

# 34-ID-C

Looking upstream towards the source

detector  
(Timepix shown)

detector carriage

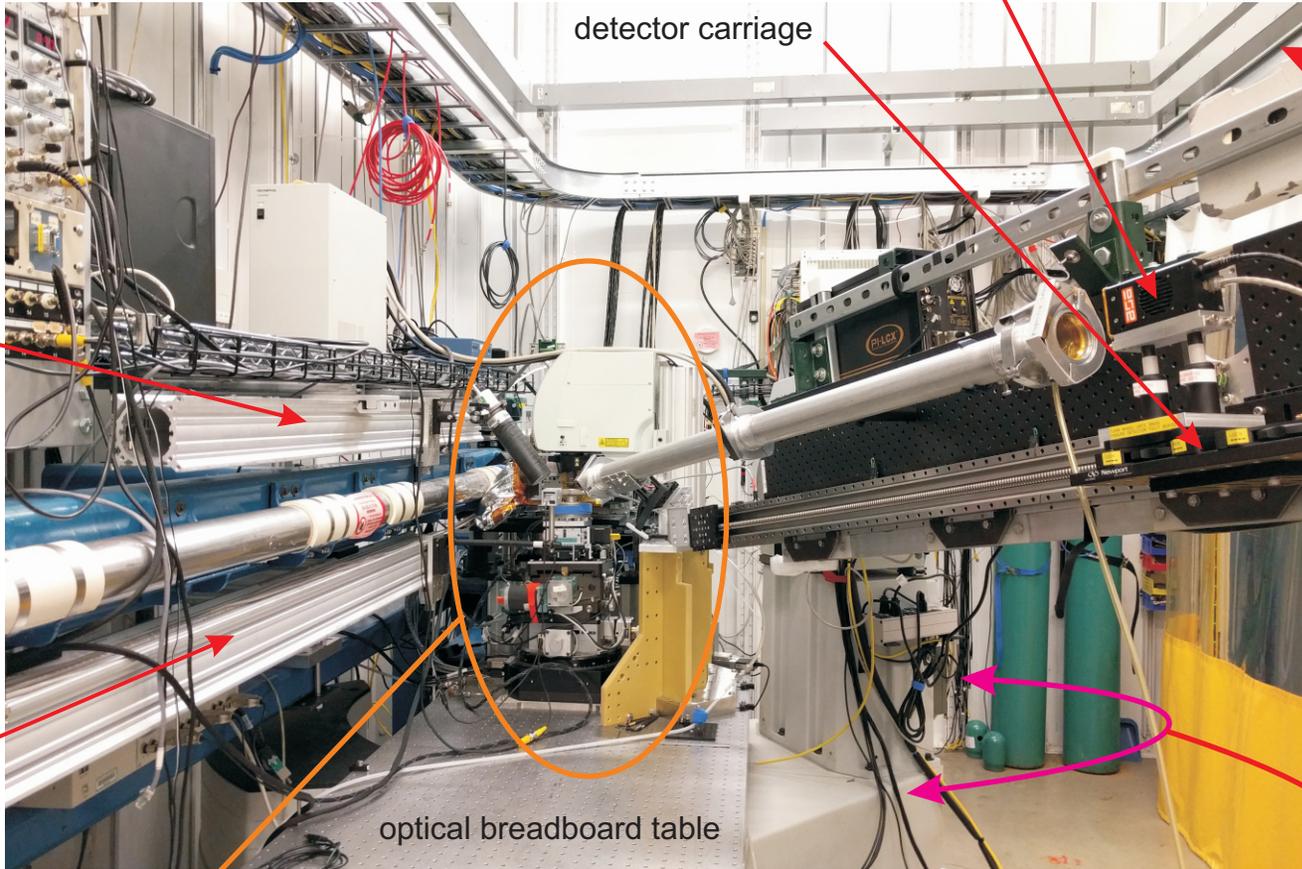
upper  
accessory rail

lower  
accessory rail  
calibrated alignment to  
focused beam

optical breadboard table

Sample Goniometer and other  
