

# Cool Drawer Dual Sensor

The Cool Drawer™ Dual Sensor is designed for use in critical processes where it is desirable to have a second crystal in the vacuum chamber. Water cooled, cast stainless steel sensor body, two Cool Drawer crystal holders and a pneumatically actuated shutter provide for a rugged sensor head with the extra reliability of a backup crystal. A cleaner, more reliable vacuum system installation is possible as there are no coaxial cables inside the chamber.

## Sensor Configurations

Two sensor configurations are offered: The standard version and the right angle version. The standard version is designed for installation from the side or bottom of the chamber and the cooling tubes and the crystal face are parallel. The right angle version is designed for installation through the top of the vacuum system and the water cooling tubes are perpendicular to the crystal face. In either configuration, sensor head length can range from 4 in. to 26 in. (10 to 66 cm).

## Feedthroughs

INFICON offers two choices for feedthrough types: a 1 in. bolt feedthrough or a CF40 feedthrough.

## Feedthrough Connections

Cool Drawer dual sensors must be ordered in combination with a feedthrough. The sensor / feedthrough connection can be either welded or made with compression fittings.

Compression fittings allow for easy adjustability without the need for brazing or welding. Sensor head length is adjustable from 4 in. to 26 in. (10 to 66 cm). When selected with the welded CF40, the sensor is designed for high temperature processes where reliability is critical. Constructed of stainless steel and ceramic materials, it is suitable for applications requiring high temperature bake out (see specifications).

The Cool Drawer Dual Sensor with the CF40 flange is pre-installed in a special two piece 2¾ in. (7 cm) ConFlat® feedthrough. This allows the sensor head to be rotated independently of the flange and circumvents the dimensional limitations of the CF40 flange. Sensor / Feedthrough length can be specified between 4 in. to 26 in. (10 and 66 cm).



## ADVANTAGES

- Dual crystals
- Cool Drawer crystal holder
- No internal cables
- Crystal shutter
- Available with:
  - CF40 feedthrough
  - 1 in. (2.54 cm) bolt feedthrough
- Bakeable if ordered with welded CF40 flange
- Adjustable length if ordered with compression fittings
- Sensor / Feedthrough combinations available welded to customer specified lengths

## ORDERING INFORMATION

### Cool Drawer Dual Sensor (with conductor tubes)

**Type of sensor (Includes User Manual. Crystals sold separately)**  
 Standard Cool Drawer Dual Sensor (water lines parallel to crystal face) with shutter .....

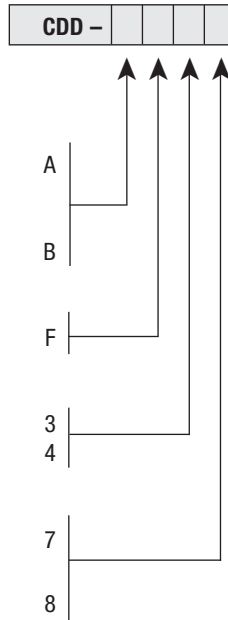
Right Angle Cool Drawer Dual Sensor (water lines perpendicular to crystal face) with shutter .....

**Length of Sensor – SEE NOTE 3**  
 Length (minimum 4 in. to 26 in. [102 mm to 660 mm]). (SEE NOTE 6)

**Feedthrough – SEE NOTE 2**  
 1 in. bolt .....

**Feedthrough Connection**  
 Sensor welded to feedthrough .....

Variable length with Ultra-Torr compression fittings. (Allows the sensor length to be variable by using Ultra-Torr compression fittings)  
 Not available with CF40 feedthrough.



**NOTE 1:**  
 Orders for sensors welded to feedthroughs cannot be entered without signed off dimensional drawing. Once special length or manufactured order is confirmed, it is not cancelable. INFICON will provide a sensor length specification form.

