



# ALD Sensors

---

INFICON ALD Sensors bring the repeatability, precision and durability of quartz crystal microbalance (QCM) measurement to atomic layer deposition (ALD). The ALD Sensor can withstand temperatures up to 450°C and is designed to operate in the harsh environment of an ALD application.

A unique feature of the INFICON ALD Sensor is a gas tube used to purge the back of the crystal and sensor cavity with an inert gas, typically nitrogen. This keeps reactive chamber gases from entering the sensor head and keeps the back of the crystal and electrical contacts free of deposition material.

INFICON ALD Sensors are available in custom welded lengths or with compression fittings for adjustable length without the need for brazing or welding. All configurations use a CF40 (2 ¾ in. ConFlat®) flange feedthrough.

## BENEFITS

---

- Operating temperature up to 450°C
- Gas purge line keeps back of crystal free of deposition material
- Welded CF40 (2 ¾ in. ConFlat) provides custom length with no customer welding required
- O-ring compression fitting option provides easy sensor length adjustment



## ORDERING INFORMATION

### Welded ALD Sensor

750-713-G4 -

Welded sensor - (Crystals sold separately) 750-713-G4

#### Welded Sensor Length

Weld length in centimeters, 10 to 70 cm (4 to 27.5 in.) ..... 10-70  
 Weld length in centimeters, 71 to 99 cm (28 to 39 in.) ..... 71-99

#### NOTE 1:

ALD Sensor orders are measured from center of the crystal to the vacuum side (sealing surface) of the feedthrough. Once a welded sensor order is confirmed, it cannot be cancelled.

### Adjustable Length ALD Sensors

750-717-G2 Adjustable ALD Sensor, length adjustable from 101.6–393.7 mm (4–15.5 in.)  
 750-717-G4 Adjustable ALD Sensor, length adjustable from 101.6–901.7 mm (4–35.5 in.)

### High Temperature Crystals

750-1058-G10 120°C optimized crystals, 6 MHz, 14 mm (0.55 in.), gold, pack of 10  
 750-1059-G10 240°C optimized crystals, 6 MHz, 14 mm (0.55 in.), gold, pack of 10  
 750-1060-G10 285°C optimized crystals, 6 MHz, 14 mm (0.55 in.), gold, pack of 10

## SPECIFICATIONS

	Welded ALD Sensor (PN 750-713-G4-XX)	Adjustable ALD Sensor (PN 750-717-G2 and G4)
Maximum temperature	450°C continuous	130°C Continuous
Feedthrough	2 ¾ in. ConFlat	2 ¾ in. ConFlat equipped with O-ring compression fittings
Sensor/feedthrough connection	Welded (no fillers)	O-ring compression fittings
Gas and coax tubes	Gas: 3.2 mm (0.125 in.) OD (vacuum side) 6.4 mm (0.25 in.) OD (atmosphere side) Coax: 4.8 mm (0.375 in.) OD	Gas: 3.2 mm (0.125 in.) OD Coax: 4.8 mm (0.375 in.) OD
Sensor head size (maximum envelope)	34 x 35 x 24 mm (1.35 x 1.38 x 0.94 in.)	34 x 35 x 24 mm (1.35 x 1.38 x 0.94 in.)
Crystal exchange	Front loading, self-contained package Cam-type locking handle	Front loading, self-contained package Cam-type locking handle
Mounting	Four #4-40 tapped holes on back of sensor body	Four #4-40 tapped holes on back of sensor body
Utilities	Customer to provide means of attaching gas tube to purge gas supply	Customer to provide means of attaching gas tube to purge gas supply
Crystal (not included with sensor)	14 mm (0.55 in.) diameter	14 mm (0.55 in.) diameter
<b>Materials</b>		
Body and holder	304 type stainless steel	304 type stainless steel
Springs	Molybdenum and Inconel X-750	Molybdenum and Inconel X-750
Gas and coax tubes	Seamless 304 stainless steel	Seamless 304 stainless steel
Other mechanical parts	18-8 or 304 stainless steel	18-8 or 304 stainless steel
Insulators	>99% Al2O3 in vacuum; other high density ceramics used elsewhere	>99% Al2O3 in vacuum; other high density ceramics used elsewhere
Wire	1) Ni (in vacuum) 2) Ni plated Cu (elsewhere)	1) Ni (in vacuum) 2) Ni plated Cu (elsewhere)
Braze	Vacuum process high temperature Ni-Cr alloy	Vacuum process high temperature Ni-Cr alloy
O-ring compression fittings	N/A	304 stainless steel, Viton®

