

## Pre-Delivery Resonon Test Report

Identification Data	
Date	November 28th, 2016
Resonon SN	100124-5
Instrument Name	RS5
Andor Camera SN	CCD-16343

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 $\mu\text{m}$ core fibers. See Figure 2.	
Grating: Aug. 2015 batch. See Fig. 3.	

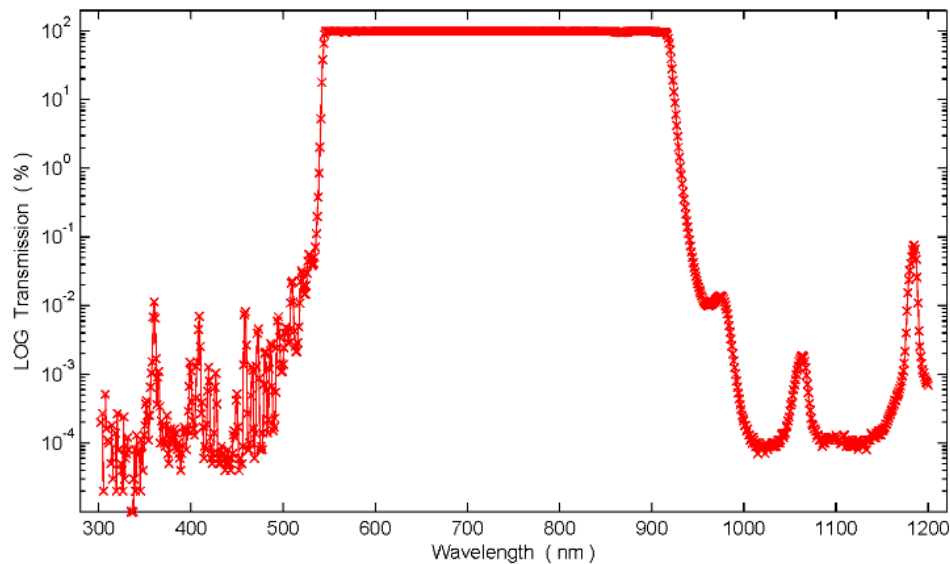


Figure 1: Bandpass filter on front face of 1st prism

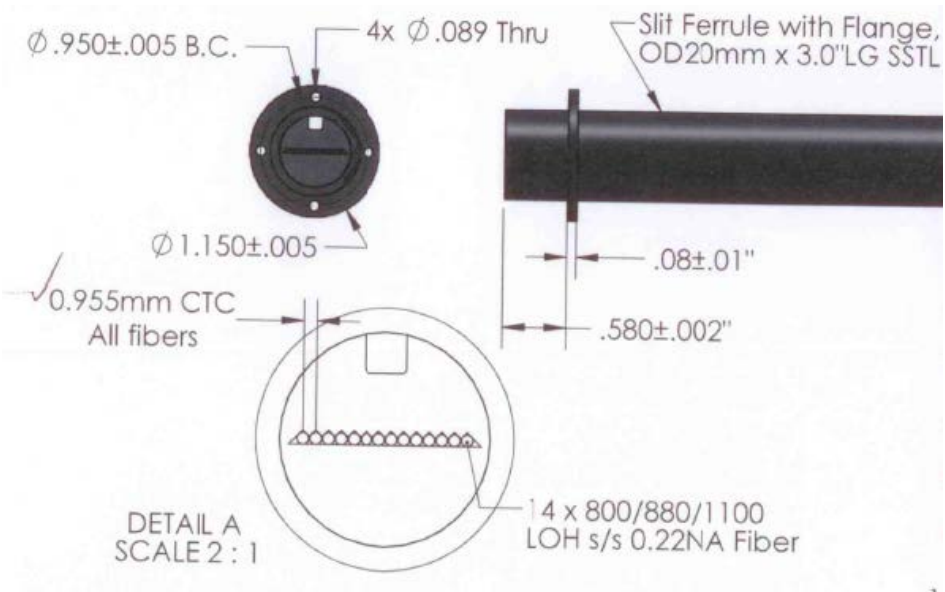


Figure 2: Leoni Fiber details



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

Test Summary	
Smile (Peak to Trough)	
@ 587 nm	.2 pixels (see Fig. 4)
@ 705nm	.5 pixels (see Fig. 5)
Keystone (Peak to Trough)	
Channel 1	1.5 pixels (See Fig 6)
Channel 7	2 pixels (See Fig. 7)
Channel14	6.5 pixels (See Fig. 8)
Spectral Resolution (FWHM)	
@ 587 nm	~1 nm (See Fig. 9)
@ 705 nm	~1 nm (See Fig. 9)
Stability ("shake" test)	
~1 pixel shift spatially, 0 spectral. (See Table 2 for FWHM data)	

