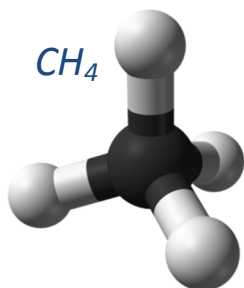




METHANE detection

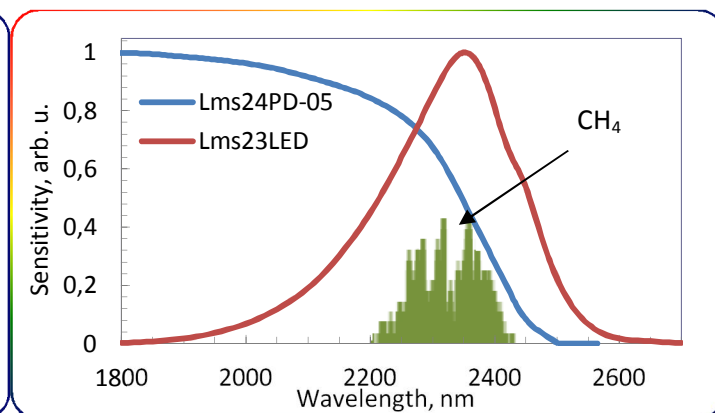
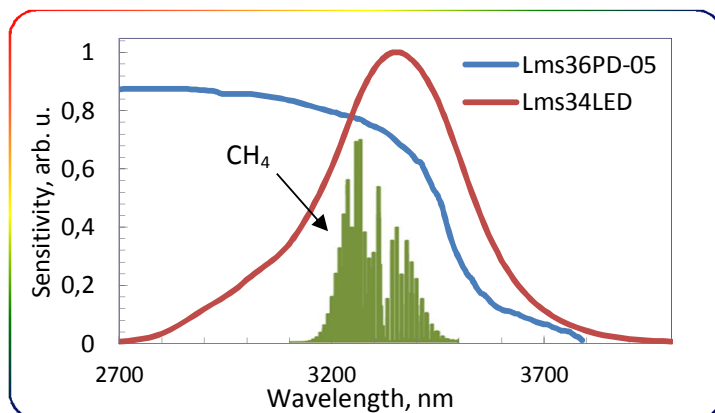


Methane is produced by many **natural** and **human-influenced sources**. There are several different techniques of methane detection. We offer method of mid-infrared optical absorption based on LED-PD optopair.

Methane has the main absorption band at **3200-3400 nm**. Weaker absorption bands that can be used for detection are located around 2300 nm and 1650 nm (the data are taken from HITRAN Catalogue). So, we recommend using:

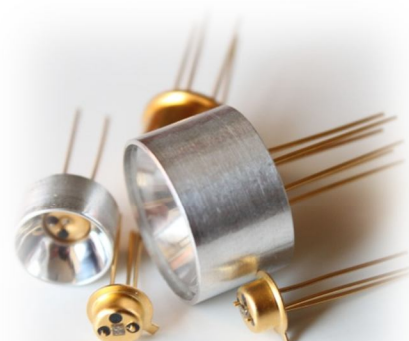
- for **compact** measuring cells and/or for detection of **low CH₄ concentrations**: light emitting diode **Lms34LED** and **Lms36PD** series photodiode;
- for **long-path** measuring cells and/or for **high CH₄ concentration** detection: light emitting diode **Lms23LED** and **Lms24PD** series photodiode.

The features of **LEDs** and **PDs** for CH₄ detection:



Advantages of our devices:

- ▶ Possibility to arrange a **compact design** of an optical cell thanks to compact size of the LED chip – **0.35 × 0.35 mm**
- ▶ No need of using additional optical filters – LED emission band width is comparable to absorption band width of CH₄
- ▶ **Low power consumption** (<1 mW)
- ▶ **Short response time** (10–50 ns)
- ▶ Possibility to achieve modulation **ranges** of up to **100 MHz**
- ▶ Operation temperatures up to +150°C
- ▶ **Lifetime** of **80 000 hours**



LED-PD based **Evaluation systems** for methane

For quick start we offer **out-of-the-box** solutions that can be launched with minimal effort – **evaluation systems**:

- **MDS-3** system with a 3-pass gas chamber that provides optical path about 70-80 mm long and efficient focusing of the LED emission on the PD sensitive area.

The system includes:

- 3-pass optical chamber
 - Light emitting diode Lms34LED with an LED driver
 - Photodiode Lms36PD-05 with a preamplifier
 - SDM synchronous detector
-
- Flexible **evaluation kit** with modular design that includes:
 - Light emitting diode Lms34LED (other LED is available) with an LED driver
 - Photodiode Lms36PD (other PD is available) with a preamplifier
 - SDM synchronous detector



MDS-3 optical chamber