**SPECIFICATIONS**

- **Infrared emitter**
  - Peak emission: 950nm
  - Centroid wave: 940nm
  - Spectral bandwidth: 42nm
  - Radiant intensity: 2mW/sr

- **Red emitter**
  - Peak emission: 660nm
  - Centroid wave: 655nm
  - Spectral bandwidth: 17nm
  - Radiant intensity: 2.6mW/sr

- **Detector**
  - Wavelength of max sensitivity: 920nm
  - Range of sensitivity: 400nm-1100nm
  - Radiant sensitive area: 1.3x1.3 (mm)
  - Spectral sensitivity(940nm): 0.77A/W

- **Infrared/Red emitter**
  - Duty cycle: 25%
  - Min current: 0.20mA
  - Max current: 50mA

- **Resolution**: 16bit
- **Sampling frequency**: 500Hz

**FEATURES**

- Adjustable current for each LED using the API
- Subtracts ambient light
- Pre-conditioned digital output
- High signal-to-noise ratio
- Medical-grade raw data output
- Ready-to-use form factor

**APPLICATIONS**

- Oximetry
- Heart rate & heart rate variability
- Life sciences studies
- Biomedical research
- Human-Computer Interaction

**GENERAL DESCRIPTION**

The SpO2 (peripheral capillary oxygen saturation) sensor uses two emitting LED’s one in the red region and the other in the infrared region of the spectrum. The reflected light of each one of these LED’s is absorbed by a photodiode that converts this current into a digital value that is sent via SPI. This sensor can be used to estimate the oxygen saturation level.

---

*For additional parameters please contact plux@plux.info*
on the blood with +/- 2% accuracy compared to a medical sensor.

**PHYSICAL CHARACTERISTICS**

Infrared emitter relative spectral emission

\[ I_{\text{rel}} = f(\lambda), \ T_A=25^\circ\text{C}, \ I_F=20 \text{ mA} \]

![Graph of infrared emitter relative spectral emission]

Red emitter relative spectral emission

\[ I_{\text{rel}} = f(\lambda), \ T_A=25^\circ\text{C}, \ I_F=20 \text{ mA} \]

![Graph of red emitter relative spectral emission]
Detector relative spectral sensitivity

\[ S_{\text{rel}}(\lambda) = f(\lambda), \; T_A = 25^\circ C \]

Function used to convert the photodiode current to a digital value:

\[ V_{\text{digital}} = \frac{I_{\text{pd}} \times G}{1.2V \times 2^n} \]

- \( I_{\text{pd}} \): Photodiode current in Amperes
- \( G \): Transimpedance Gain (1M\Omega)
- \( n \): Number of bits (8 or 16)

**ORDERING GUIDE**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Package Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>