close proximity components

“Diffractometer”  
detector positioning



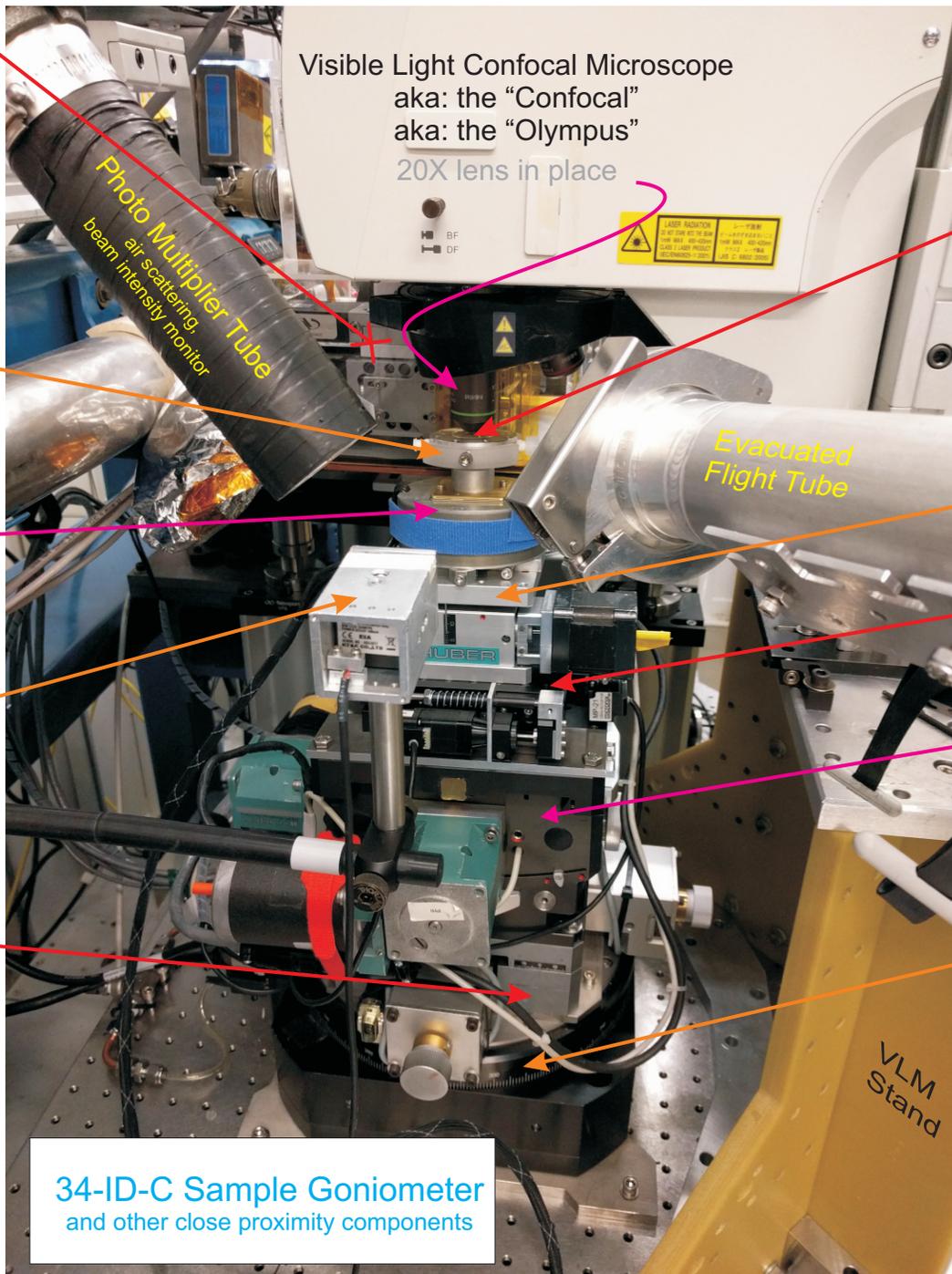
Kirkpatrick-Baez  
beam focusing  
mirror set

Flow Cell  
(one of many possible  
sample environments)

Piezo X, Y, Z stage  
(100um, 100um, 25um  
total motion)

