

Pre-Delivery Resonon Test Report

Identification Data	
Date	April 26, 2016
Resonon SN	100114-4
Configuration	Cfg001
Instrument Name	BS4
Andor Camera SN	CCD-17881

Configuration	
Filters Installed	
1. Filter on front face of front prism: See Fig. 1a. 2. Filter on rear tilted substrate: See Fig. 1b.	
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: Dec. 2014 batch. See Fig 3.	

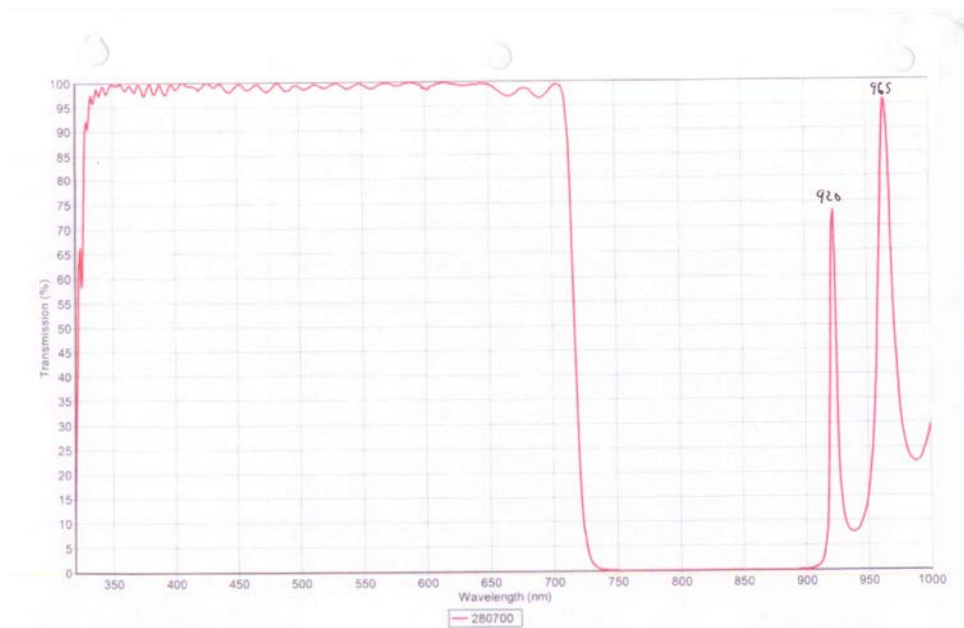


Figure 1a: Bandpass filter on front face of front prism. This is Chroma Technology filter Batch 280700, dated 2014-07-07.

