

AN0101 Application Note: ezPyro™ Broadband Infrared Sensors For Application With Narrowband Optical Filters

1 INTRODUCTION

Pyreos customers often use infrared filters specific to their applications or to the way they use an infrared sensor. In order to facilitate products where a Pyreos ezPyro sensor is used with a customer supplied filter, we propose that such a filter is applied above the broadband ezPyro device.

Two broadband filter options are available:

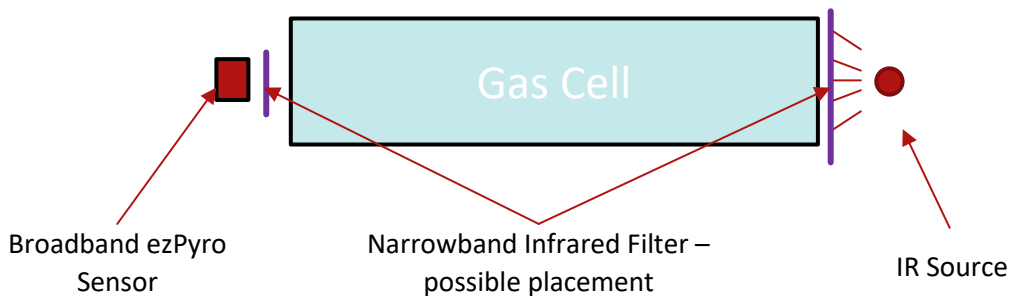
- 2.5 to 6 μm – ePY12121
- 6 to 14 μm – ePY12111

For quality reasons, Pyreos always supplies ezPyro sensors with a filter. (See also our standard gas and flame products in the range below 6 μm .)

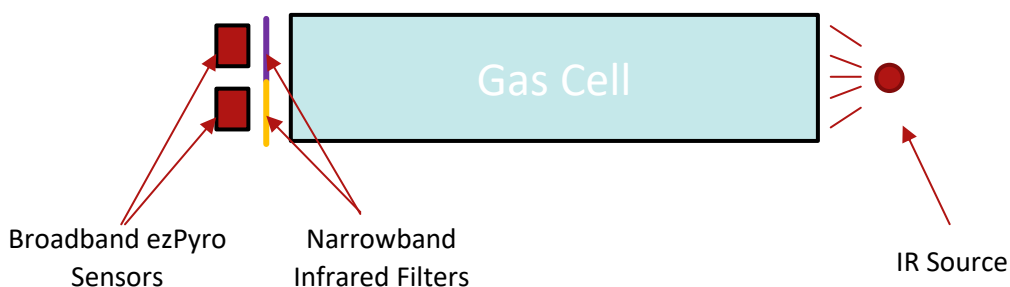
2 APPLICATION

Possible mounting locations of the customer application specific filter:

- 1) for single measurement wavelength, the customer's filter can be mounted anywhere in the system – near the infrared source or near the ezPyro sensor

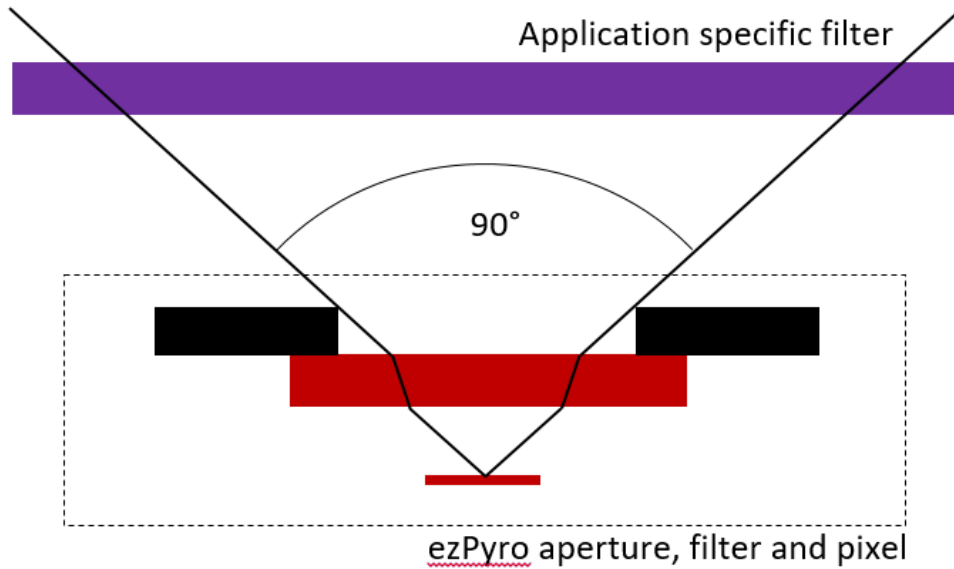


- (2) for multiple wavelengths (for example multiple gas measurement) each individual filter should be mounted near each ezPyro sensor



