

Pre-Delivery Resonon Test Report

Identification Data	
Date	April 1, 2016
Resonon SN	100124-1
Configuration	Cfg001
Instrument Name	RS1
Andor Camera SN	CCD-17879

Configuration	
Filters Installed	
1. 540-900 nm bandpass filter. See Fig. 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 μ m core fibers. See Fig. 2.	
Grating: Aug. 2015 batch. See Fig. 3.	

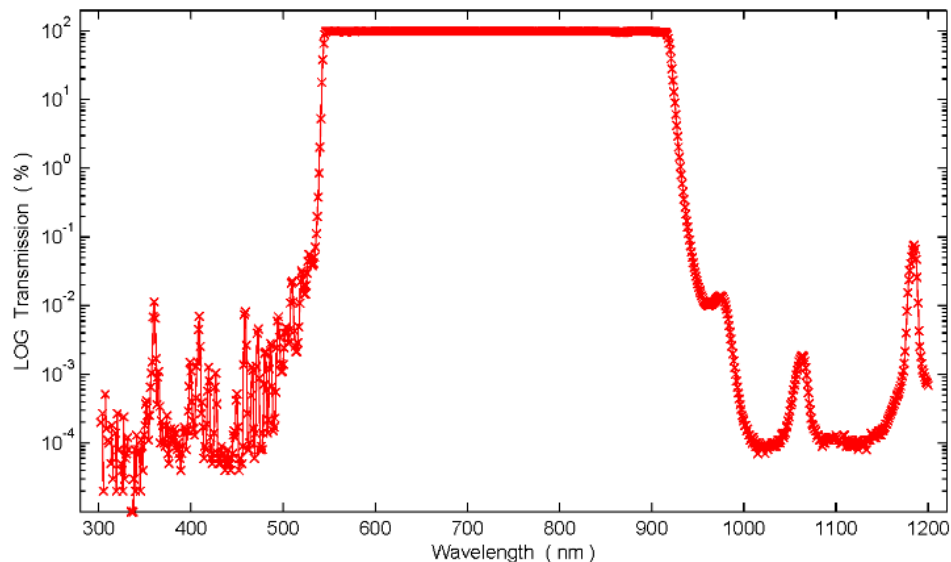


Figure 1: Bandpass filter on front face of 1st prism. This is Chroma Technology filter Batch 294787, dated 2015-08-10.

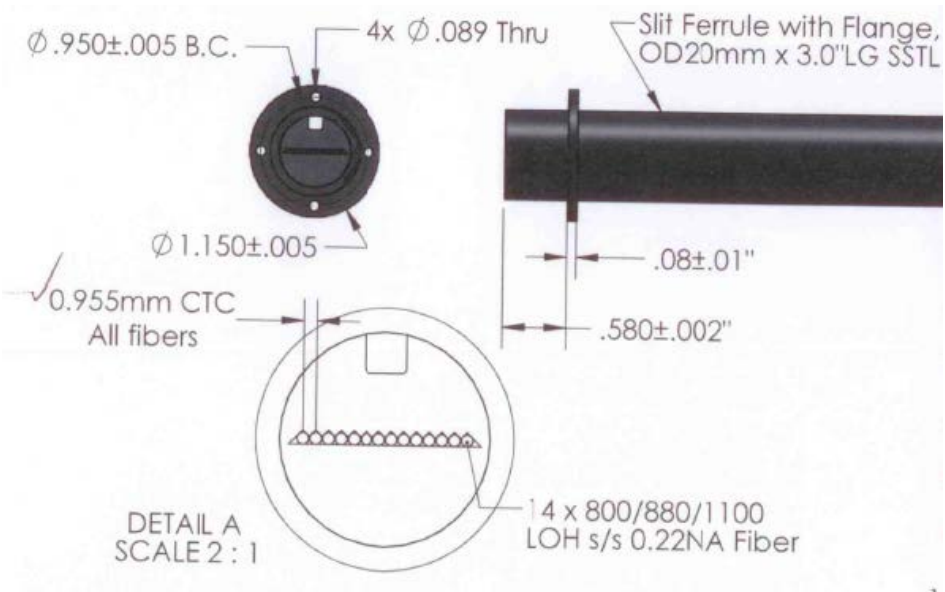


Figure 2: Leoni Fiber details

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

Figure 3: Grating efficiency.