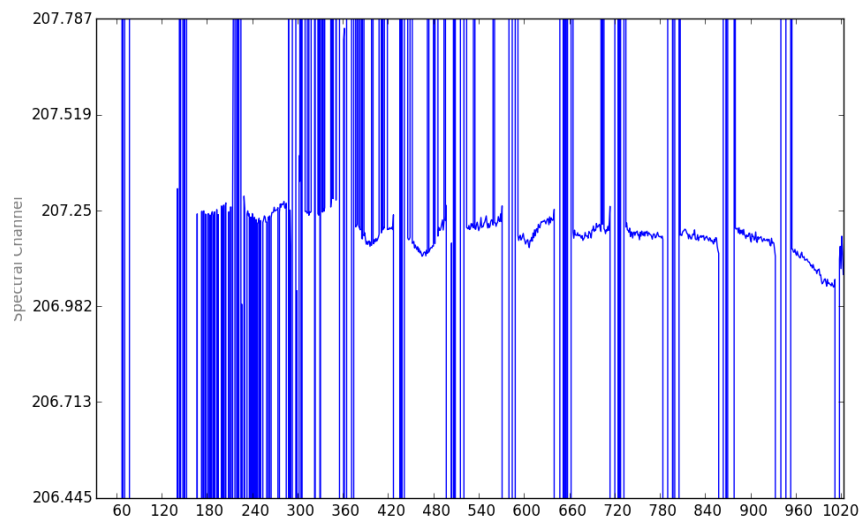


Figure 4: Smile at 587 nm. Horizontal axis is spatial channels and vertical axis is spectral.

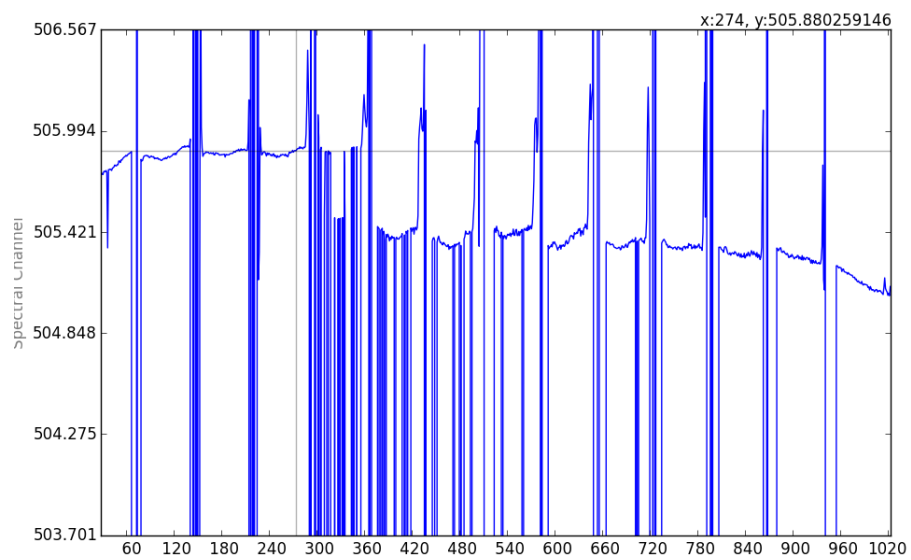


Figure 5: Smile at 705 nm.