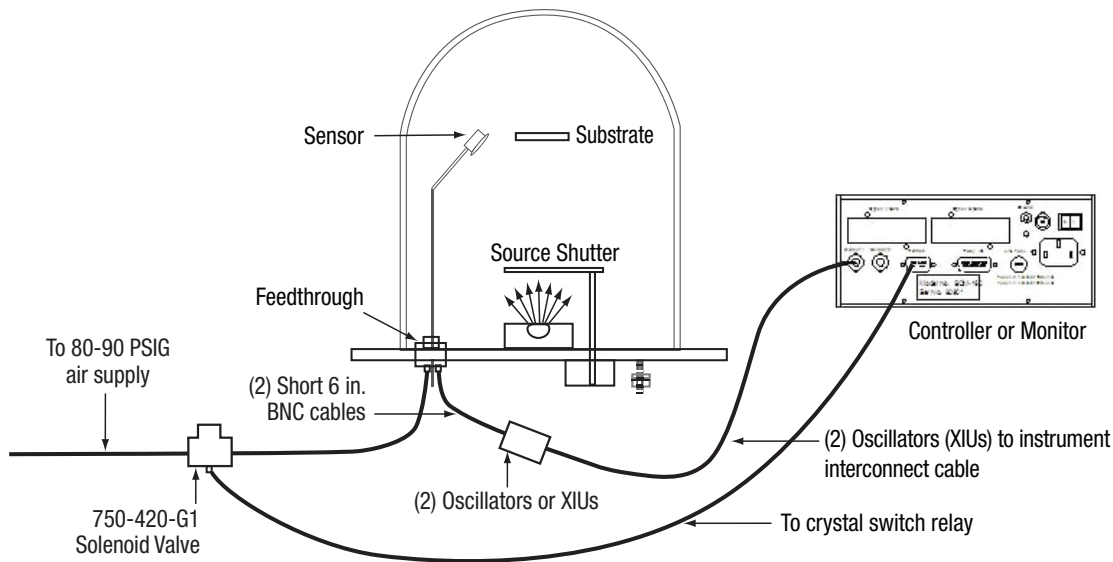
**NOTE 2:**  
 Feedthrough configuration varies depending on options selected (type of feedthrough, and connection). Example: CDD-AF47 and -BF47 use a 2-piece hybrid feedthrough design due to dimensional limits of a standard CF40.

**NOTE 3:**  
 Sensor lengths are measured from center of the crystal to the vacuum side (sealing surface) of the feedthrough (see drawing).

**NOTE 6:**  
 For sensors ordered without a weld connection (option "8"), tubes are made to a length of approximately 30 in. (762mm) for standard sensors and approximately 26 in. (660mm) for right angle sensors.

The following combinations are not available: CDD-AF48, CDD-BF48

Custom parts, special bends and other non-standard parts available – Consult factory



**NOTE:** (2) indicates that two XIU or oscillator packages are required for a typical dual sensor installation.

## SPECIFICATIONS

### CDD Series Cool Drawer Dual Sensor Specifications

Finish	Stainless steel, gold plated Cool Drawer™
Cooling water	0.2 GPM using 1/8 in. O.D. tube, 30° C max. (Do not allow to freeze)
Crystal	Industry standard 0.550 in. diameter
Air supply	55 to 60 PSI regulated
Electrical connection	Two standard female BNCs on atmosphere side

### 1 in. bolt and compression fitting sealed 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

### CF40 welded terminations

Materials	304 stainless steel, ceramic, beryllium nickel
Temperature	Operational environment to 450° C with water cooling or 200° C without
Mounting	Mates with 2 3/4 in. ConFlat® type flanges