Table 1. Test Summary	
Smile (Peak to Trough)	
@ 587 nm	0.25 pixels (See Fig. 4.)
@ 705 nm	0.50 pixels (See Fig. 5.)
Keystone (Peak to Trough)	
Channel 1	0.5 pixels (See Fig. 6.)
Channel 7	0.5 pixels (See Fig. 7.)
Channel 14	5.0 pixels (See Fig. 8.)
Spectral Resolution (FWHM)	
@ 587 nm	<0.7 nm (See Fig. 9.)
@ 705 nm	< 0.6 nm (See Fig. 9.)
Spatial Resolution	
See Figs. 10 and 11.	
Stability ("shake" test)	
<0.1 nm shift. See Table 2	

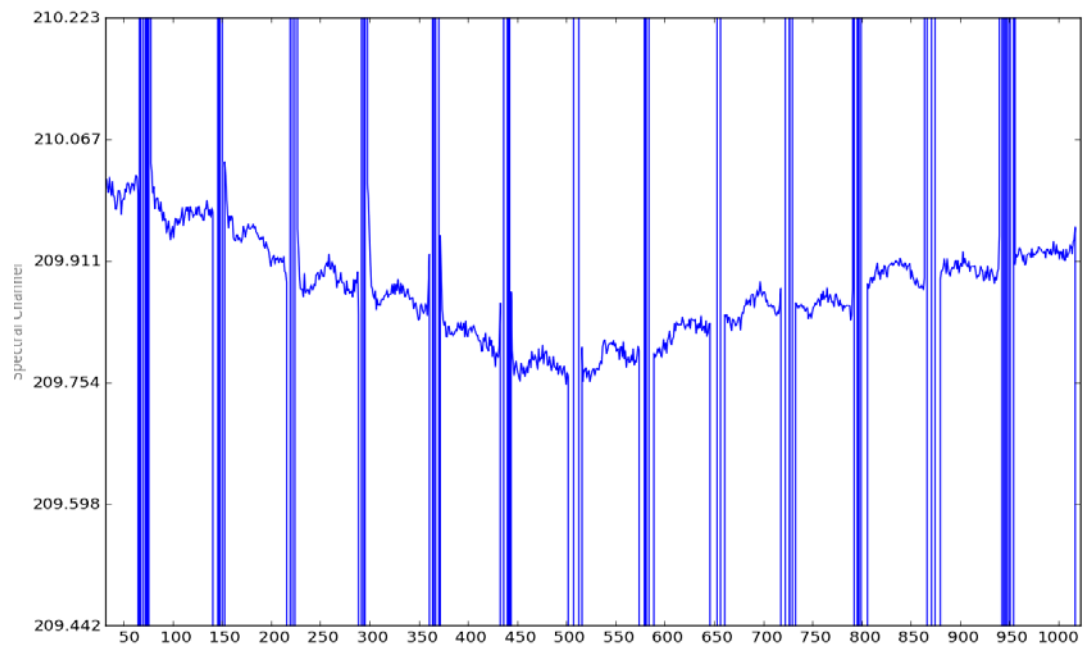


Figure 4: Smile at 587 nm. Horizontal axis is spatial channels and vertical axis is spectral.