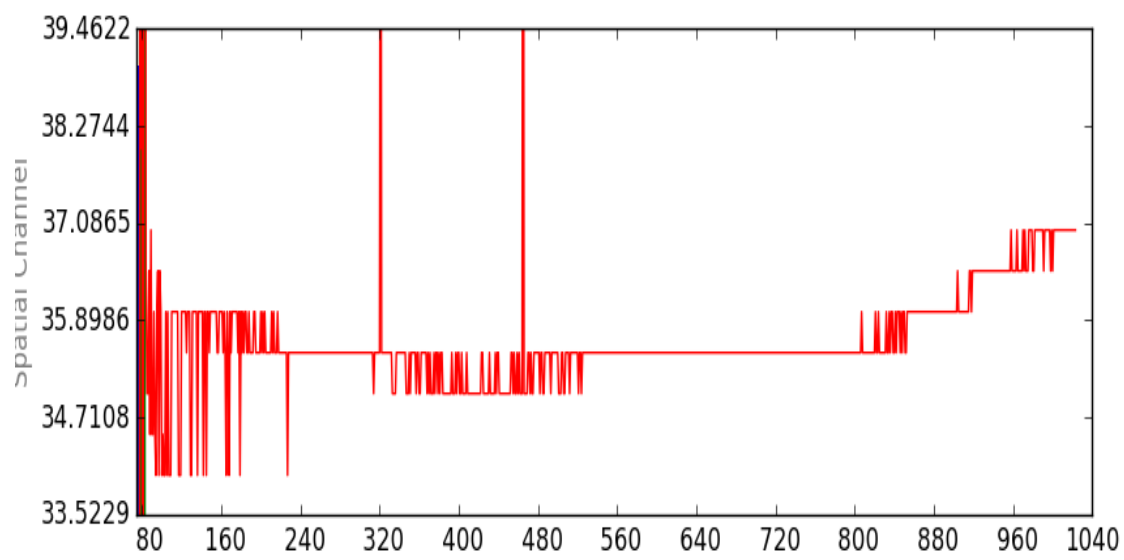


Figure 6: Channel 1 keystone. Horizontal axis is spectral channels and vertical axis is spatial.