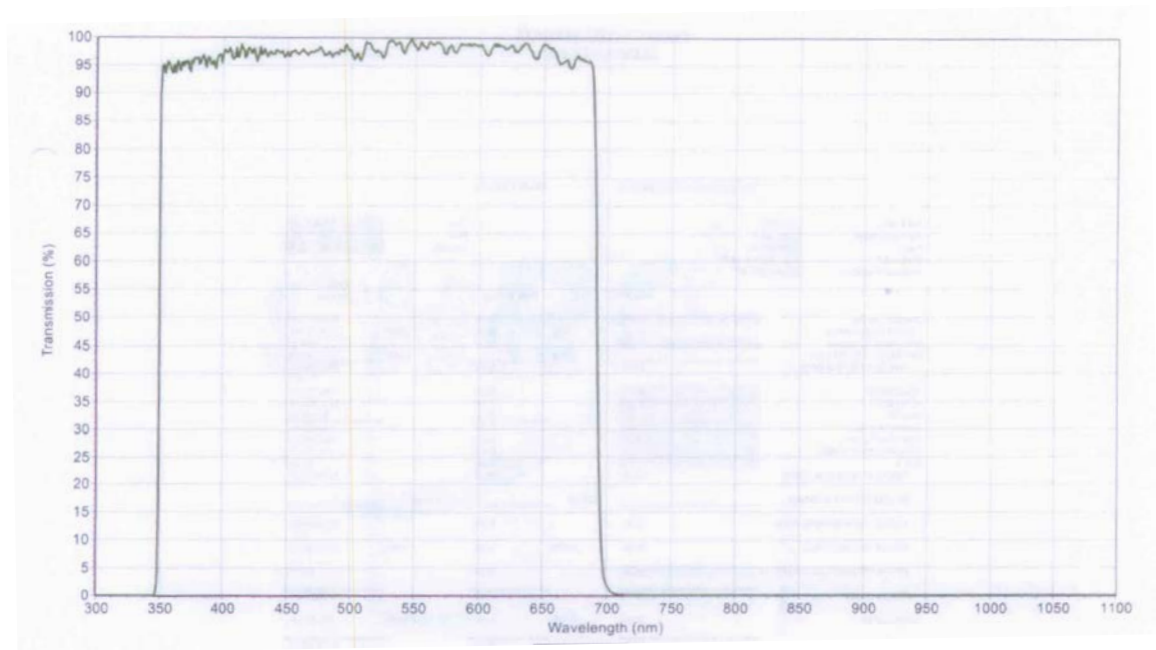


Figure 2b: Bandpass filter on rear tilted substrate. This is Chroma Technology filter Batch 300205, dated 2015-12-22.

