

# PQ Protocol



Company: Moscow State University of  
Operator: Default  
Instrument Type: Senterra Microscope 532 nm Grating 400  
Optics Configuration: Microscope with: 532 nm, Grating 400, CCD  
Accessory: None  
Instrument Serial Number: Result  
Instrument Firmware Version: Result  
OPUS/DB Version: 20090227 / 6.5.9  
Overall Test Result: PASS  
Test expires: 2013/01/18 19:23:42  
Test Date/Time: 2012/01/18 19:23:42  
Test Spectra Path: C:\Program Files\OPUS\_65\Validation\Data\20120118\192342  
Comment:

## Wavelength Accuracy Test

1. Peak specified:	391.5 cm <sup>-1</sup>	1. Peak measured:	391.7 cm <sup>-1</sup>
Max. Deviation Limit:	3.00 cm <sup>-1</sup>	Measured Deviation:	0.19 cm <sup>-1</sup>
2. Peak specified:	857.9 cm <sup>-1</sup>	2. Peak measured:	858.2 cm <sup>-1</sup>
Max. Deviation Limit:	3.00 cm <sup>-1</sup>	Measured Deviation:	0.27 cm <sup>-1</sup>
3. Peak specified:	1168.5 cm <sup>-1</sup>	3. Peak measured:	1168.8 cm <sup>-1</sup>
Max. Deviation Limit:	3.00 cm <sup>-1</sup>	Measured Deviation:	0.26 cm <sup>-1</sup>
4. Peak specified:	1323.9 cm <sup>-1</sup>	4. Peak measured:	1325.0 cm <sup>-1</sup>
Max. Deviation Limit:	3.00 cm <sup>-1</sup>	Measured Deviation:	1.07 cm <sup>-1</sup>
5. Peak specified:	1648.4 cm <sup>-1</sup>	5. Peak measured:	1649.5 cm <sup>-1</sup>
Max. Deviation Limit:	3.00 cm <sup>-1</sup>	Measured Deviation:	1.13 cm <sup>-1</sup>
6. Peak specified:	2931.1 cm <sup>-1</sup>	6. Peak measured:	---
Max. Deviation Limit:	3.00 cm <sup>-1</sup>	Measured Deviation:	---

## Throughput Test

Throughput minimum requirement: 6000      Throughput measured: 29232

## Photometric Consistency Test

1. Peak specified:	620.9 cm <sup>-1</sup>	1. Peak measured:	620.3 cm <sup>-1</sup>
Max. Deviation Limit:	10.000 %	Measured Deviation:	2.341 %
2. Peak specified:	1001.4 cm <sup>-1</sup>	2. Peak measured:	1000.8 cm <sup>-1</sup>
Max. Deviation Limit:	10.000 %	Measured Deviation:	0.000 %
3. Peak specified:	1602.3 cm <sup>-1</sup>	3. Peak measured:	1601.8 cm <sup>-1</sup>
Max. Deviation Limit:	10.000 %	Measured Deviation:	3.738 %
4. Peak specified:	2904.5 cm <sup>-1</sup>	4. Peak measured:	2906.0 cm <sup>-1</sup>
Max. Deviation Limit:	10.000 %	Measured Deviation:	1.546 %
5. Peak specified:	3054.3 cm <sup>-1</sup>	5. Peak measured:	3055.8 cm <sup>-1</sup>
Max. Deviation Limit:	10.000 %	Measured Deviation:	2.459 %

# Overall Test Result = PASS

Date and Signature

Date and Signature