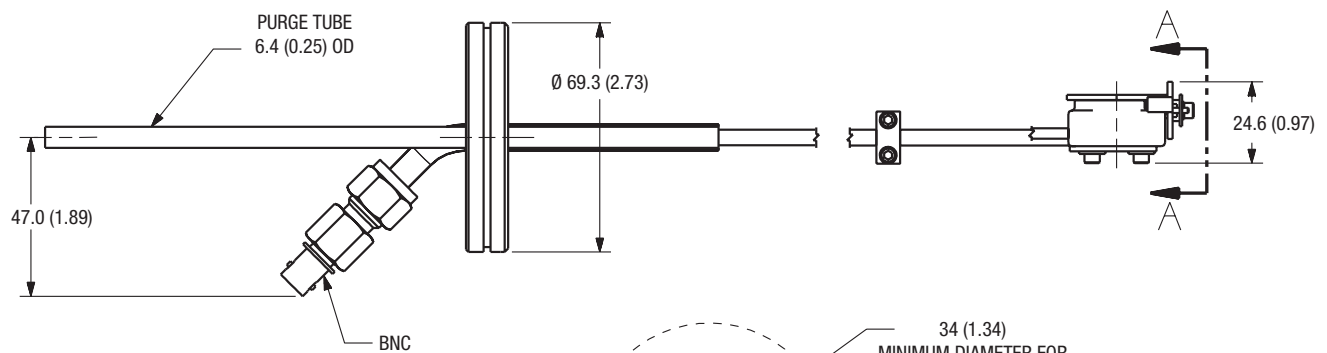
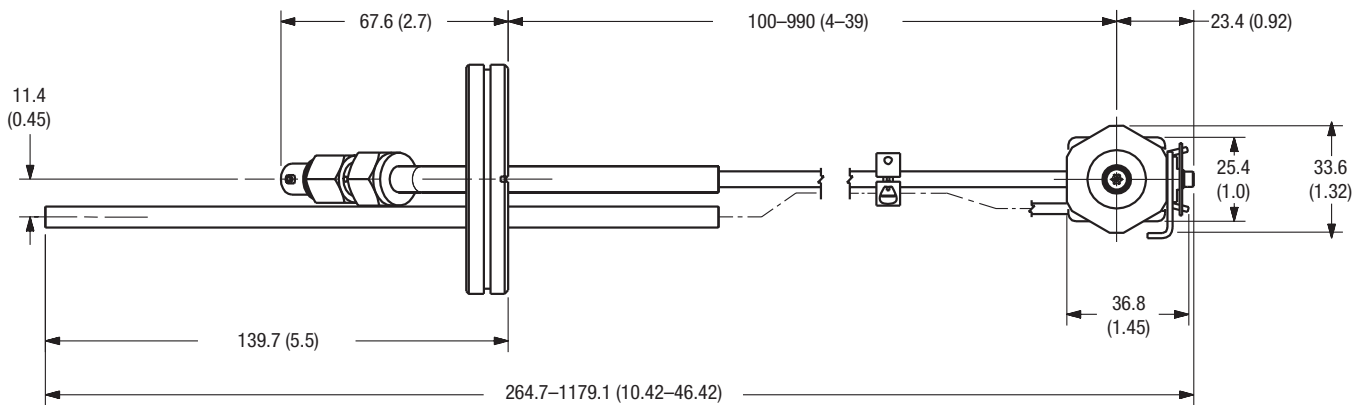
## SPARE PARTS LIST

PN	Description
007-064	Ceramic retainer
007-094	Clamping spring
007-095	Handle
007-098	Female connector (includes ferrules and Nut)
007-099	Bakeable head contact
007-100	Insulator for BNC
007-103	Insulator for bakeable head contact
007-104	BNC body
007-147	#4-40 x 3/8 screw
007-007	Retainer spring (part of crystal holder)

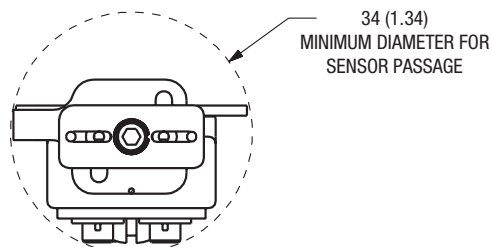
PN	Description
007-228	#4-40 x 5/8 screw
070-0201	#4 split lockwasher
007-267-P2	Spreader bar
007-268-P1	Shoulder washer
007-269-P1	Shoulder washer
084-069-P1	#4-40 x 3/16 screw
750-018-P3	Split clamp
750-018-P5	Split clamp
750-218-G1	Crystal holder