## SPARE PARTS LIST

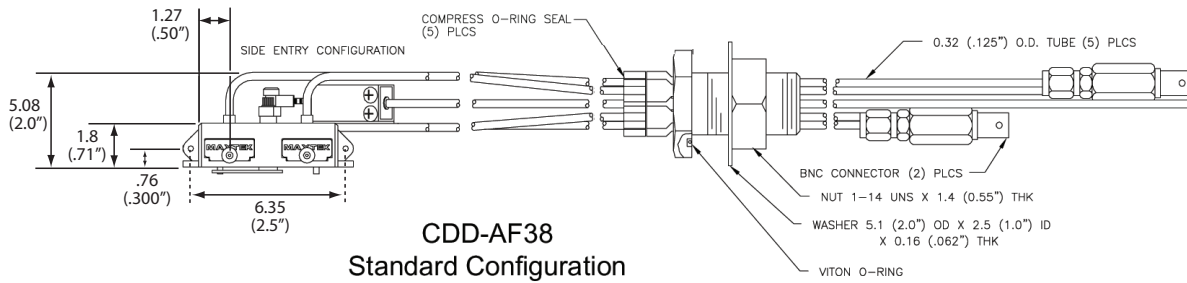
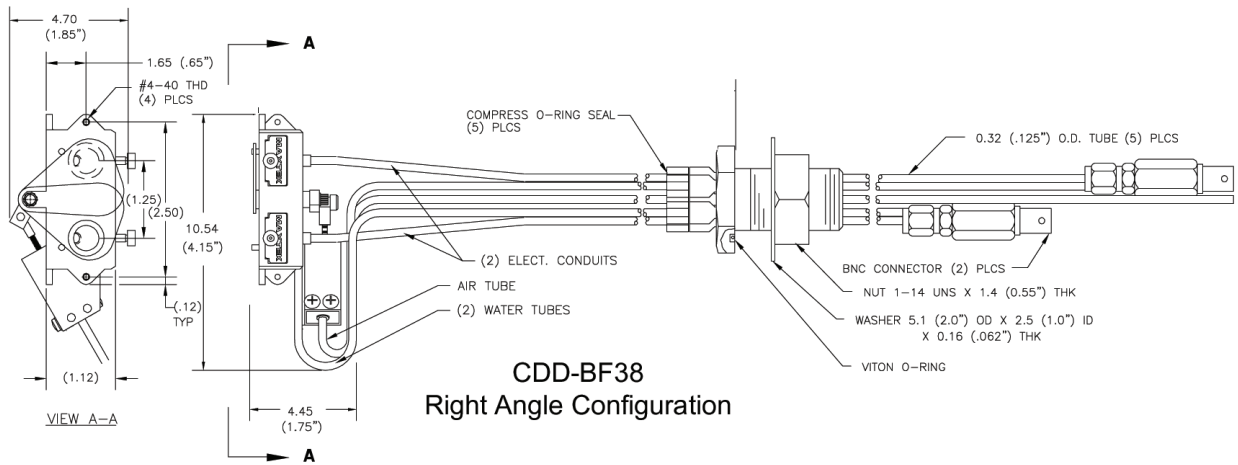
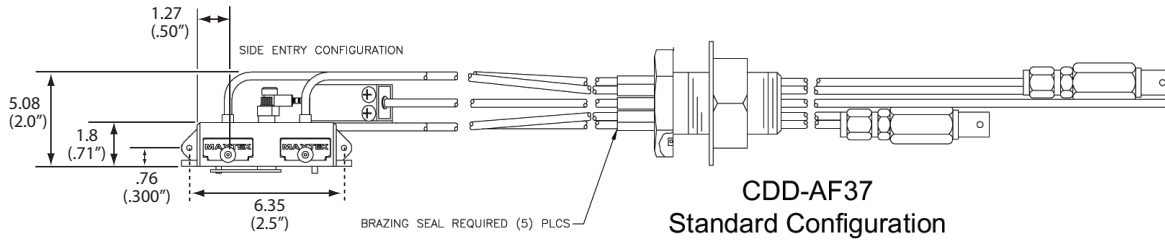
P/N	Description
147401	Shutter
* 147206-2	Bellows with 35 in. tube
147207	Bellows & Cover Assembly (includes all parts marked with a "**")
147402	Link
* 147403	Actuator
* 147406	Bellows Support
* 147407	Bellows Cover
* 147408	Threaded Shaft
147411	Spacer
* 147424	Bellows Tube

* 084-026	Hex Nut
* 084-064	Lockwasher
* 084-205	#4-40 x 3/16 in. Philips Screw
800128	#4 Lockwasher
800371	Shoulder Screw
800372	Washer
* 800416	6-32 x 3/16 in. Set Screw
* 803313	Spring
123223-2	Conduit Brazed Assembly – Short Pin
803102	O-Ring for 5 port adjustable feedthrough
803261	Washer for 5 port adjustable feedthrough

