The TDLS8000 tunable diode laser spectrometer can measure concentrations of O₂, CO, CH₄, NH₃, H₂O and many other NIR absorbing gases in various processes that occur in the oil, petrochemicals, electricity, iron and steel, and other industries.

No extractive system is required because the sensor does not come in contact with process gas to be measured. The TDLS8000 is a robust spectrometer that can perform reliable, high-speed measuring under harsh conditions including those involving high temperatures, high pressure, corrosive or irritant gases, and high dust levels.

As a successor to the conventional TDLS200, the functions of the TDLS8000 have been improved through incorporation of a smarter design. Use of a touch panel has achieved excellent intuitive operability.

**MAJOR FEATURES**

- **High-precision measuring achieved by TruePeak, and highly reliable measuring conforming to Safety Integrity Level 2 (SIL2)**
  
  TruePeak, a method that calculates spectral areas, ensures measuring is not affected by changes in the pressure or temperature of measured gases, or concentrations of mixed gases. The integrated reference cell enables users to obtain accurate spectra of gases to be measured at all times, which is effective even when measuring small quantities of gases. In addition, the newly introduced automatic gain control function in the light receiving unit has improved the S/N ratio, and thus the TDLS8000 can perform high-precision measuring of gases even in locations containing high levels of dust. The TDLS8000 is certified to conform to the SIL2 defined in the IEC61508 international safety standard. The duplex system with two spectrometers can conform to SIL3.

- **HMI unit with an intuitively operable touchscreen**
  
  Use of a 7.5-inch large LCD touchscreen enables intuitive operation. The TDLS8000 provides a trend function, and has an improved display function. This HMI unit has a remote connection function and can be connected to up to four spectrometers simultaneously.

- **Easy to install**
  
  The compact design of the TDLS8000 has led to a reduction in its size and weight to three-quarters of the size and weight of the previous model. This enables it to be installed in a variety of locations while helping ensure there is sufficient room for wiring. Both the sensor control and the laser unit come equipped with a small display as standard. These displays show the laser transmittance required for adjusting the optical axis, which makes adjusting it easy.

- **Easy to maintain**
  
  The laser module is designed to be a sealing structure, and as a result it is well protected from the outside and resistant to damage. Even if the unit is damaged, calibration is not required after replacing it at a site because calibration data is saved in the unit in advance. The TDLS8000 has a diagnostic functionality and can save trend data for up to 50 days.

- **Able to be installed in hazardous areas**
  
  The TDLS8000 has been certified to conform to the explosion-proof standards of IEC-Ex, ATEX, cFMus, and the Technology Institution of Industrial Safety (TIIS) in Japan (to be certified as for TIIS), and can be installed in hazardous areas. The TDLS8000 complies with two types of explosion-proof constructions: Non-Incendive or Type n protection that allows installation in Zone 2 or Div 2 areas, and flameproof enclosure that allows installation in Zone 1 or Div 1 areas. The flameproof enclosure can eliminate purge gas, which is a requirement of conventional models of pressurized apparatus.

- **Digital communication function provided as standard**
  
  The TDLS8000 provides HART and Modbus TCP communication functions as standard. It can be connected to FieldMate by using HART communication, making settings of its various parameters easy.

**MAJOR SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Measured components</th>
<th>Measured ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min. range</td>
</tr>
<tr>
<td>O₂</td>
<td>0 to 1%</td>
</tr>
<tr>
<td>CO</td>
<td>0 to 200 ppm</td>
</tr>
<tr>
<td>CH₄</td>
<td>0 to 5 %</td>
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<tr>
<td>NH₃</td>
<td>0 to 30 ppm</td>
</tr>
<tr>
<td>H₂O</td>
<td>0 to 30 ppm</td>
</tr>
</tbody>
</table>

**Contact us:**

To Yokogawa Japan

URL: [https://plus.yokogawa.co.jp/gw/gw.po?c-id=000588](https://plus.yokogawa.co.jp/gw/gw.po?c-id=000588)

For worldwide locations, please see the back cover.

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