X-Ray "eye"  
CdWO<sub>2</sub> scintillator camera  
("Tischler cam")

manual X,Y  
(for center calibration only)



Visible Light Confocal Microscope  
aka: the "Confocal"  
aka: the "Olympus"  
20X lens in place

Sample

"Z" stage  
14mm total motion

coarse motion X, Y stage  
25mm, 25mm total motion

Phi/Chi  
circle segment  
stage +/-17deg

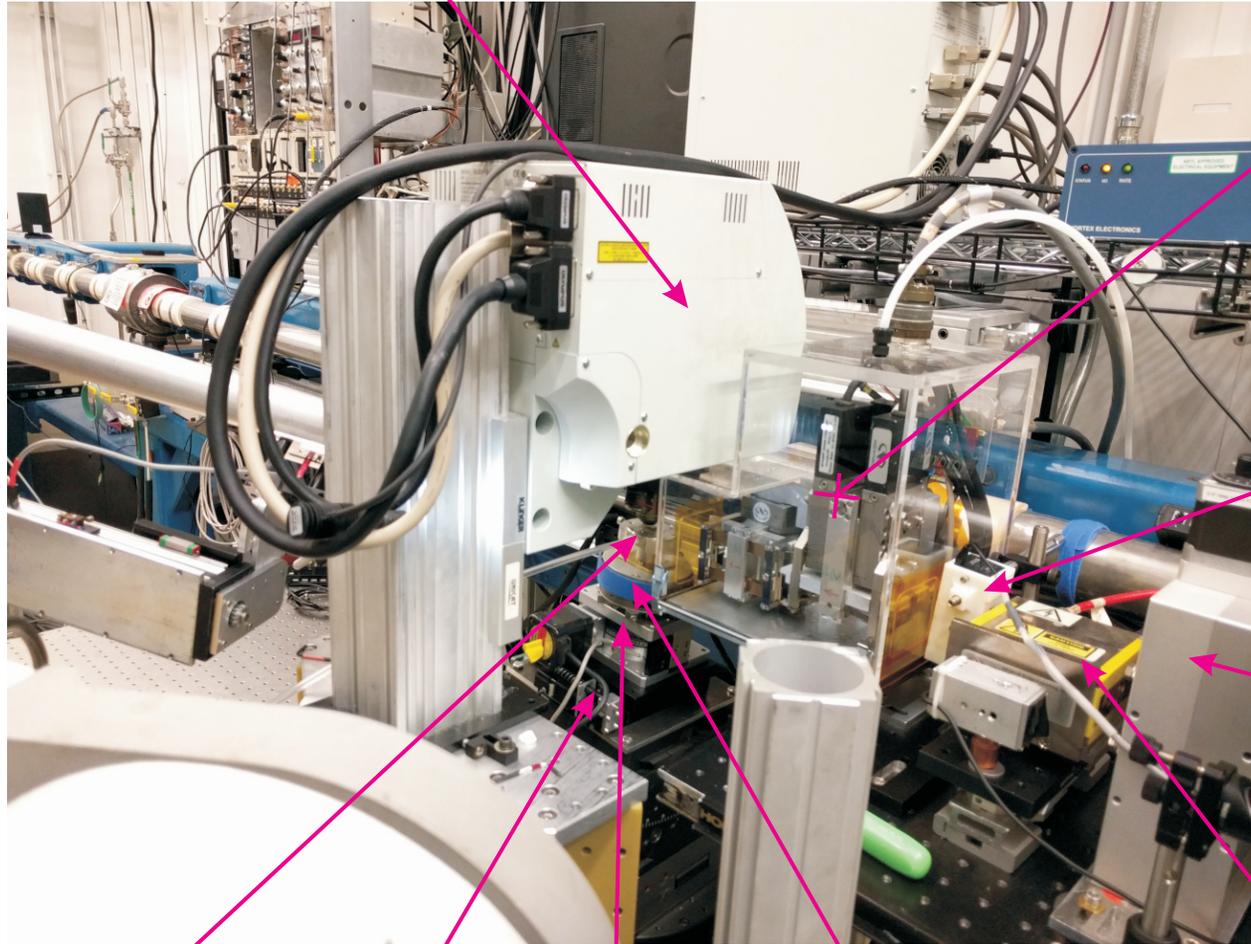
Theta  
air bearing  
rotation stage  
+/- 180deg