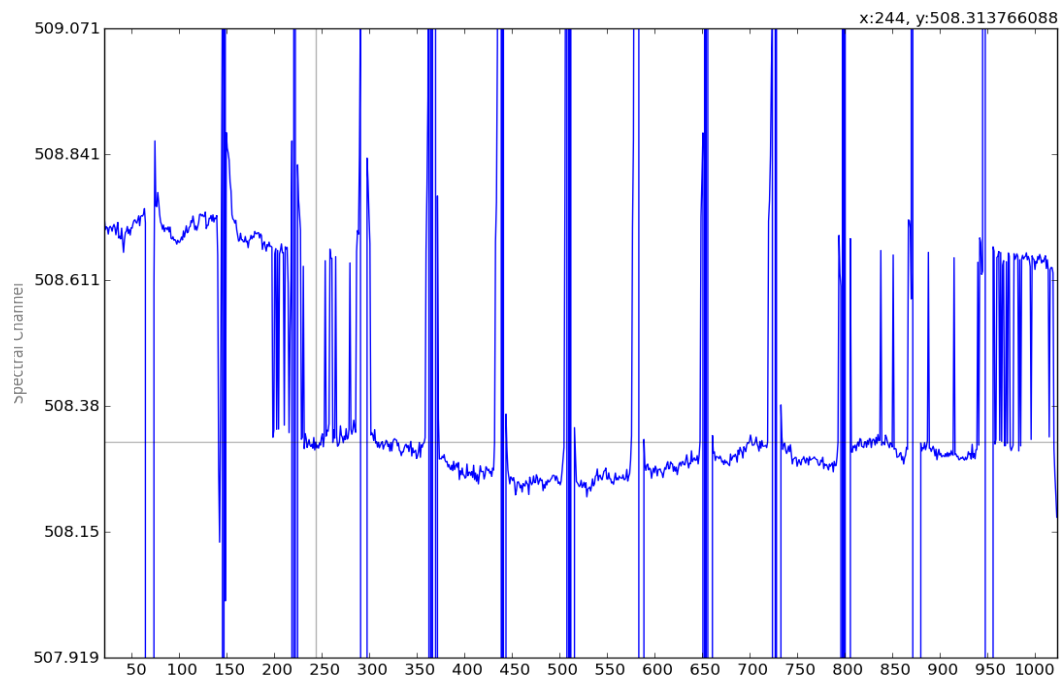


Figure 5: Smile at 705 nm.

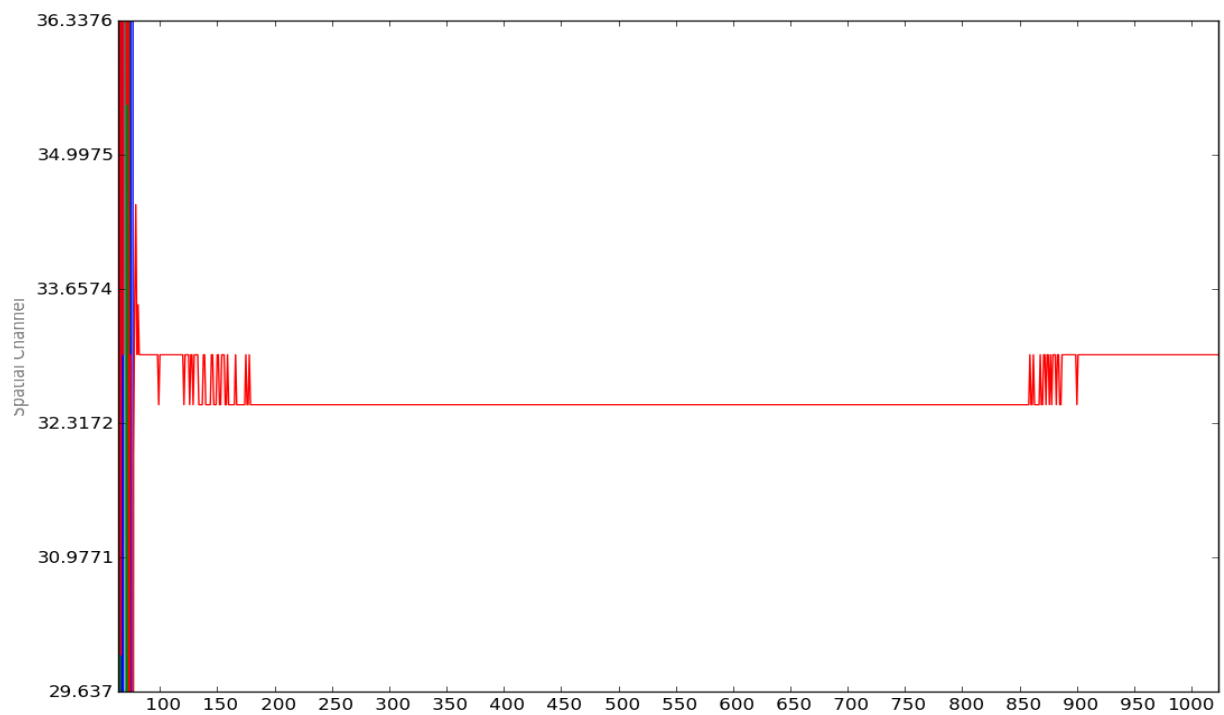


Figure 6: Channel 1 keystone. Horizontal axis is spectral channels and vertical axis is spatial.

