

Thermo-Electric Cooled Fiber Optic Spectrometer



The **AvaSpec-2048TEC** is a special version of the AvaSpec-2048, where the Sony 2048 CCD detector is mounted on a one-stage Peltier cooling device. This Peltier cooling element can reduce the temperature of the CCD chip by ca. 30 °C, improving the dynamic range by at least a factor of 10. As an additional benefit from the cooling the dark noise is reduced by a factor of 2-3.

The above features enable the **AvaSpec-2048TEC** to be implemented in low light-level applications, such as fluorescence and Raman measurements, where integration times of more than 5 seconds are needed. The AvaSpec-2048TEC can be delivered as one or 2-channel instrument and has all the standard options, gratings and specifications the normal AvaSpec-2048 has.

The **AvaSpec-2048TEC** is built into a desktop housing, has a cooling fan to actively ventilate the heatsink of the Peltier cooling element and an internal power supply.

Technical Specifications

Temperature cooled CCD	DT = ca. -30 °C versus ambient
Time to stabilize	1-2 Minutes
Dynamic Range improvement for it > 5 seconds	> Factor 10
Dark Noise improvement for it > 5 seconds	Factor 2-3
Peltier cooling internal Power supply	Ca. 3.0 V, 4A
External Power supply	85-264 VAC, 30W
Dimensions	310 x 235 x 135 mm (1 channel) Desktop