

**ALPAO atmospheric turbulence WFS** is a Shack-Hartmann WFS dedicated to astronomy, defense and FSO applications. With the most advanced InGaAs sensor, it features a high sensitivity at 1.5  $\mu\text{m}$  and a very high frequency. The latency has been optimized to fit the most demanding applications.

This sensor perfectly fits with **ALPAO DM** and **ALPAO Real Time Computer ACE** fast.



## Key features

### HIGH SENSIVITY

Quantum efficiency  
>70% at 1.5 $\mu\text{m}$

### FAST WFS

Up to 3kHz

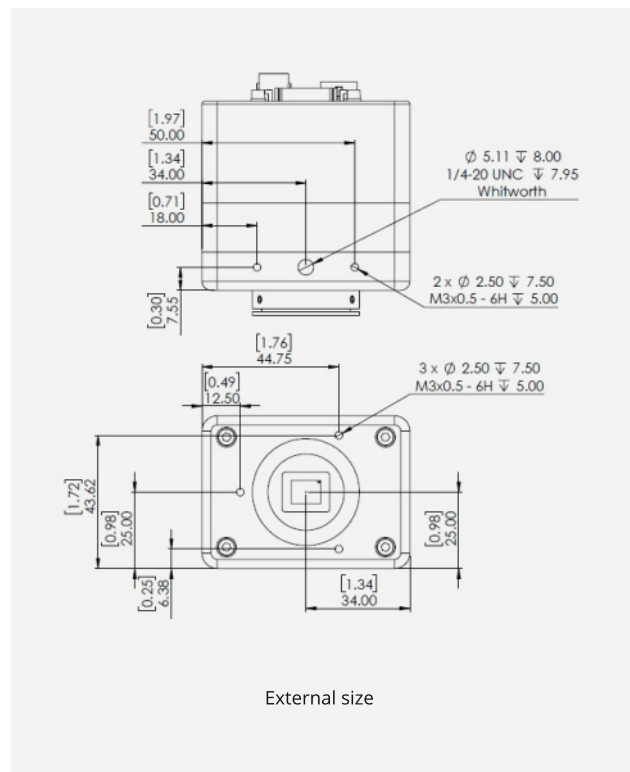
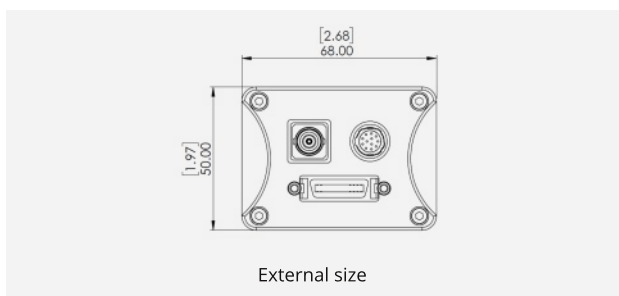
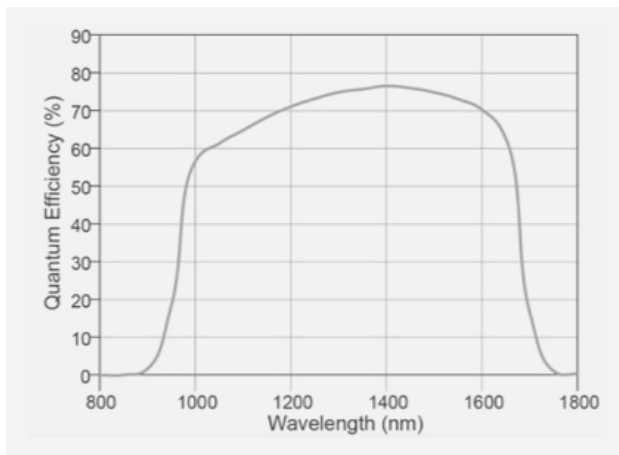
### LOW LATENCY

Optimize for  
atmospheric corrections

## TYPICAL PERFORMANCES

Sensor type
Acquisition frequency
Sensor maximum quantum efficiency
Number of microlenses
Microlens pitch
Spectral range
Interface
Dynamic in tip-tilt / focus (PV)
Residual WFE error on closed loop *
Absolute precision *
Repeatability *
Typical noise (RMS)
Typical noise (RMS)
Operating temperature
Recommended DM

SWIR WFS-69	SWIR WFS-97	SWIR WFS-277	SWIR WFS-468
InGaAs			
3kHz	2kHz	1kHz	
70% at 1.5µm			
8 x 8	10 x 10	16 x 16	23 x 23
240µm	264µm	240µm	167µm
0.9 - 1.7µm			
Camera Link			
10µm	10µm	15µm	10µm
20nm RMS			
λ/20 RMS			
10nm RMS			
<700e <sup>-</sup> (low gain)			
<150e <sup>-</sup> (high gain)			
0°C to 30°C			
DM69	DM97	DM277	DM468



## MORE INFORMATION

[www.alpao.com](http://www.alpao.com)

[contact@alpao.fr](mailto:contact@alpao.fr)

+33 476 890 965

Note \*: considering a measurement performed in good flux conditions and without wavefront perturbation