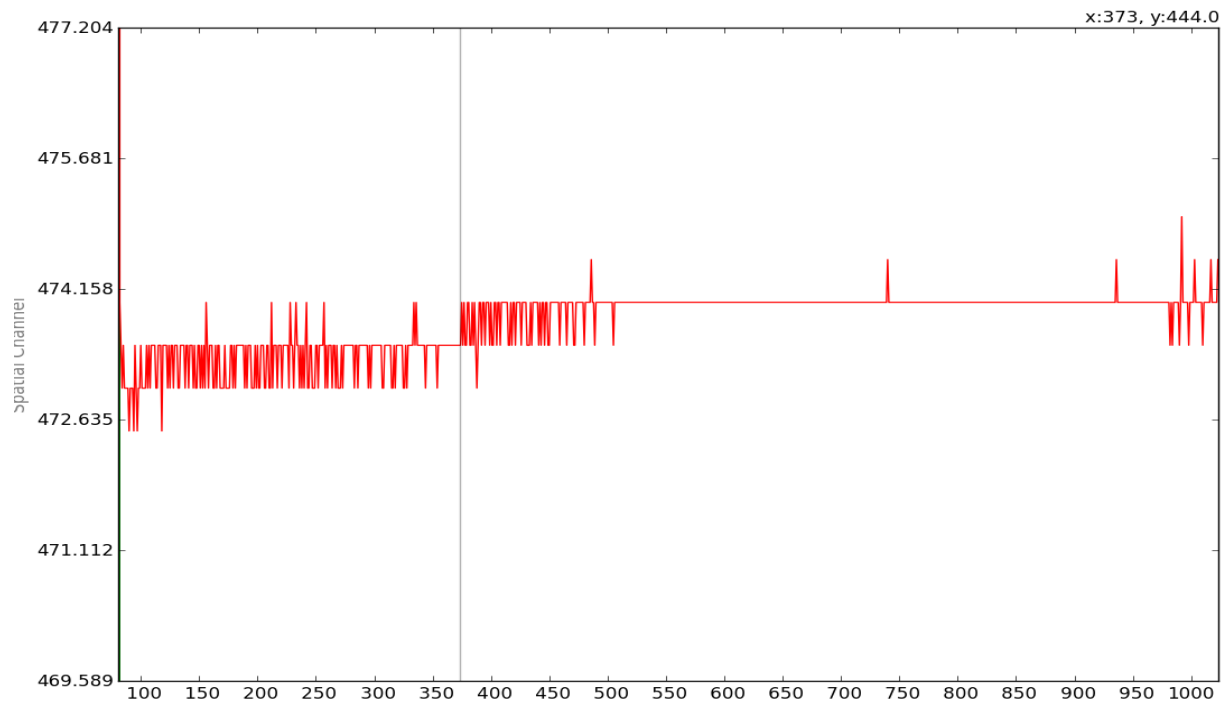


Figure 7: Channel 7 tilt.