## DIMENSIONS

### Welded ALD Sensor, 750-713-G4-XX



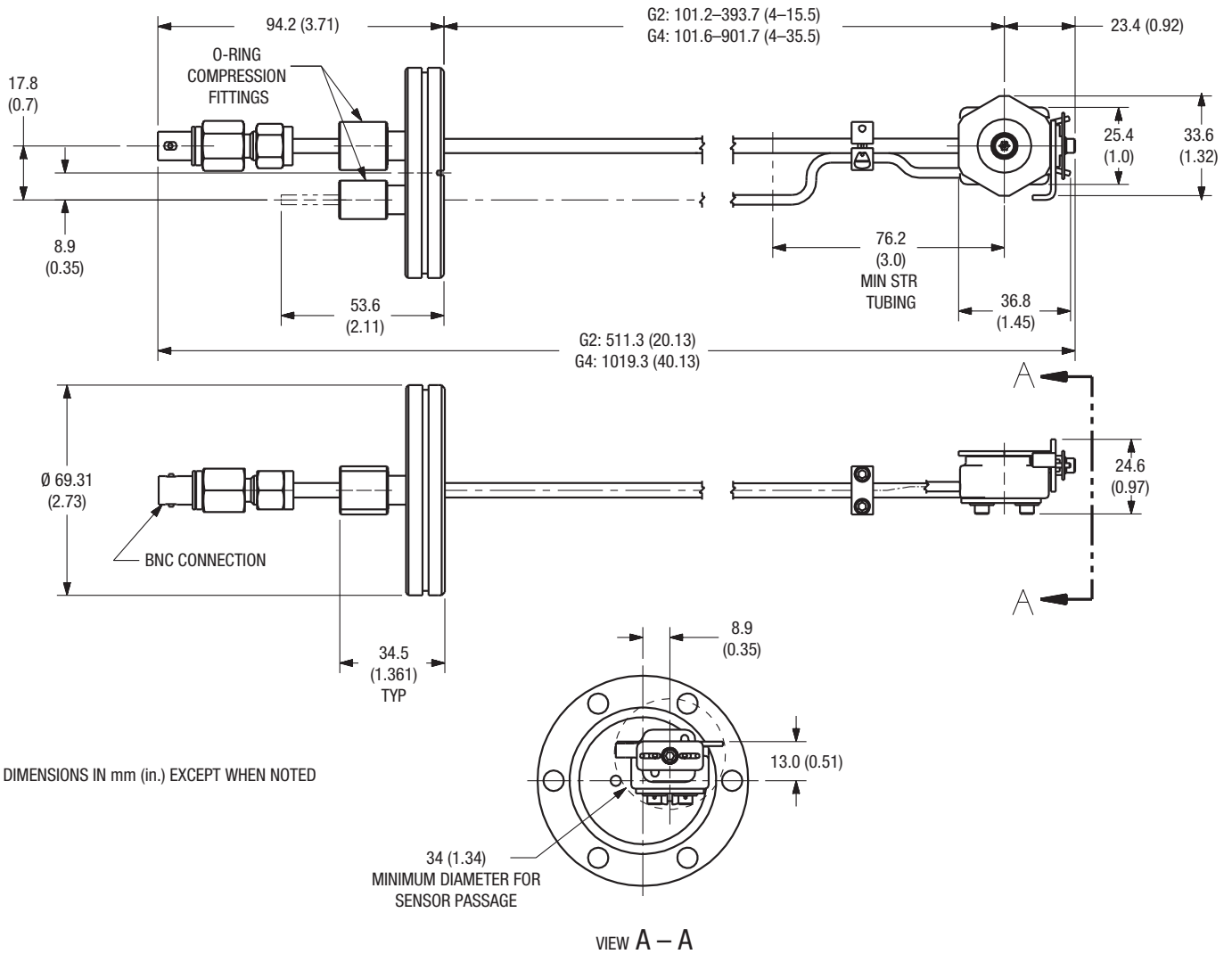
DIMENSIONS IN mm (in.) EXCEPT WHEN NOTED



VIEW A - A  
SCALE 1.5X

# DIMENSIONS

## Adjustable ALD Sensor, 750-717-G2 and G4



DIMENSIONS IN mm (in.) EXCEPT WHEN NOTED