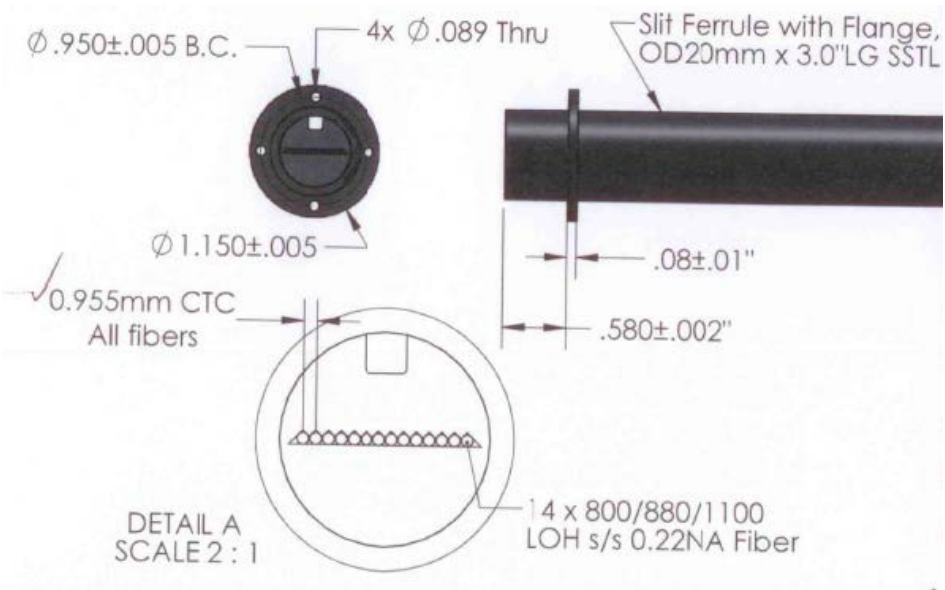


Figure 3: Leoni Fiber details

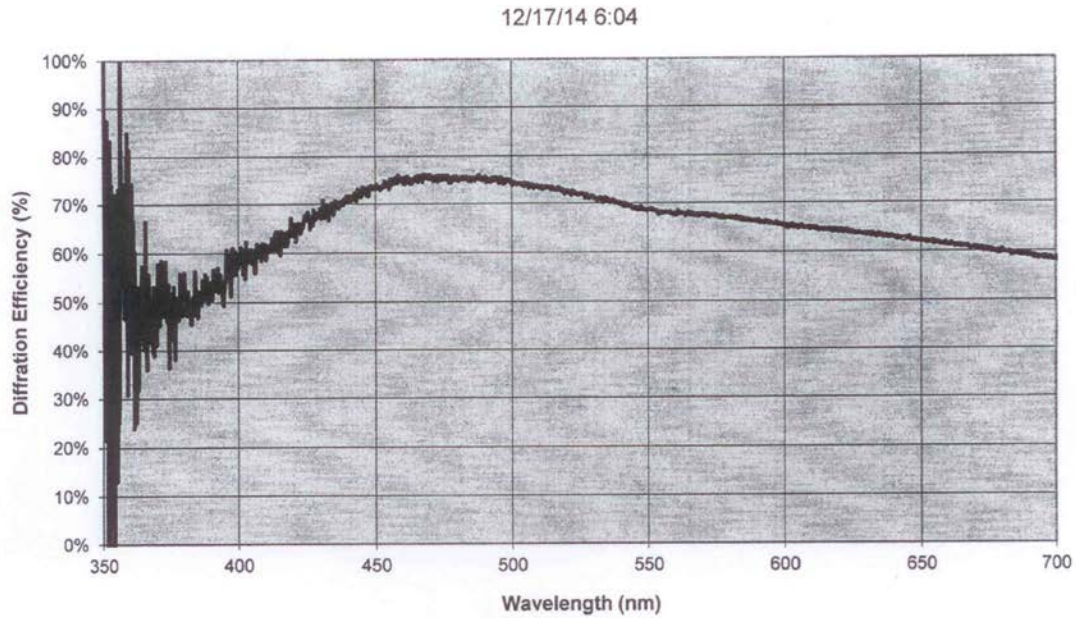


Figure 3: Grating efficiency.

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

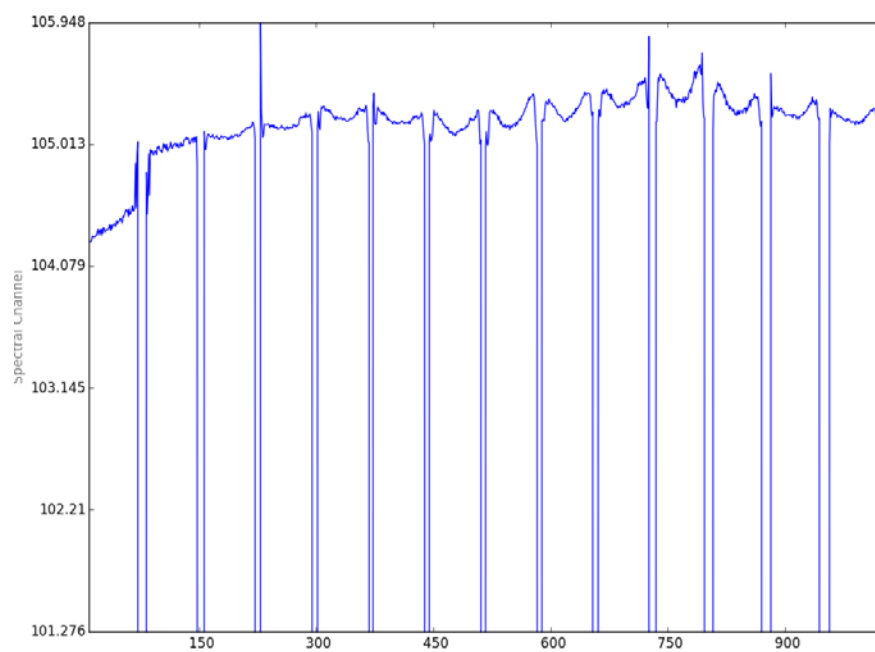


Figure 4: Smile at 387 nm. Horizontal axis is spatial channels and vertical axis is spectral.

