



# Sputtering Sensor

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The INFICON Sputtering Sensor is specifically designed for use in any sputtering process. The sensor body and cooling tubes are gold plated beryllium copper for maximum cooling efficiency in the sputtering environment. A magnet built into the sensor head reduces excessive heating by energetic free electrons in sputtering systems by deflecting them with the external magnetic field. The rear loading crystal holder design allows easy crystal replacement without having to remove the sensor head from the system.

## ADVANTAGES

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- Gold plated beryllium copper sensor body and cooling tubes for maximum cooling efficiency
- Magnet to deflect free electrons away from the monitor crystal
- Easy installation with bendable water tubes allowing flexibility in sensor placement
- Rear load crystal insertion for easy crystal replacement



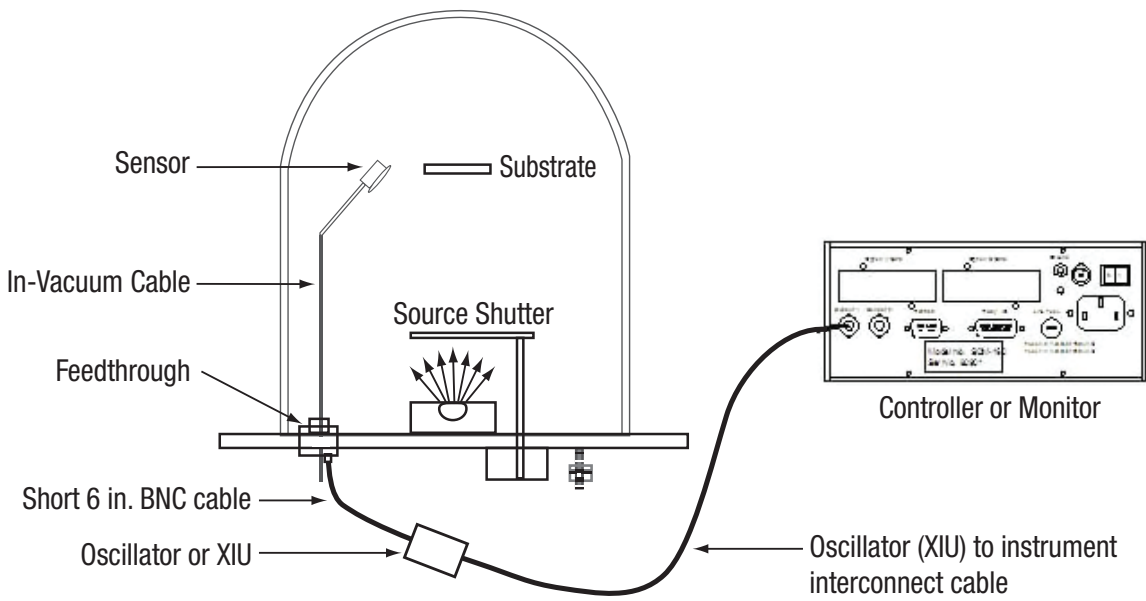
## ORDERING INFORMATION

### Sputtering Sensor

Sputtering Sensor .....	750-618-G1
Sputtering Sensor Shutter Module .....	750-005-G1

#### NOTES:

Includes 30.75 in. (78 cm) in-vac cable, crystal snatcher, pack of 10 silver crystals, and manual  
(other in-vac cable lengths available separately)



## SPECIFICATIONS

### 750-618-G1 Sputtering Sensor

Maximum bakeout temp with no water	105° C
Maximum operating isothermal environment temperature with minimum water flow	400° C
Size (maximum envelope)	1.36 in. OD x 0.69 in. high (3.45 cm x 1.75 cm)
Water, air and coax length	Standard 30 in. (76.2 cm)
Crystal exchange	Rear-loading
Mounting	Customer supplied

### Installation Requirements

Feedthrough	2 pass water with coax connector 2¾ in. ConFlat® Flange – IPN 002-043 1 in. Bolt – IPN 002-042
Other	1) Customer to provide vacuum-tight braze joints or connectors for the water tubes. 2) XIU or Oscillator designed to interface with the specific deposition controller.
Water flow rate	Minimum water flow 750 cc/min, 30° C max (Do not allow to freeze) Coolant should not contain chlorides as stress corrosion cracking may occur. If the water tube passes through a cryoshroud, drain the tubes if the water flow is stopped for any reason.