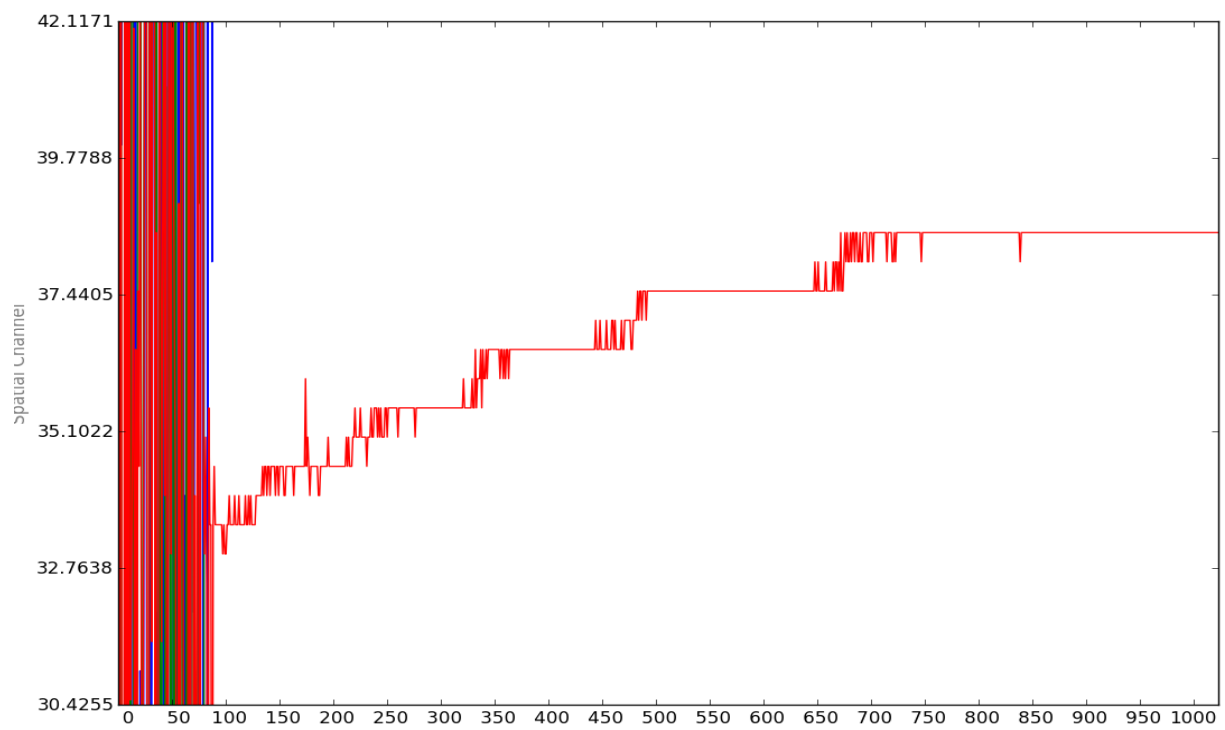


Figure 8: Channel 14 keystone.

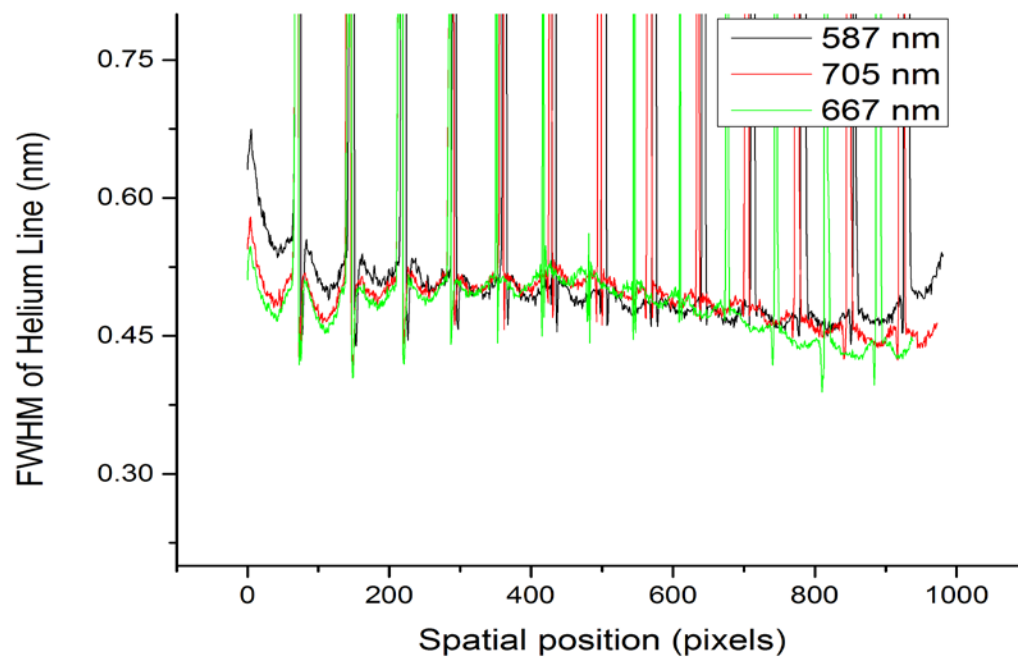


Figure 9: Spectral widths vs. spatial position.