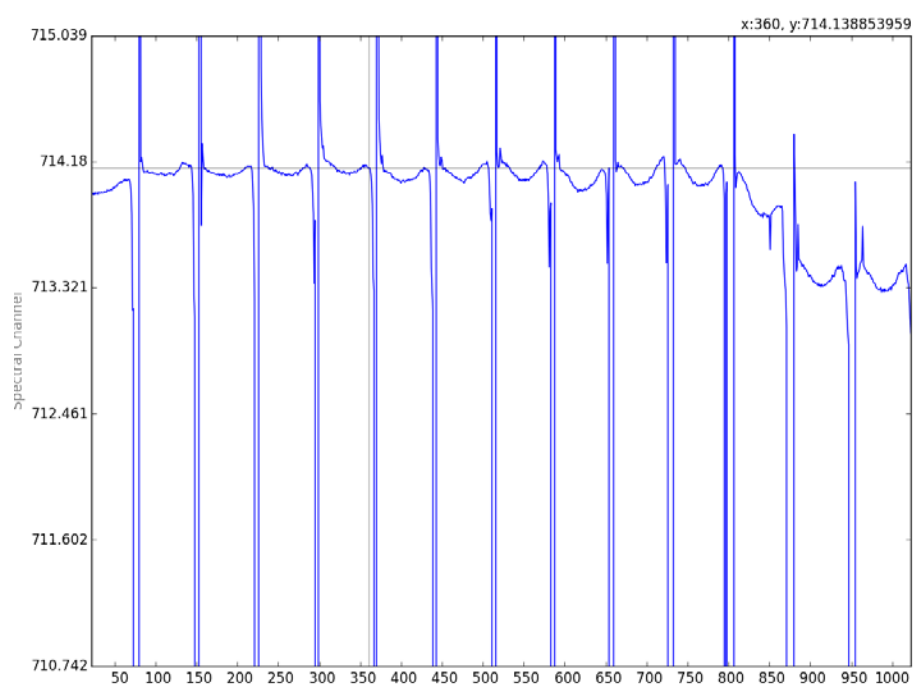


Figure 5: Smile at 587 nm.

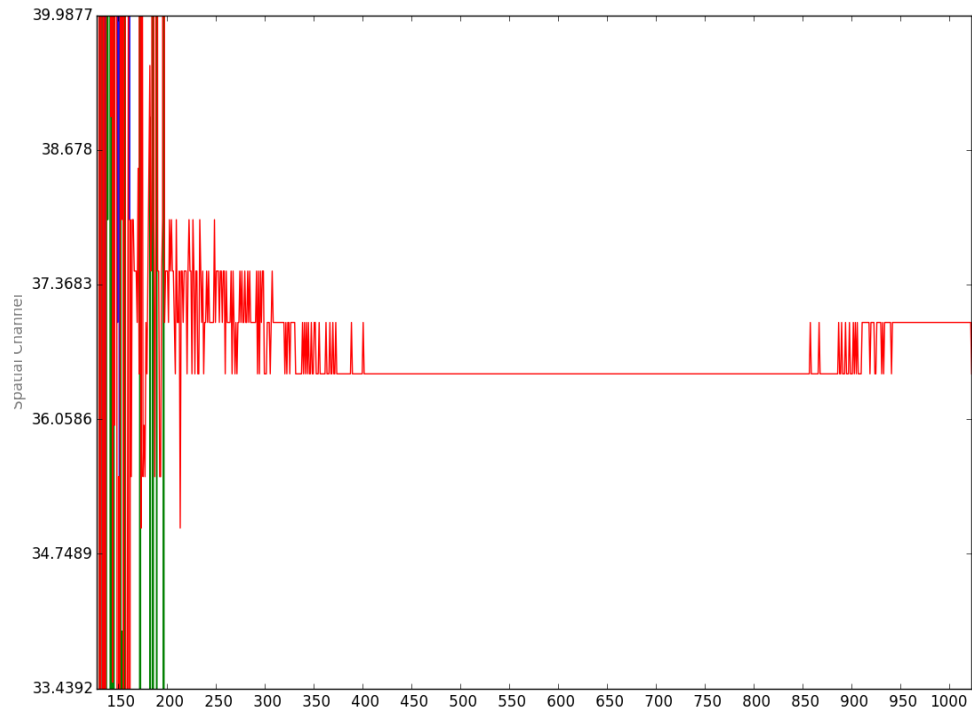


Figure 6: Channel 1 keystone. Horizontal axis is spectral channels and vertical axis is spatial.