34-ID-C Sample Goniometer  
and other close proximity components

VLM  
Stand

Visible Light Confocal Microscope  
aka: the "Confocal"  
aka: the "Olympus"

looking inboard/downstream



Kirkpatrick-Baez  
beam focusing  
mirror set  
K-B mirrors

Vertical  
CdWO<sub>2</sub> scintillator camera  
(ahead of focusing optics  
and after ion chamber  
used for instrument set-up)

Beam Defining Aperture  
"JJ-Slits"

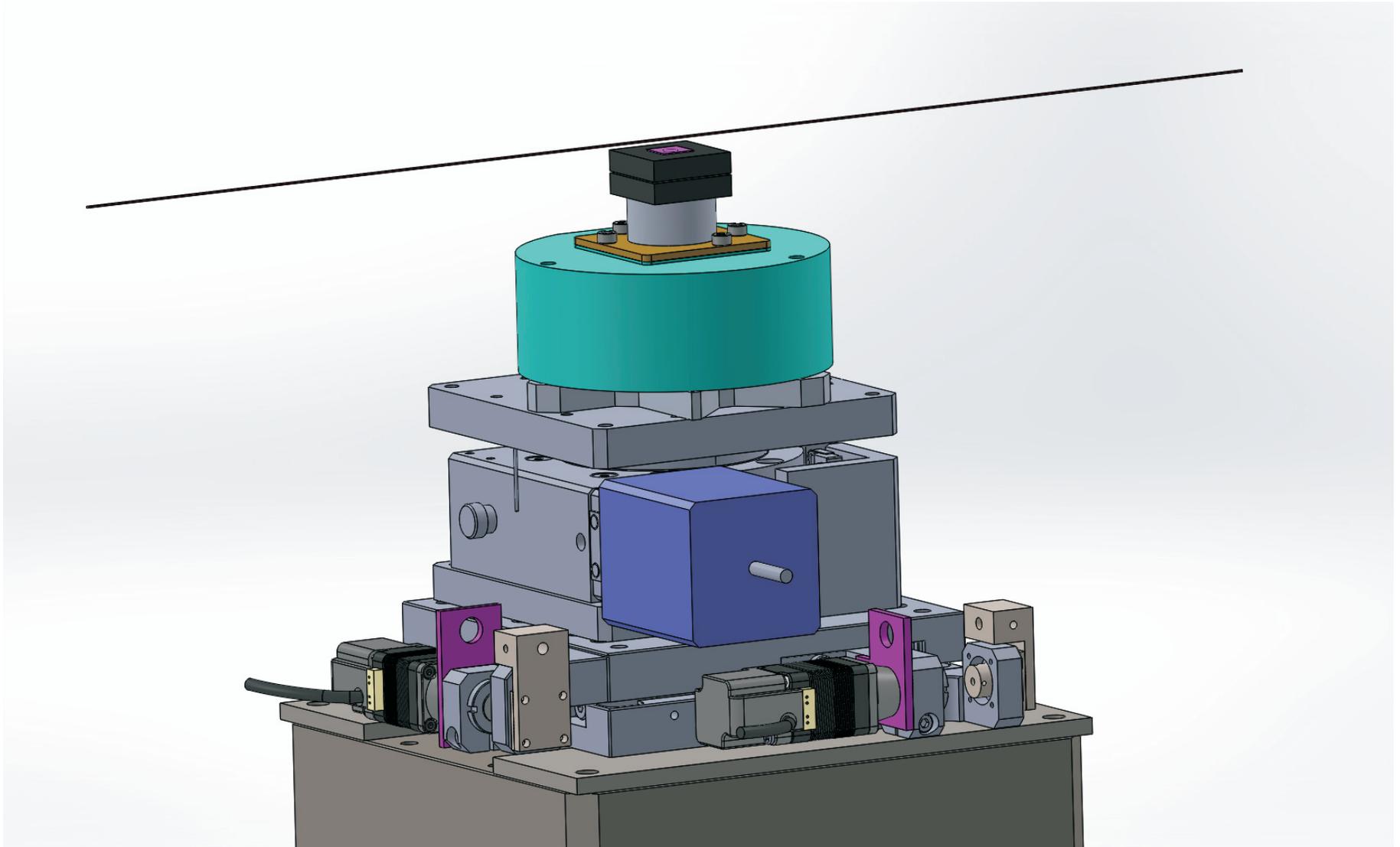
Flow Cell  
(one of many possible  
sample environments)