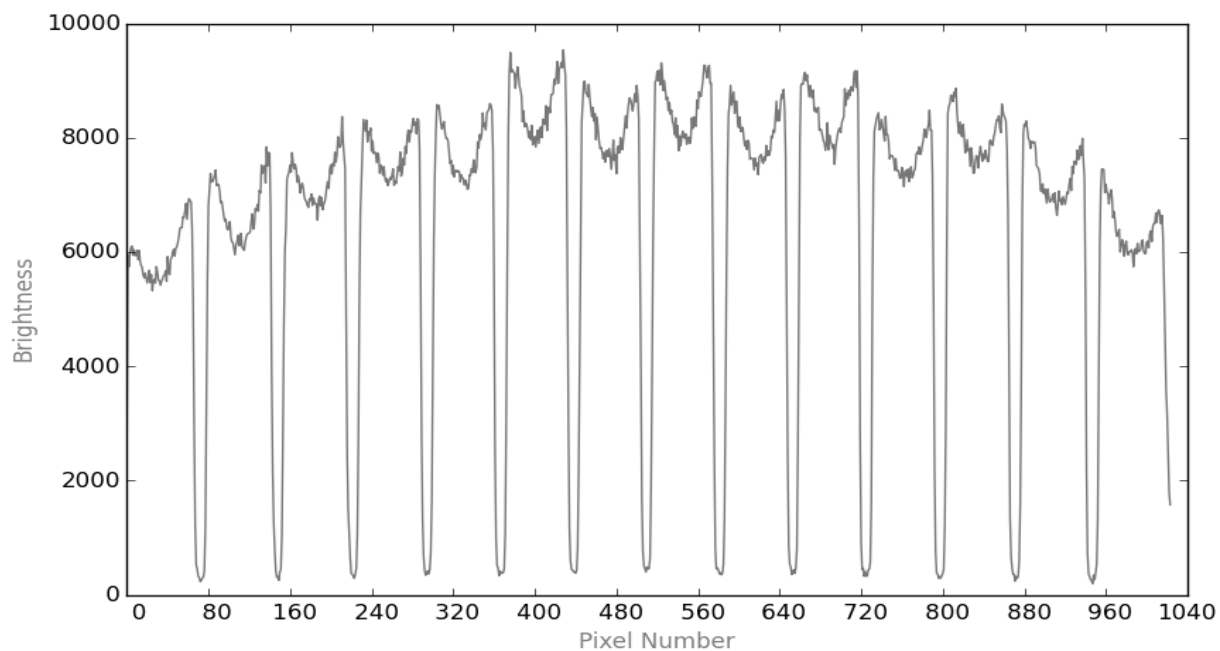


Figure 10: Cross section of fibers.

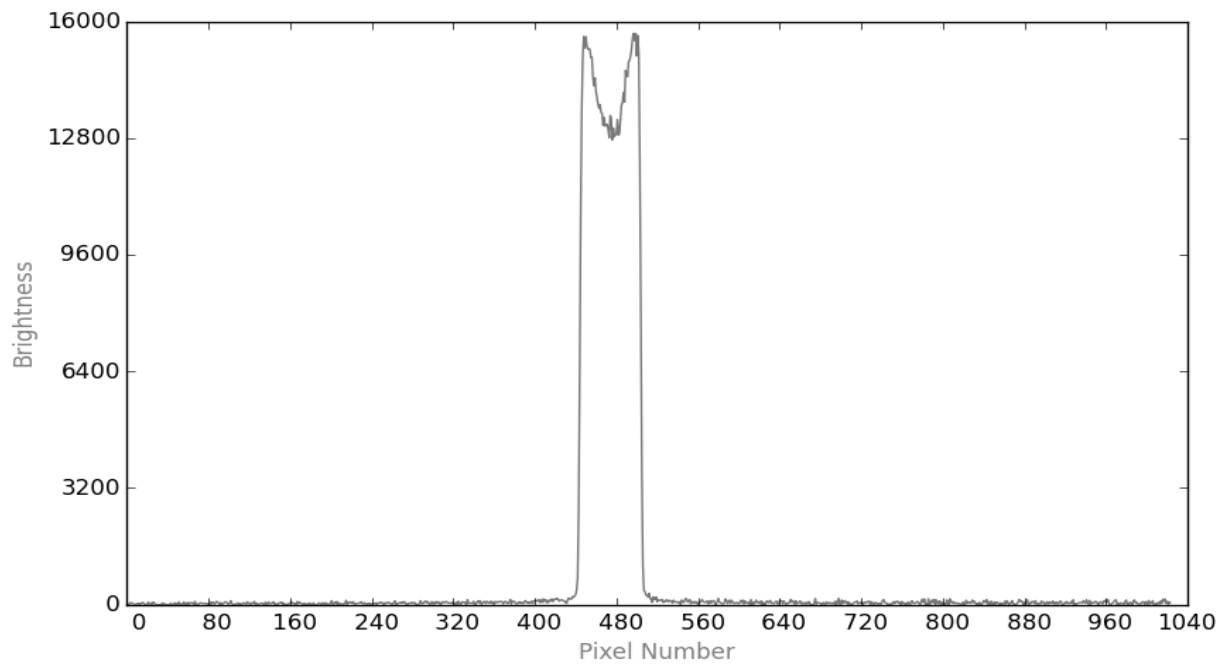


Figure 3: Cross section of channel 7.

Table 2: Results of shaker test before and after a four hour “shake” on the shaker table.

	Pre Shake Pixel Position	Post Shake Pixel Position	Post Shake FWHM	Change in Position
587 nm	210.2	209.9	.7 nm	.3
667 nm	412.2	412.0	.6 nm	.2
705 nm	508.7	508.5	.6 nm	.2