### Materials

Body and holder	Au plated Be-Cu
Springs, electrical contacts	Au plated Be-Cu
Water tubes	Au plated Be-Cu, 0.125 in. (0.32 cm) O.D.
Connector	304 Stainless steel
Insulators	99% Al <sub>2</sub> O <sub>3</sub>
Wire	Teflon® insulated copper
Solder	Cadmium free silver and indium alloys
Crystal	0.550 in. (1.4 cm) Diameter
Magnet	ALNICO 5 Alloy

### Optional Shutter Assembly 750-005-G1 Specifications:

Temperature	130° C
Materials	300 series stainless steel
Pressure	90-95 PSIG (6.2-6.55 bar) [620-655 kPa] operation 110 PSIG (7.6 bar) [760 kPa] maximum
Shutter	Pneumatically operated, requires solenoid valve, 750-420-G1
Braze	Vacuum process high temperature Ni-Cr Alloy

## SPECIFICATIONS

### Feedthrough Specifications

**NOTE: Sensor / Feedthrough combination specifications are determined by lowest component specification**

#### 1 inch bolt and Ultra-Torr (compression fitting) terminations:

Materials	304 stainless steel, Teflon, ceramic, beryllium nickel, VITON®
Temperature	Operational environment to 300°C with water cooling or 165°C without
Mounting	1.015 in. ±0.010 in. diameter aperture

#### CF 40 welded terminations:

Materials	304 stainless steel, Teflon, ceramic, beryllium nickel
Temperature	Operational environment to 450°C with water cooling or 165°C without
Mounting	Mates with 2¾ in. ConFlat type flanges with 1.375 in. I.D. min.

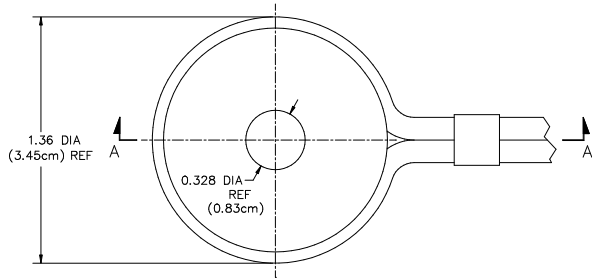
## SPARE PARTS LIST

P/N	Description
007-023	Ceramic Retainer
007-049	Crystal Holder
007-007	Retainer Spring for Crystal Holder
007-044	In-Vacuum Cable (30.75 in. / 78.1 cm)
007-047	Sputtering Head Cover with water lines
007-009	Magnet for Sputtering Head Cover
070-0440	Retaining Ring (installs onto shaft of Shutter Assembly)
070-0442	Retaining Ring (installs onto shaft of Shutter Assembly)
070-0441	Spacer (installs onto shaft of Shutter Assembly)
082-044	2-56 X 0.25 in. Teflon Screw for 750-619-G1 Sputtering Head Body
082-029-P1	2-56 X 1/8 in. Set Screw for 750-619-G1 Sputtering Head Body
750-005-G1	Pneumatic Shutter Assembly
750-009-P2	Pivot Cover (installs onto shaft of Shutter Assembly)
750-046-G2	Shutter Assembly for Pneumatic Shutter Assembly
750-048-P1	Retainer Spring for 007-048 and 750-619-G1 Sputtering Head Bodies
750-115-P4	Coupling (installs into Bellows Assembly)
750-169-P4	Bellows Assembly for Pneumatic Shutter Assembly
750-174-P2	Female Coax Connector for 750-619-G1 Sputtering Head Body
750-175-P1	Insulator for 750-619-G1 Sputtering Head Body
750-188-P3	Leaf Spring for 750-619-G1 Sputtering Head Body
750-619-G1	Sputtering Head Body with coax connector
750-626-P1	Spring for Sputtering Head Cover