coarse motion X, Y stage  
25mm, 25mm total motion

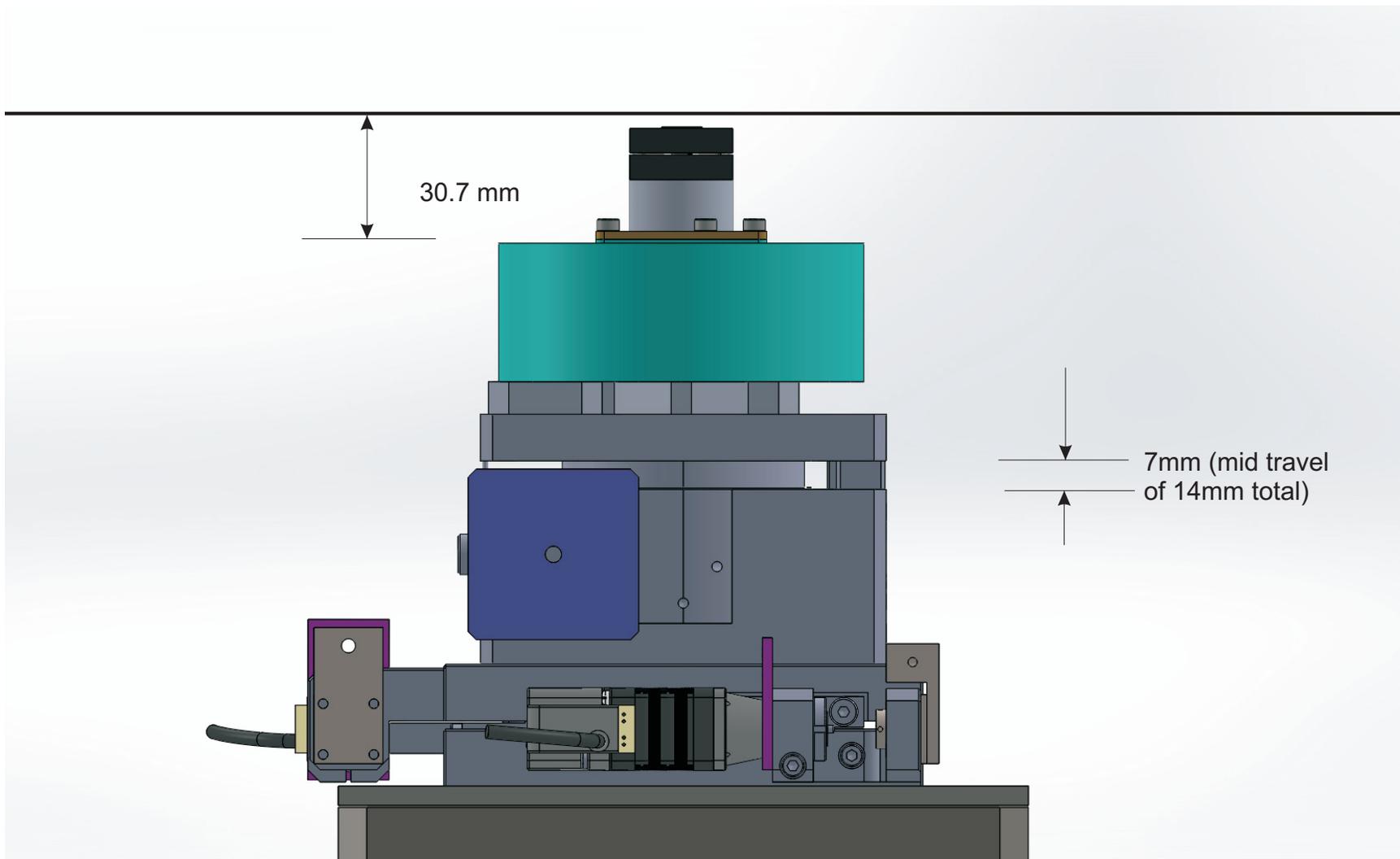
"Z" stage  
14mm total motion

Piezo X, Y, Z stage  
(100um, 100um, 25um  
total motion)

