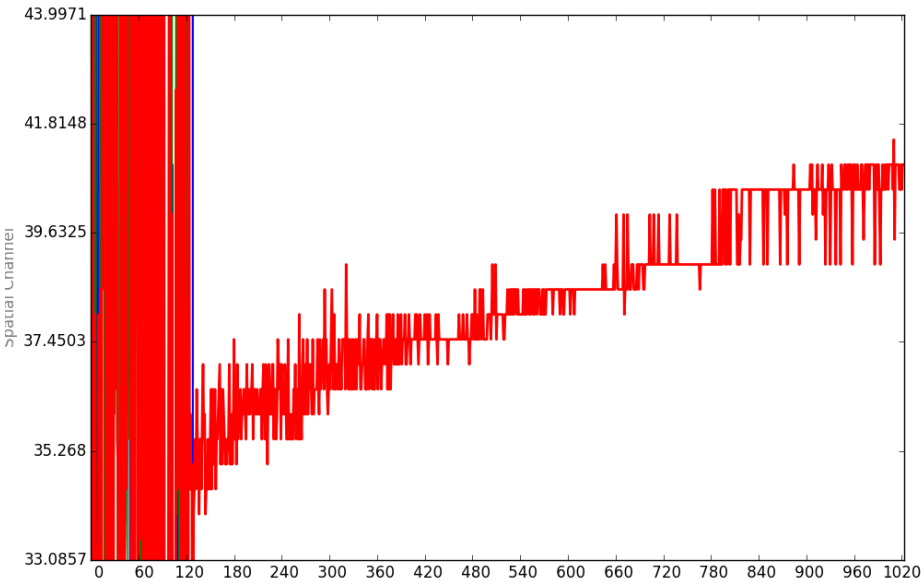


Figure 8: Channel 14 keystone.

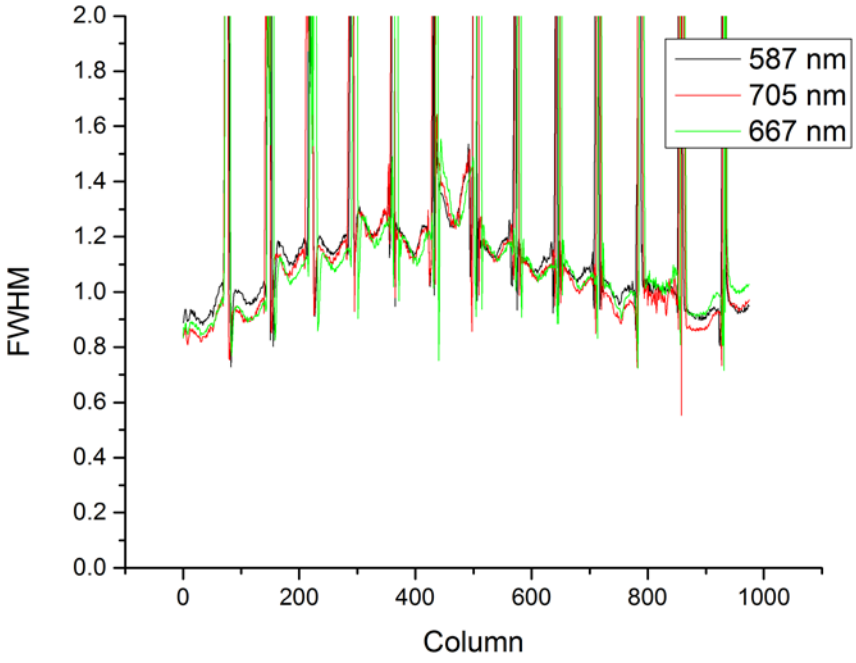


Figure 9: Spectral widths vs. spatial position. Note: A bug was found that made this fit differ from manual fitting by x2 in previous documents. The fixed fit is represented here, so these widths will look x2 larger than previous graphs.

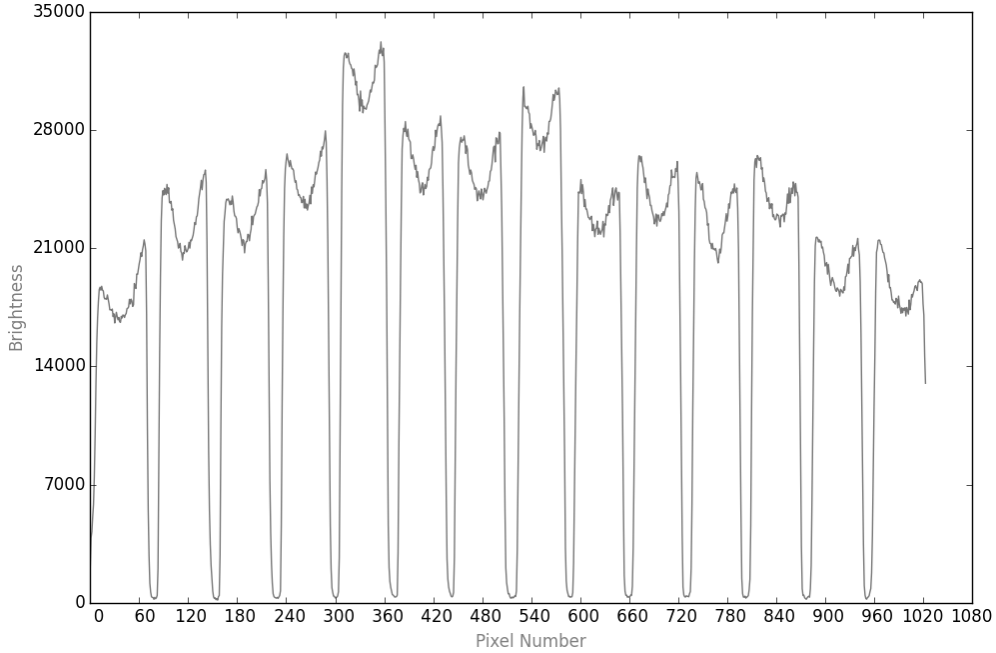


Figure 10: Cross section of fibers.

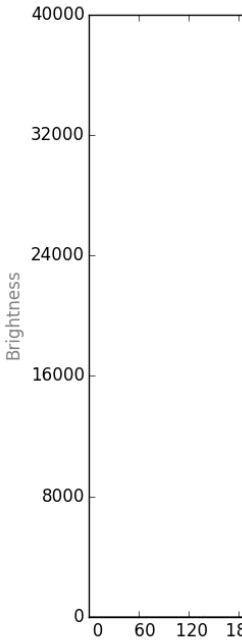


Table 2: Results of shaker test before and after a four hour "shake" on the shaker table.						
	Pre Shake Pixel Position	Pre Shake FWHM	Post Shake Pixel Position	Post Shake FWHM	Change in Position	Change in FWHM
587 nm	236	~1 nm	236	~1 nm	0	0

667 nm	438	~1 nm	438	~1 nm	0	0
705 nm	535	~1 nm	535	~1nm	0	0

Figure 11: Cross section of channel 7.