AOSense, Inc.
415 Oakmead Pkwy
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Model #AOS-Cav-λ_R-λ_1 series: Single-axis transfer cavity

Single-axis transfer cavity data sheet

(Sample data for Model #AOS-Cav-780-369)

Device information and safe operating conditions

Device information	
Model No.	**AOS-Cav-780-369**
Serial No.	**CAV-SAMPLE**
λ_R	**780 nm**
λ_1	**369 nm**
Assembly date	**May 2017**

Safe operating conditions	
Heater power limit	**<5 W**
Heater resistance	**<2 Ω**
Maximum operational temperature [a]	**45 °C**
PZT voltage min/max	**-20 V/+100 V**
Ion pump polarity[b]	**Positive**
Ion pump bias voltage (typ.)[b]	**5 kV**

[a]Recommended operation near room temperature to minimize thermo-mechanical effects and power dissipation.

[b]Recommended operation with Gamma SPC-1-P-S-1-US110-S-S-N ion pump or similar.

Parameter	Value
Free spectral range (FSR)	**~ 5 GHz**
Design finesse	**369 nm: ~1,000-3,000** **780 nm: ~3,000-10,000**
Mirror curvature	**M1: ROC 20 cm** **M2: Plano**
Waist at M2	**369 nm: 184 μm** **780 nm: 268 μm**
Temperature tuning[c]	**~0.2 FSR /K (est.)**
Piezo tuning[c]	**>3 FSR (full range, est.)**
Temperature Sensing	**10 kΩ thermistor, Beta = 3669**

[c]These parameters depend on wavelength. Number quoted is for 780 nm. Shorter wavelength is proportionally more sensitive.

Factory calibration	Value (typ.)
Finesse	**780 nm: >3,000** **369 nm: >1,000**
Piezo tuning	**Axis 1: ~20 V/FSR @ 780 nm**
Vacuum level	**~10^{-9} Torr**

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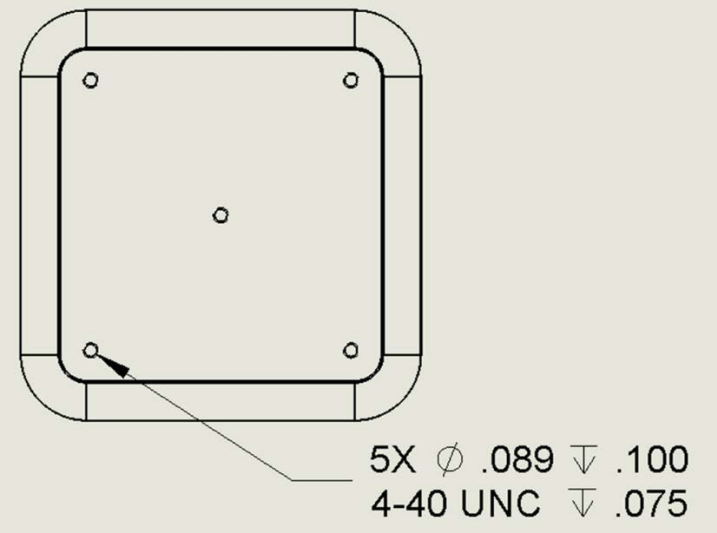
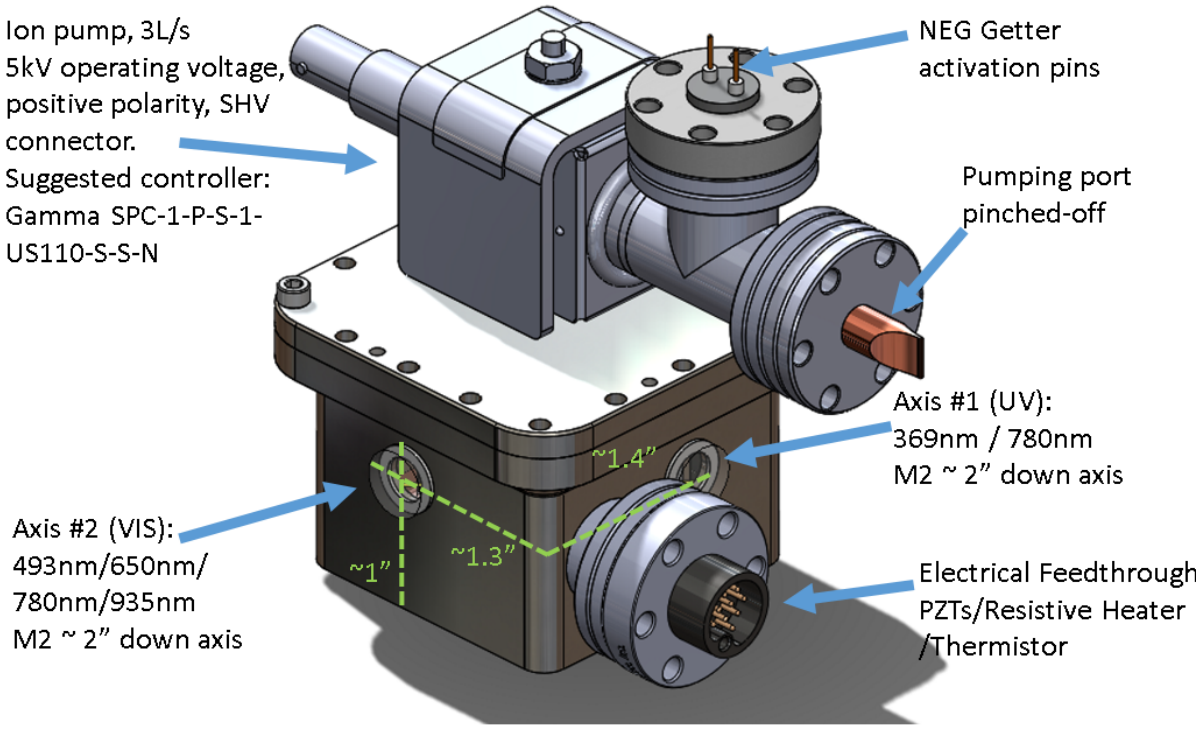
Mechanical Layout



Bottom mounting surface and hole-pattern. Optical access through windows centered ~1″ above mounting plane. Be wary of thread depths, avoid punching through vacuum enclosure with mounting screw!



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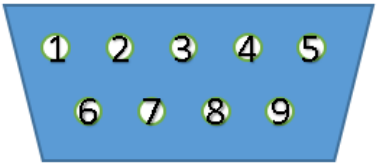
Electrical Interface

A ~24″ breakout cable will be provided with a D-Sub 9 male end with the following pinout:



View Into Cable Assembly (D-Sub9, Male)

Pin	Function
1	Heater +
2	Heater -
3	PZT1 + (UV)
4	No connection
5	PZT2+ (VIS)
6	PZT1 – (UV)
7	10 kΩ thermistor +
8	PZT2 – (VIS)
9	10 kΩ thermistor -

NOTES

1. The information contained herein is subject to change without notice.
2. For questions about using, contact sales@aosense.com
3. Technical information specified is intended only to show the typical functions.
4. The product specified in this document is not designed to be radiation or shock tolerant.
5. AOSense shall have no responsibility for any damages or injury arising from non-compliance with the recommended usage conditions and specifications contained herein.