



EOC SMD IR Emitter Performance vs MEMS Emitters

The EOC SMD emitters perform very well in comparison with MEMS SMD emitters (see measurements in the plots below). They beat the performance of the MEMS SMD emitter. The EOC SMD has a higher radiant power because its filament temperatures are higher than those of the MEMS-SMD emitters and it has more radiating area in the SMD package. The MEMS sources require a frame of silicon for handling, which reduces the radiating area.

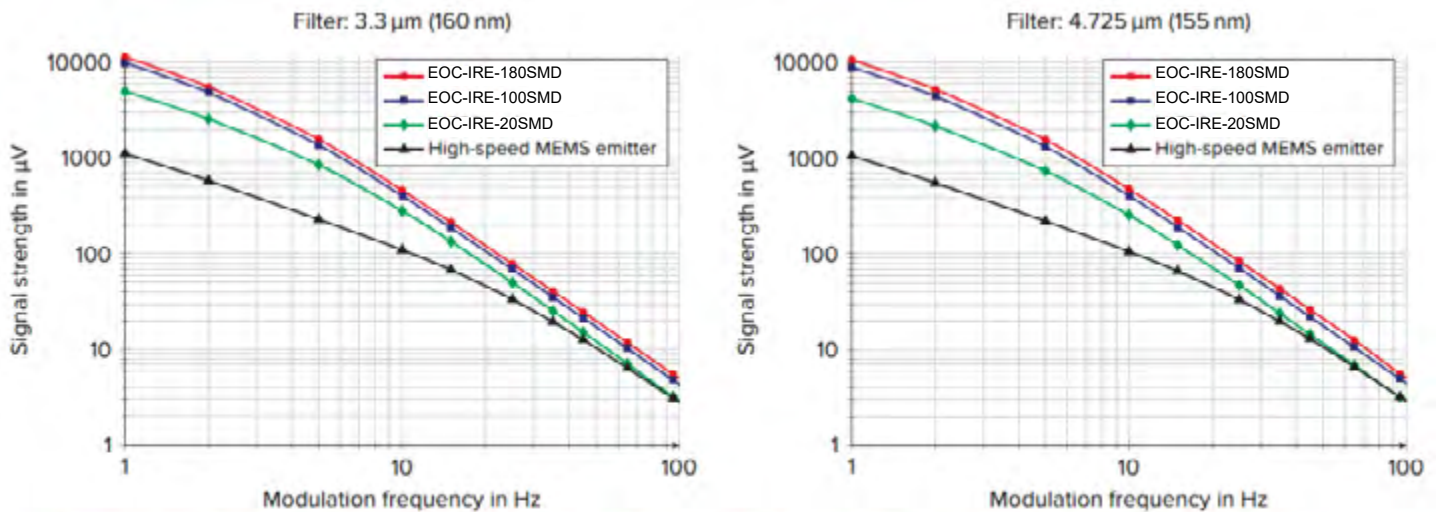


Fig. 2: Sensor signal vs. modulation frequency of SMD IR emitters in a typical NDIR gas sensor set-up (4-channel detector, 100 mm optical path length). Left: filter with center wavelength of 3.3 μm and bandwidth of 160 nm; right: filter with center wavelength of 4.725 μm and bandwidth of 155 nm

Although the EOC-SMD emitter (broadband) modulation depth is lower than that of MEMS, the EOC-SMD emitter starts with a much higher signal at low modulation frequencies. With increasing modulation frequency, the curves of the EOC-SMD emitters drop more than those of MEMS emitters, but the signal at the detector is higher with the EOC-SMD emitters up to 100 Hz.