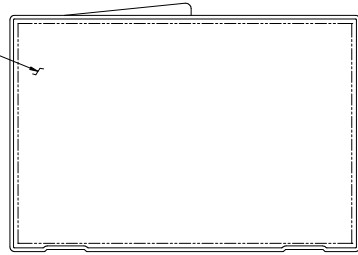
# DIMENSIONS

## 750-618-G1 Sputtering Sensor

KIT- CD THIN FILM MANUAL  
074-5000-G1 (19)

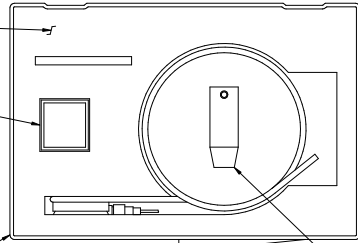


SENSOR HEAD LABEL  
A321-064-P2 (PN 064-015) (14)



SENSOR HEAD PACKING  
B321-037 (PN 007-019) (10)

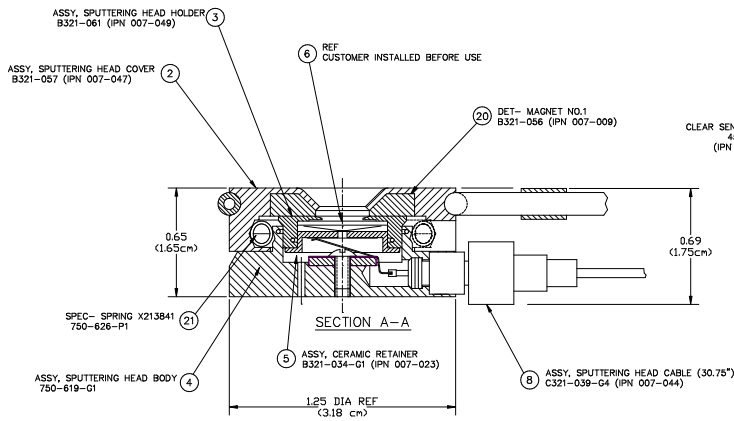
SPUTTERING HEAD CRYSTALS (PKG OF 10)  
B321-055 (PN 008-009-G10) (6)



CLEAR SENSOR BOX  
4505K  
(PN 007-018) (12)