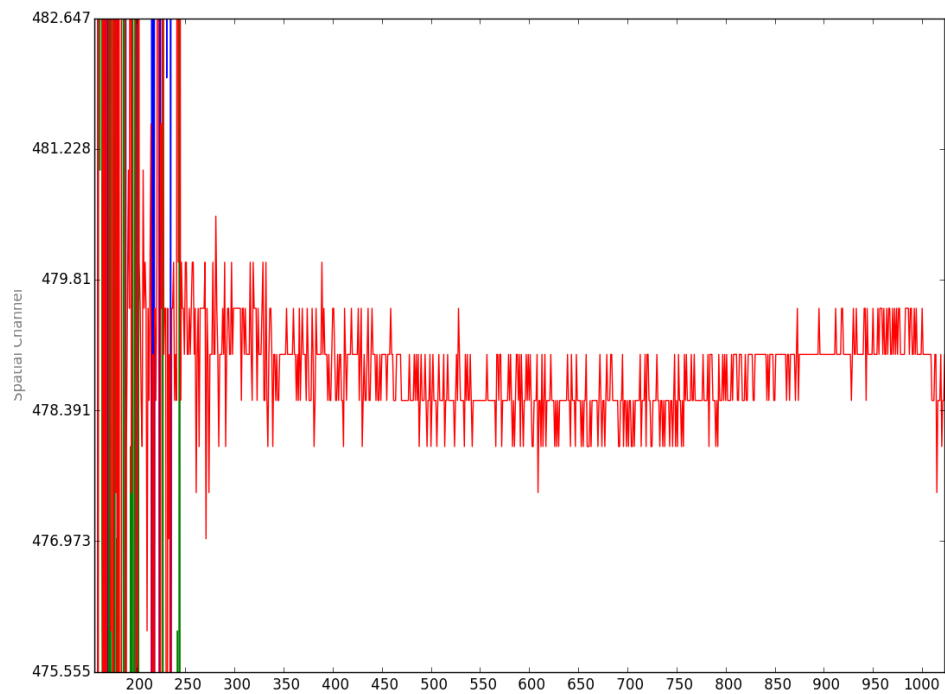


Figure 7: Channel 7 tilt

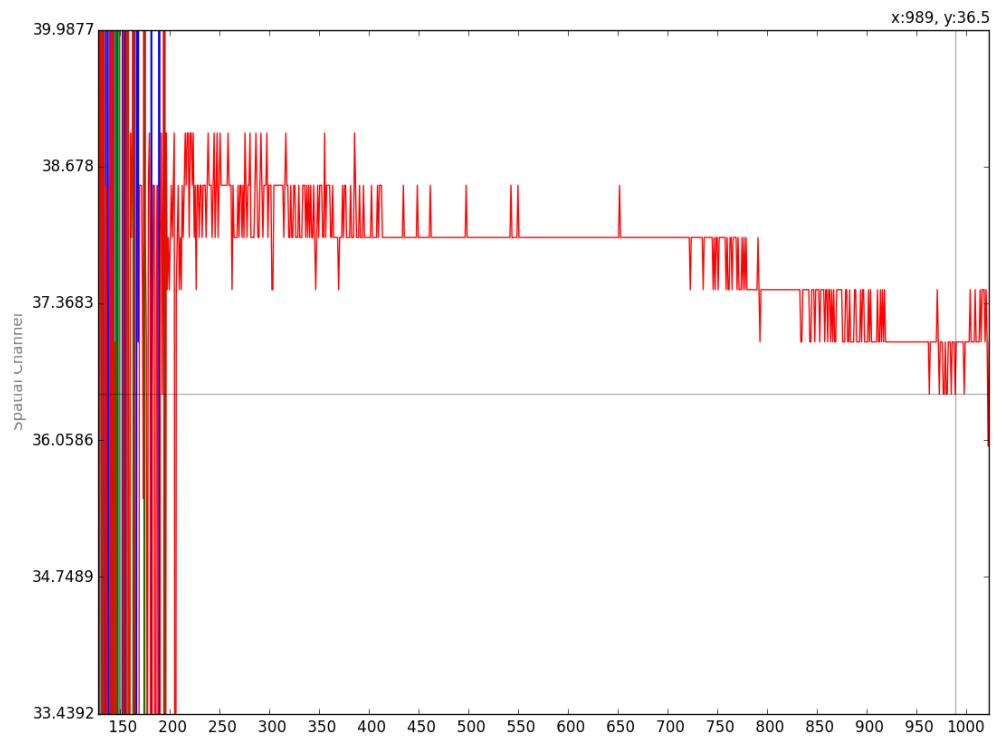


Figure 8: Channel 14 keystone.

