The NIR WLR-Meter is the latest technology developed by Pietro Fiorentini in order to offer to end users a complete range of metering solutions.

The meter is a water in liquid ratio (WLR) sensor based on differential optical absorption spectroscopy. It relies on the large difference in the absorption of Near Infra-Red (NIR) light between crude oil and water.

The meter is a non-intrusive, inline system, providing real time measurement of the WLR. It works in single phase and in multiphase streams, accurately measuring on the whole 0-99,9% GVF and 0-100% water-cut. Its performance is not affected by the presence of emulsions or by salinity changes as the absorption spectrum is based on water, not on the dissolved salts.

The meter can be used as a stand-alone water cut meter or as an add-on component for the Multiphase Flow meter and Wet Gas meter giving the individual oil and water flow rates.

**KEY FEATURES**

- Accurate in all multiphase and wetgas flow regimes (GVF 0 - 99,9%)
- Measurement not affected by emulsion
- Measurement independent from salinity
- Stand-alone system or add-on module to other Fiorentini metering systems
- High repeatability and long term stability due to high quality components
- High flexibility: both onshore and offshore application
- Suitable for mobile applications (well testing mobile units)
- Easy Calibration
### SPECIFICATIONS

| **Operating Range** | • 0-100% water cut  
• 0-99.9% gas volume fraction (GVF) |
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<tbody>
<tr>
<td><strong>Salinity Range</strong></td>
<td>Independent</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>Flanged spool from 2” up to 12”</td>
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<tr>
<td><strong>Design Pressure &amp; Temperature</strong></td>
<td>Up to 5,000 psi, up to 302°F (150°C)</td>
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<tr>
<td><strong>Spool Material</strong></td>
<td>AISI316, Duplex, Inconel 625 or others upon request</td>
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<tr>
<td><strong>Process Connection</strong></td>
<td>Flanged or threaded</td>
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<tr>
<td><strong>Certification</strong></td>
<td>ATEX Ex d IIB T4</td>
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| **Communication Interface** | Communication ports:  
• RS-485, Ethernet  
Communication protocols:  
• Modbus ASCII/RTU, TCP/IP |
| **Flow Computer**   | • Embedded computer PC/104  
• Operating system Windows XP Embedded  
• Power supply: 24VDC, or 110÷240 V 50÷60Hz  
• Stainless steel or aluminium enclosure  
• Weather protection: IP 66 |
| **HMI**             | HMI for Windows XP, Vista, and 7                                                  |

For further information, please visit our website: [http://www.fiorentini.com](http://www.fiorentini.com)