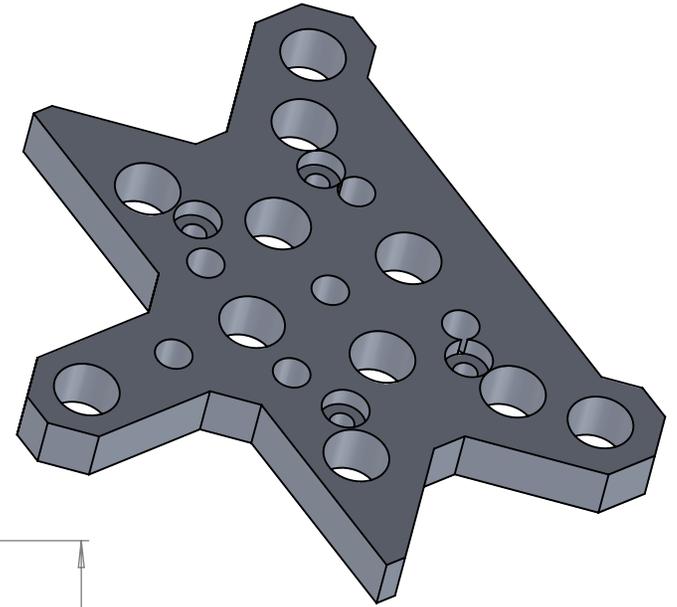
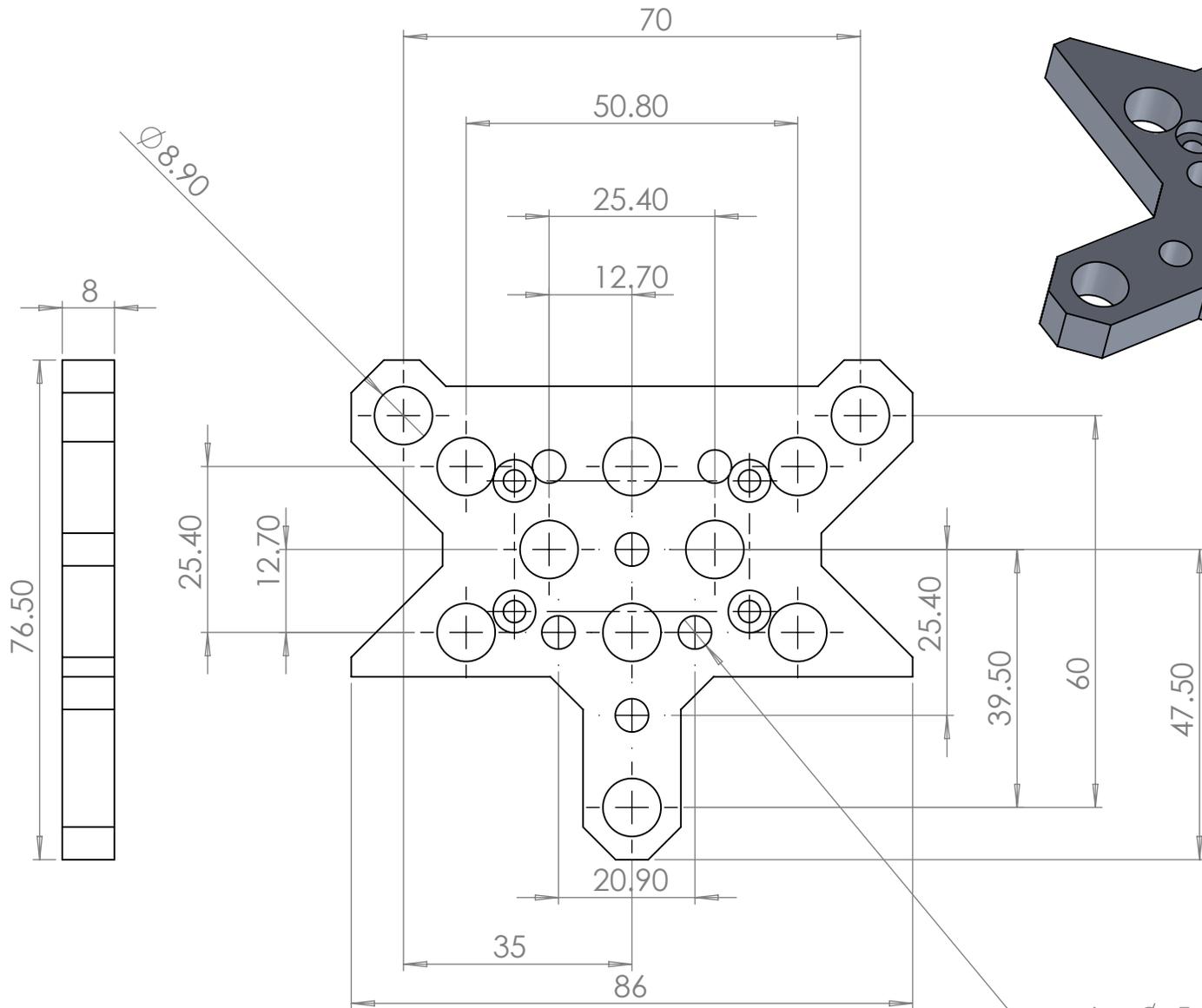
Ionization Chamber  
beam intensity monitor  
"ion chamber"