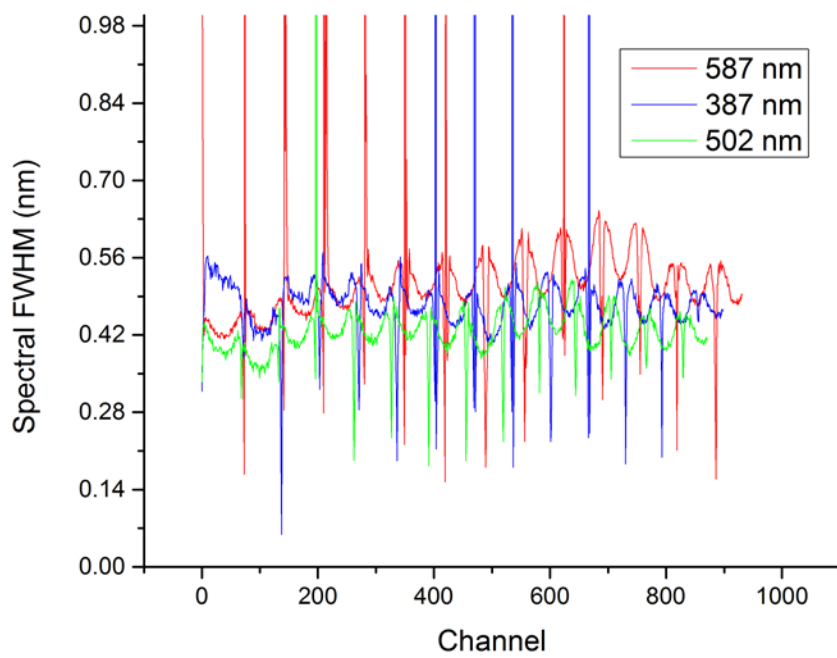


Figure 9: Spectral widths vs. spatial position

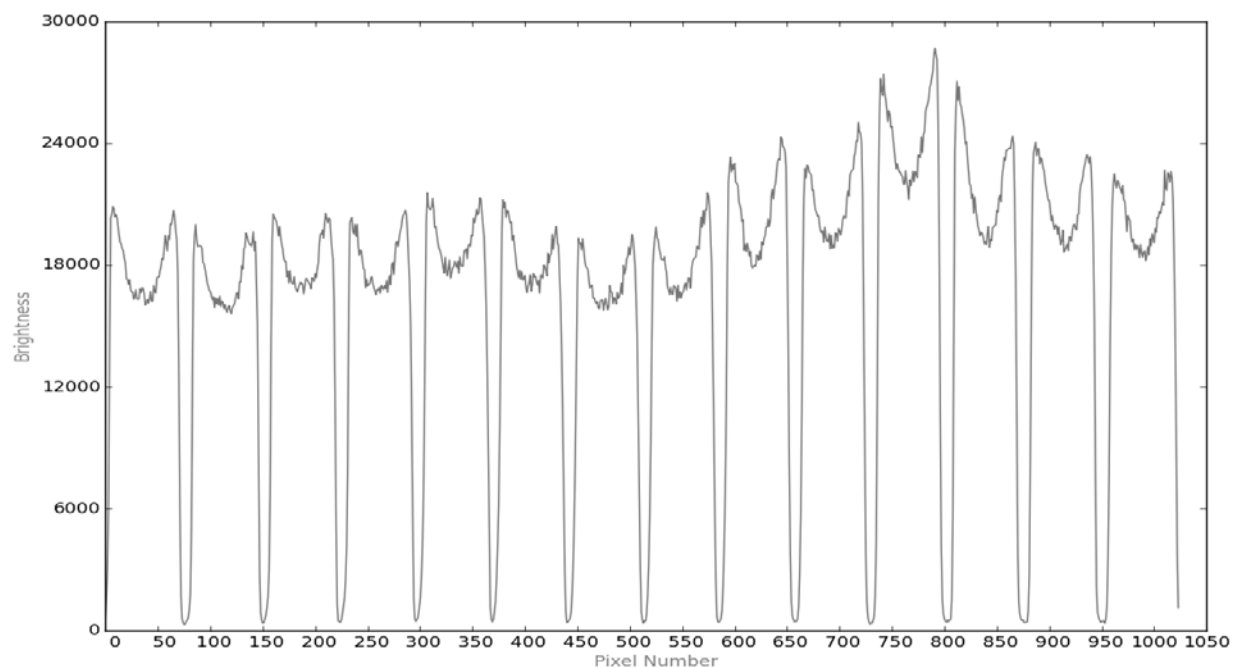


Figure 10: Cross section of fibers.

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

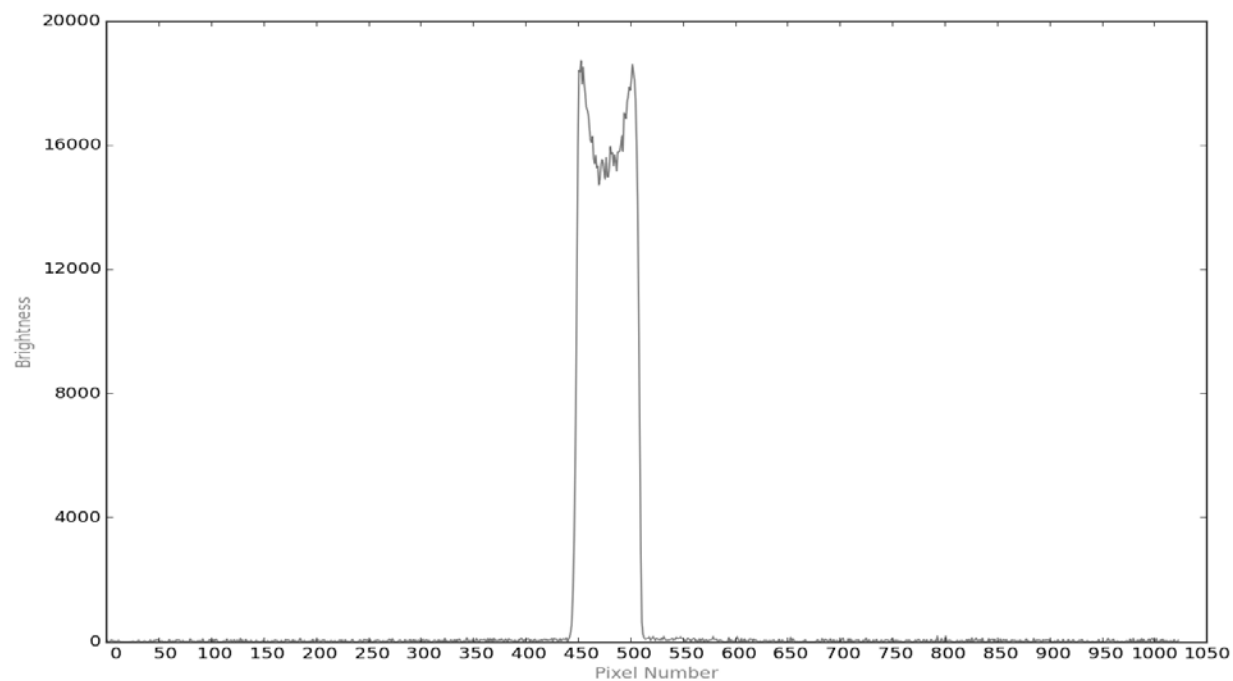


Figure 11: Cross section of channel 7.

	Pre Shake Pixel Position	Pre Shake FWHM	Post Shake Pixel Position	Post Shake FWHM	Change in Position	Change in FWHM
387 nm	143	<.5 nm	143	<.5 nm	0	0
502 nm	470	<.5 nm	470	<.5 nm	0	0
587 nm	714	<.5 nm	714	<.5 nm	.0	0