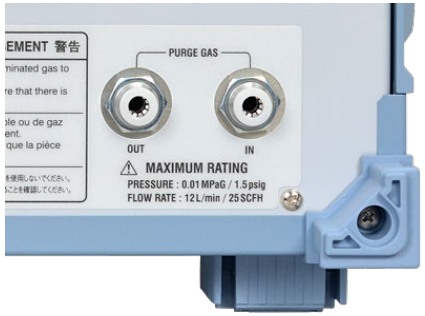
OSA: Removal of Absorption inside OSA by Purging

Applicable model*: AQ6380/AQ6374/AQ6375/AQ6376/AQ6377

When a light source with a wide wavelength band is measured with an optical spectrum analyzer (OSA), noisy waveforms may appear in certain wavelength bands and interfere with measurement. This is due to light absorption of water vapor (H_2O) or carbon dioxide (CO_2) contained in the air inside the OSA optics (monochromator). Water vapor has strong optical absorption near 1400 nm, 1900 nm and 2700 nm, and carbon dioxide has near 2000 nm and 4200 nm.

The applicable models are equipped with a purging mechanism to address this issue. By continuously supplying and exhausting purge gas such as dry air and nitrogen from the supply and exhaust port on the rear panel to the inside of the monochromator, the water vapor and carbon dioxide inside the OSA are removed, and the correct optical spectrum can be measured.

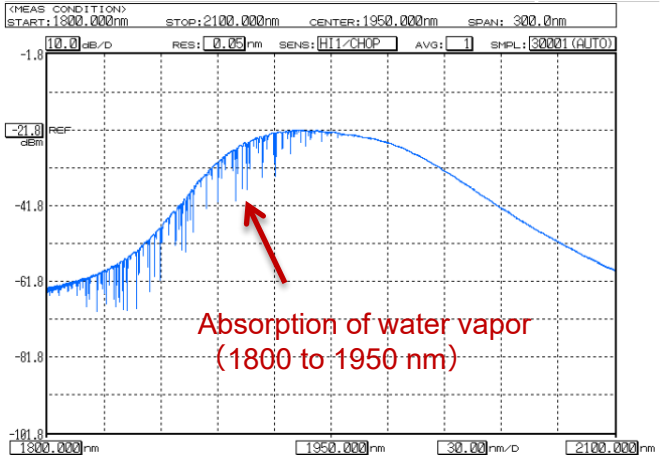


Purging gas ports (IN/OUT)

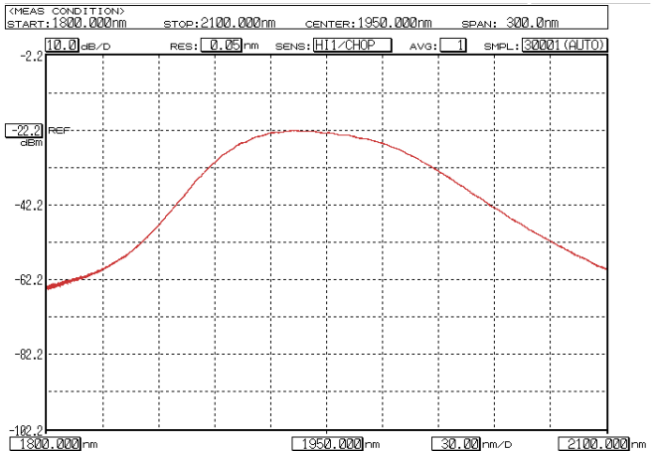
Major requirements for purging

- **Supply tubing**
  1/4" outer diameter quick connectors, clean flexible nylon tubing
- **Maximum rating**
  Pressure: 1.5 psig (0.01 MPaG)
  Flow rate: 25 SCFH (12 L/min)
- **Purge gas**
  Ultra-high purity liquid nitrogen which must be 99.9999% pure grade with the heat exchanger is recommended.

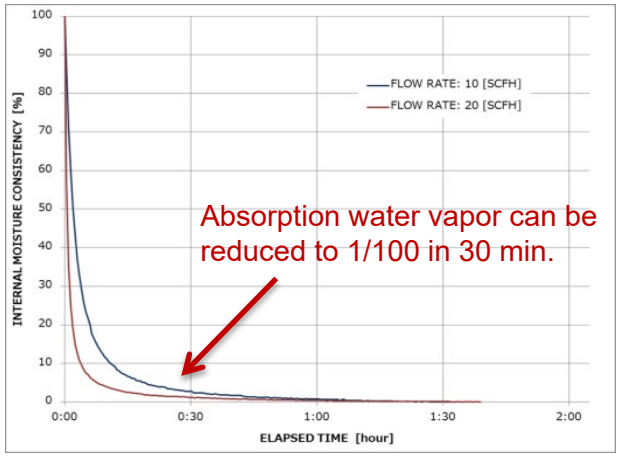
* All versions unless otherwise specified.
For AQ6375, AQ6375B or later.



No purging



Nitrogen purging (1 hr.)



Replacement efficiency of purging