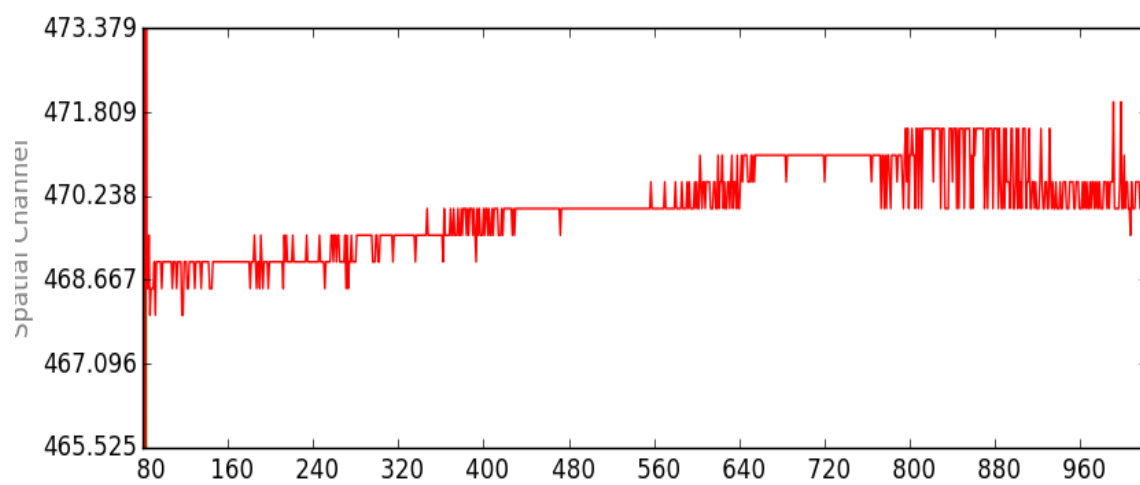


Figure 7: Channel 7 tilt

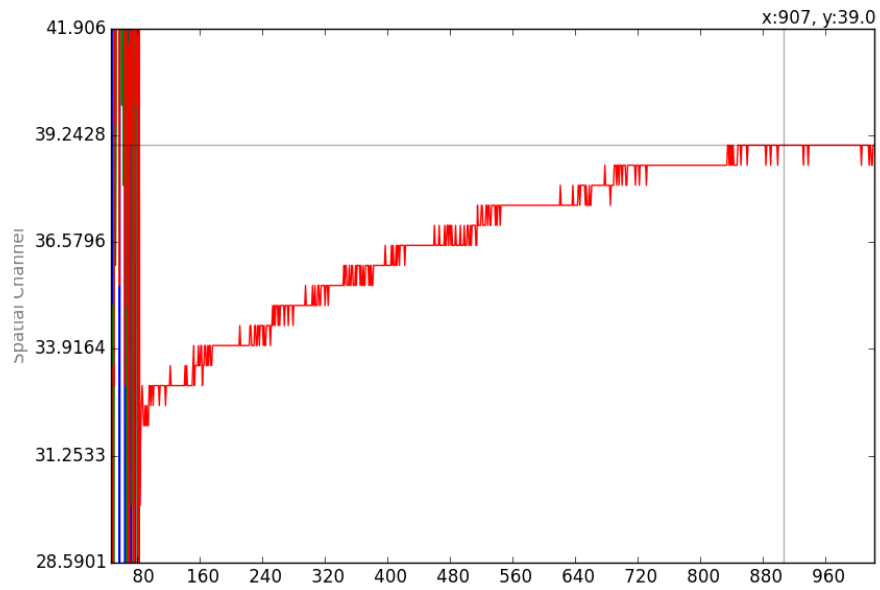


Figure 8: Channel 14 keystone.