Note: Items marked with "\*\*" are included in 147207

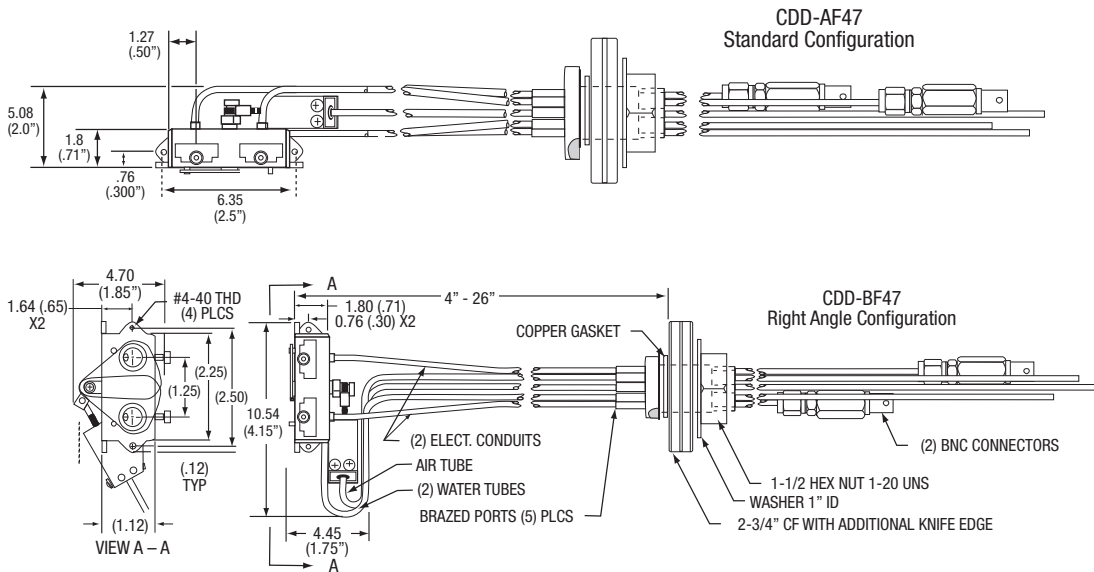
# DIMENSIONS

## CDD-AF37, CDD-AF38 and CDD-BF38 Cool Drawer Dual Sensor / Feedthrough Combinations



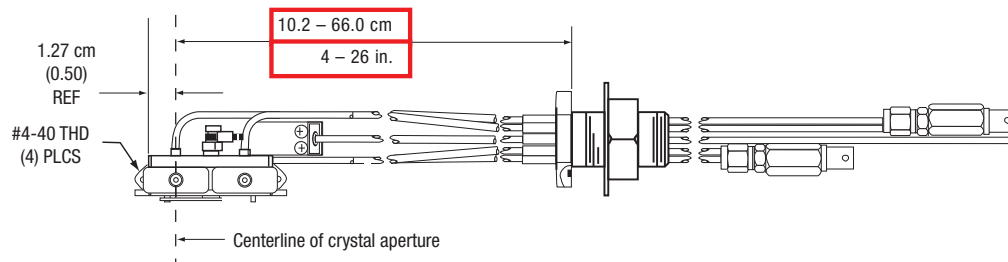
## DIMENSIONS

### CDD-AF47 and CDD-BF47 Cool Drawer Dual Sensor / Feedthrough Combinations



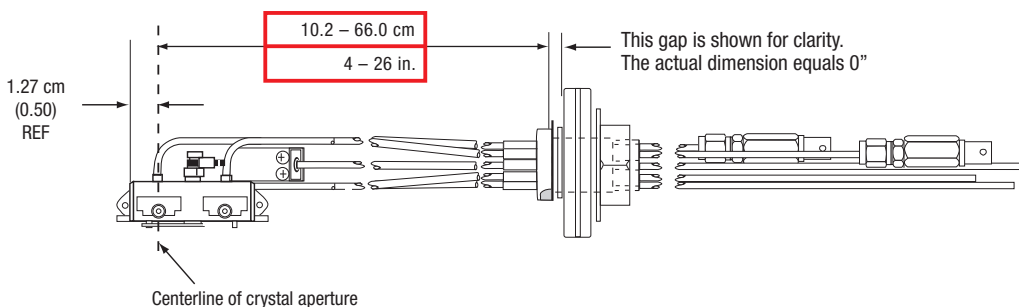
## DIMENSIONS

### Sensor Length Specification for CDD-AF37 Sensor / Feedthrough Combination



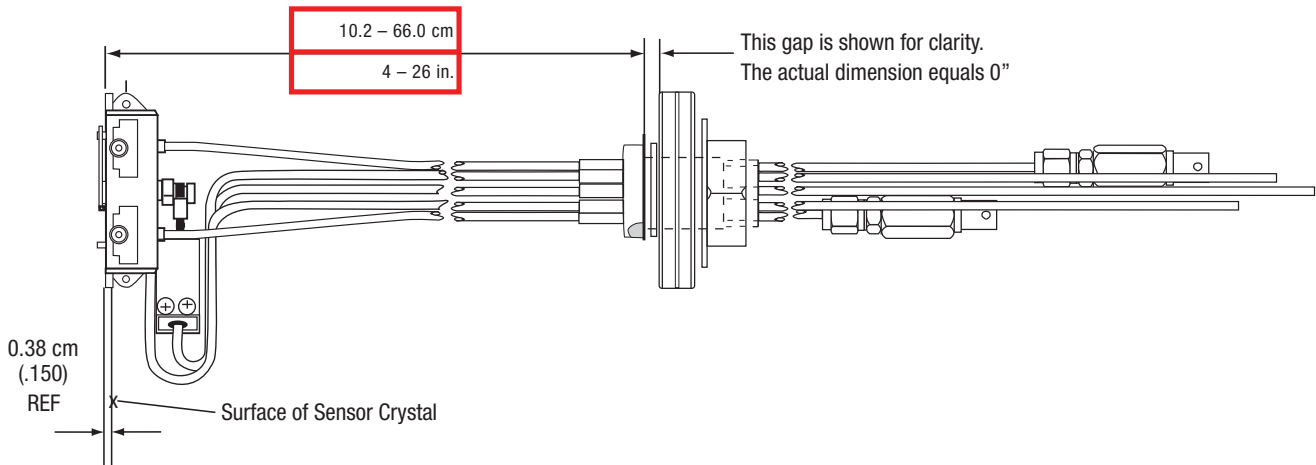