SCALE: FULL

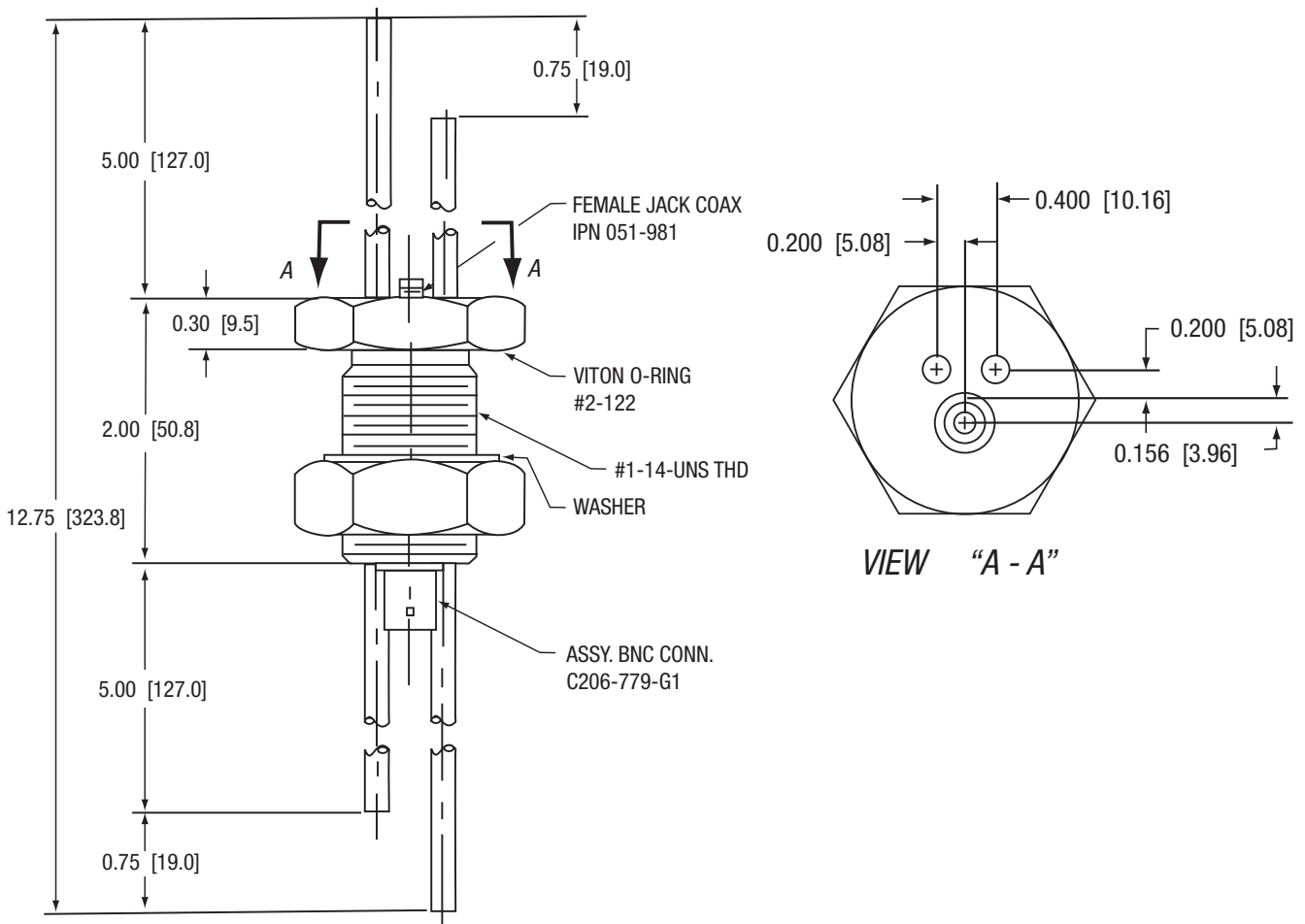
CRYSTAL SNATCHER  
B206-130-G1  
(PN 008-007) (16)



## DIMENSIONS

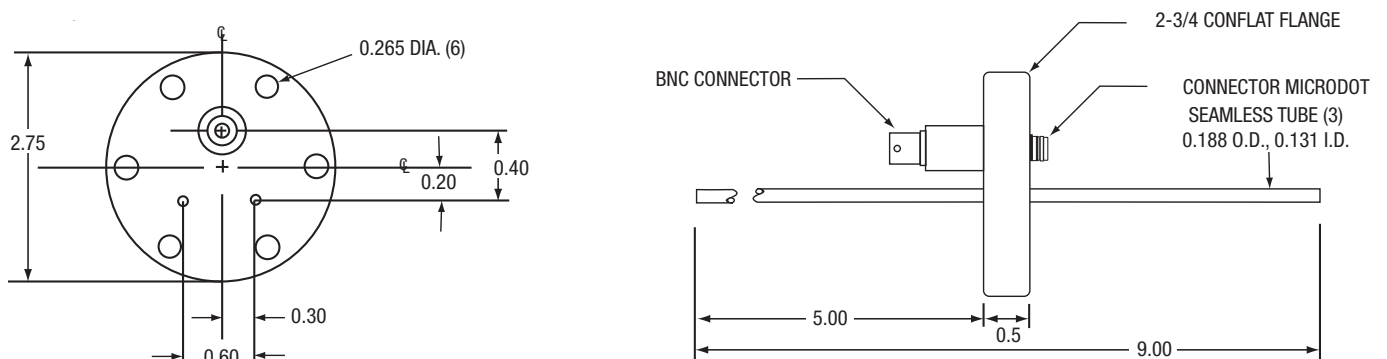
Sputtering Head can be used with the following Feedthroughs:

P/N 002-042



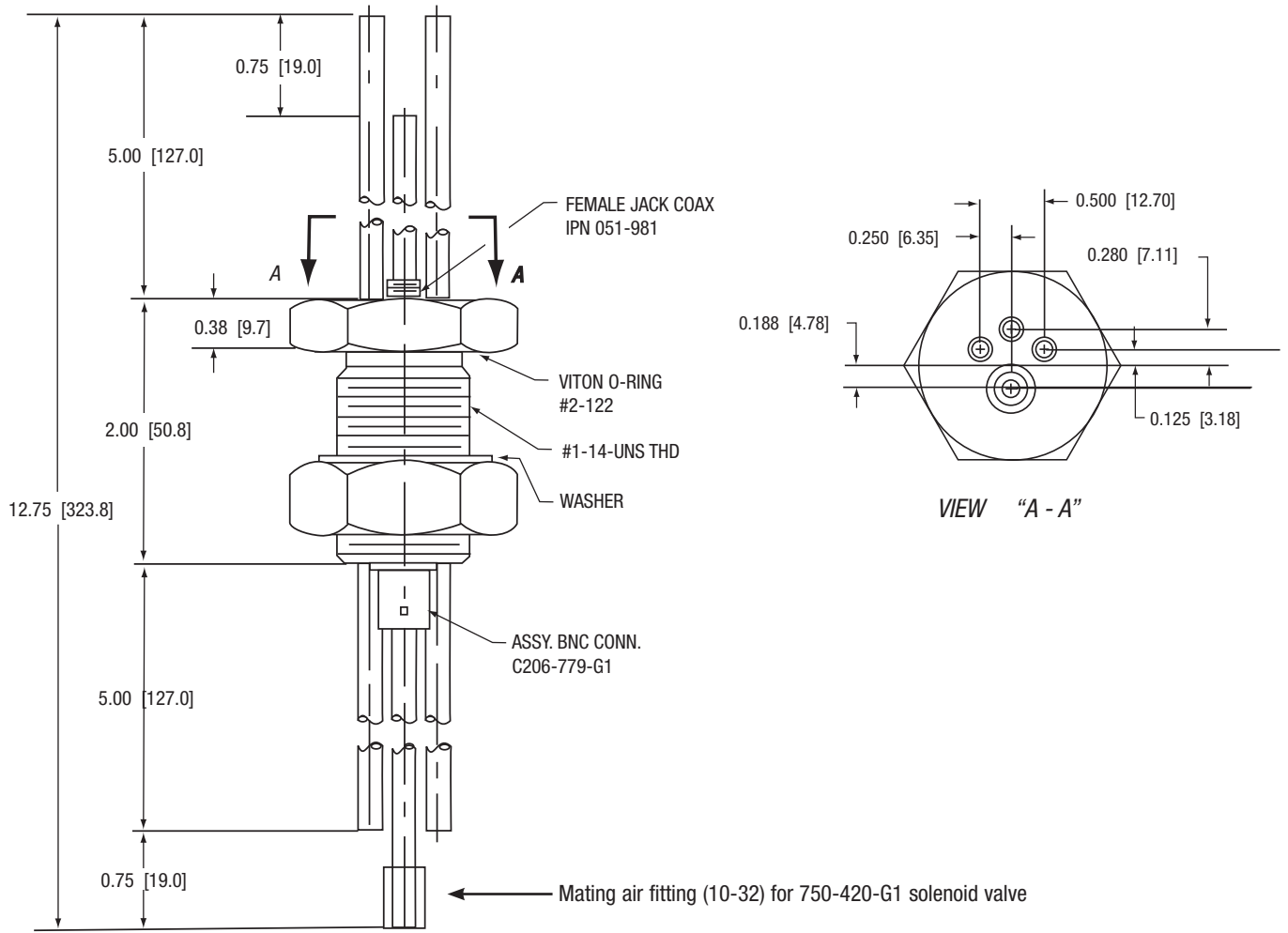
## DIMENSIONS

P/N 002-043



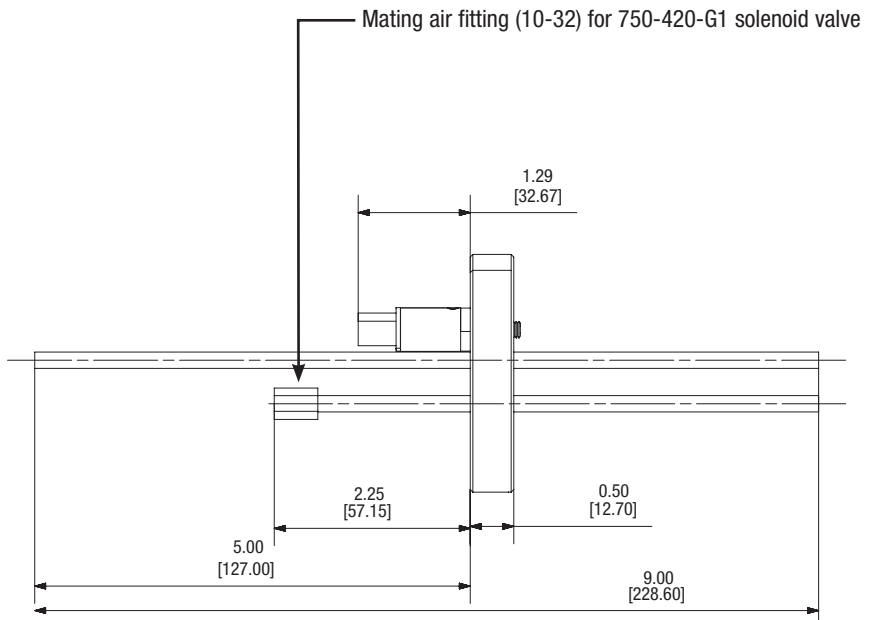
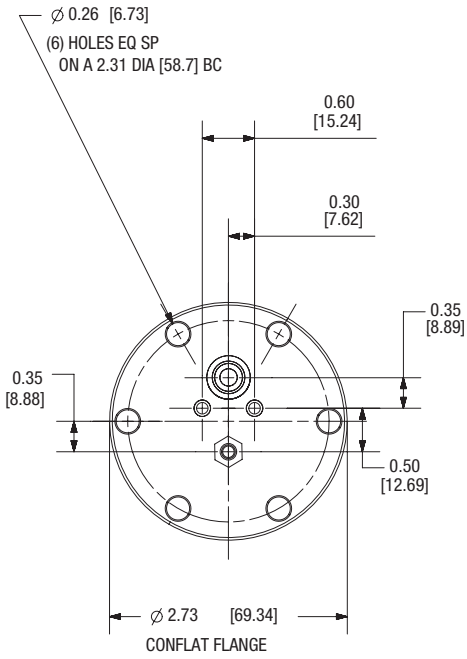
# DIMENSIONS

## P/N 750-030-G1



# DIMENSIONS

## P/N 750-685-G1



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