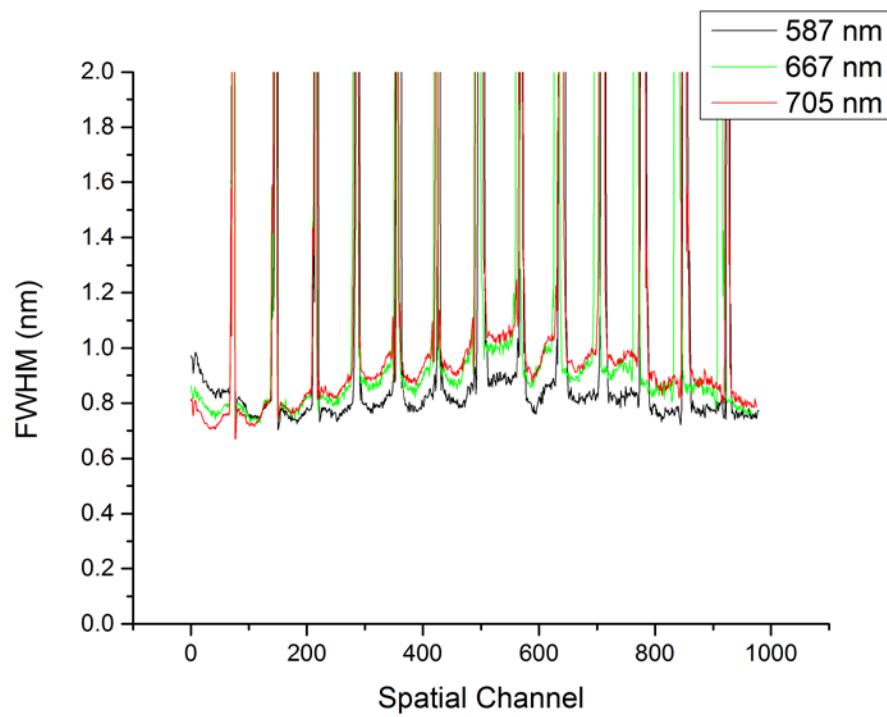
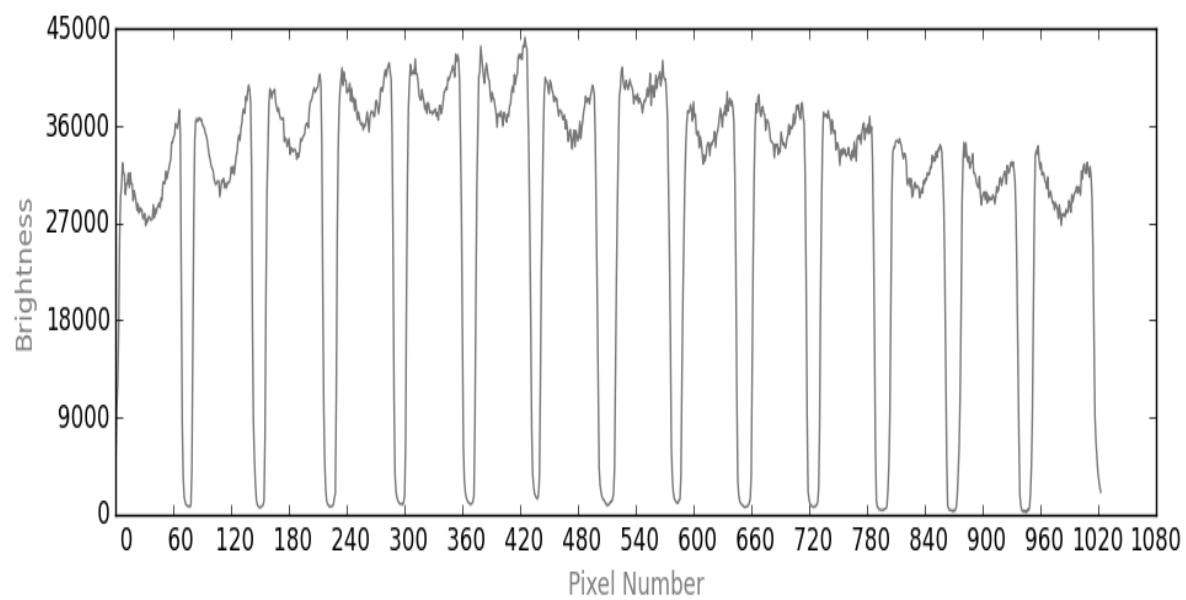
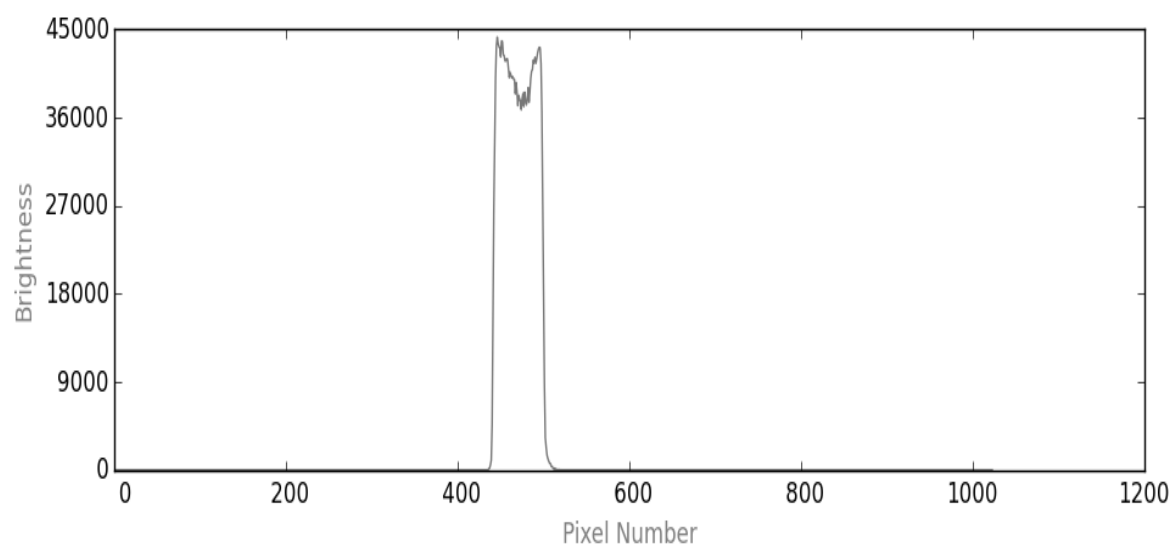


Figure 9: Spectral widths vs. spatial position.



*Figure 10: Cross section of fibers.*



*Figure 11: Cross section of channel 7.*

<b>Table 2: Results of shaker test before and after a four hour “shake” on the shaker table.</b>						
	Pre Shake Pixel Position	Pre Shake FWHM	Post Shake Pixel Position	Post Shake FWHM	Change in Position	Change in FWHM
587 nm	207	~1 nm	207	~1 nm	0	0
667 nm	409	~1 nm	409	~1 nm	0	0
705 nm	505	~1 nm	505	~1nm	0	0