## DIMENSIONS

### Sensor Length Specification for CDD-AF47 Sensor / Feedthrough Combination



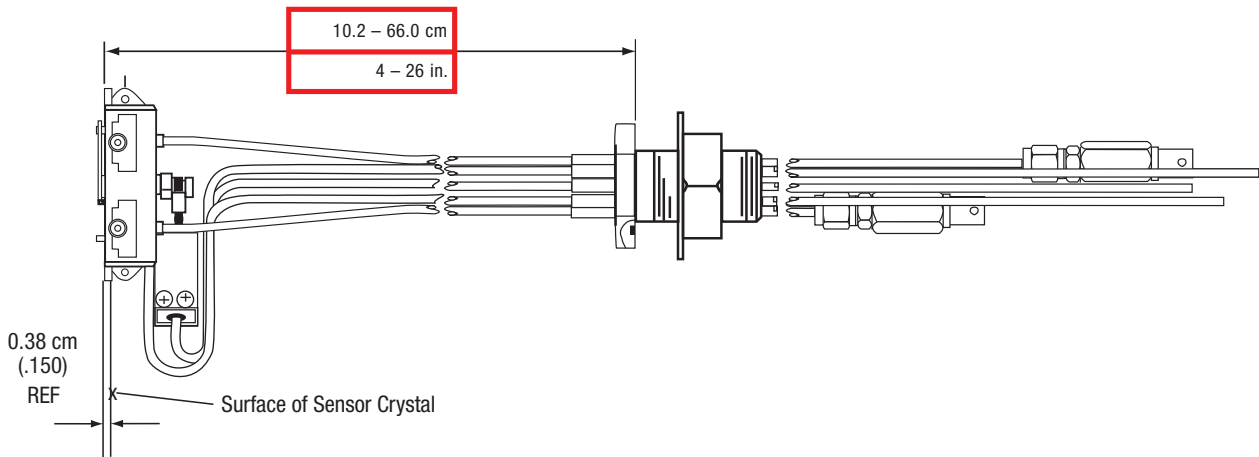
## DIMENSIONS

### Sensor Length Specification for CDD-BF47 Sensor / Feedthrough Combination



## DIMENSIONS

### Sensor Length Specification for CDD-BF37 Sensor / Feedthrough Combination



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