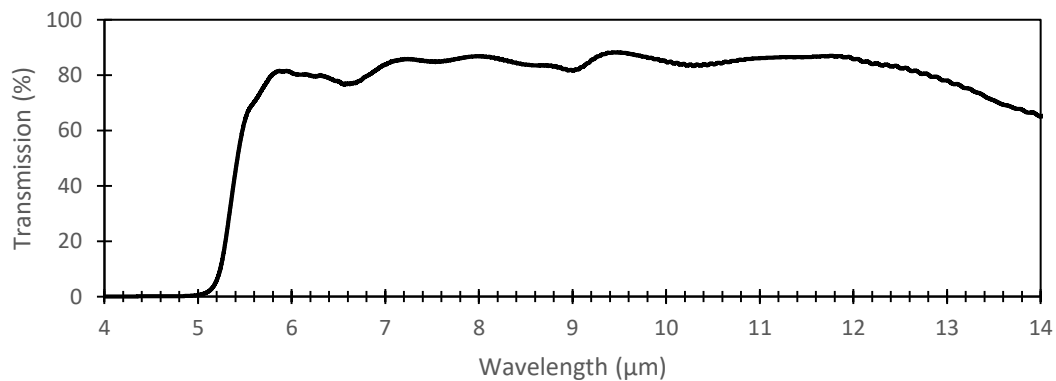
2.1 Design considerations

Ensure that the field of view (FoV) of the sensor is not restricted by the size/clear aperture of the filter (see below):



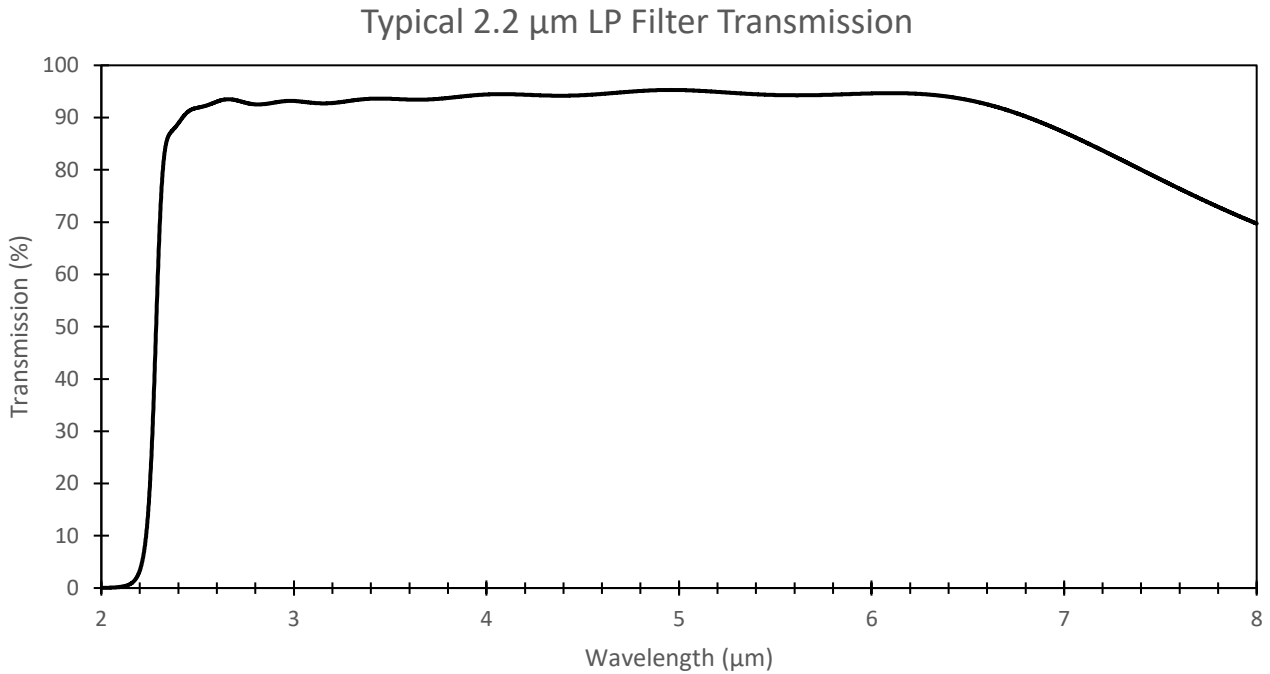
2.2 ePY12111 – Application in 6 to 14 μm range with customer filter

Typical 5.0 μm LP Filter Transmission



5.0 μm LP filter has good transmission (80-90%) in the 6-14 μm range - see chart above.

2.3 ePY12121 – Application in 2.5 to 6 μm range with customer filter



2.2 μm LP filter has good transmission (>90%) in the 2.5-6 μm range - see chart above.