Shown is a basic, room temperature, ambient environment sample mounting scenario with beam simulation. here the sample is below the beam for clarity

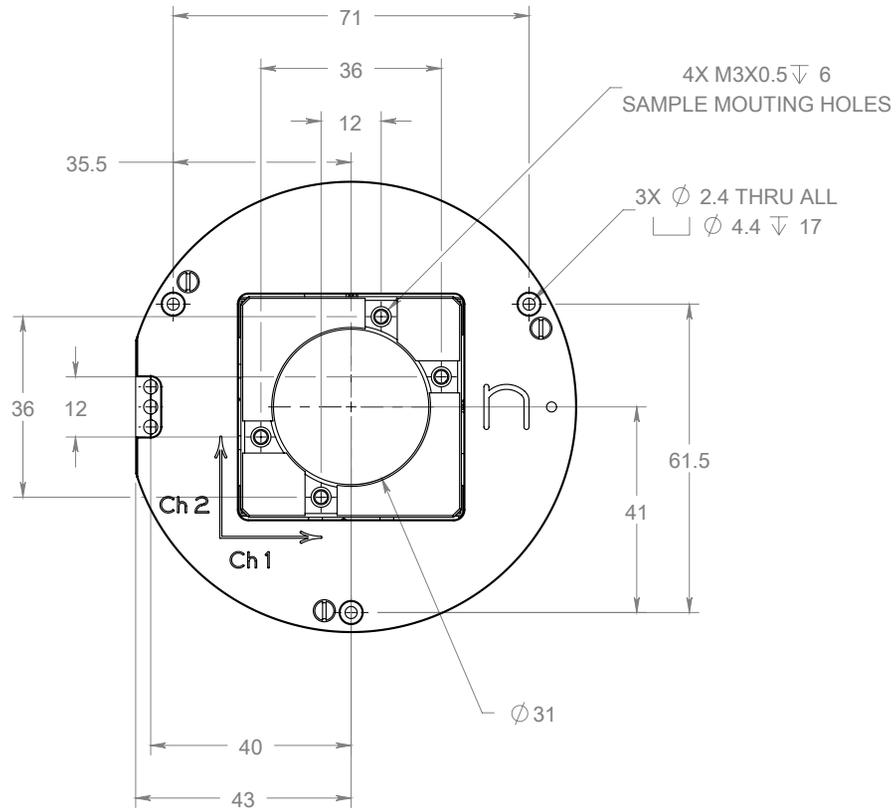
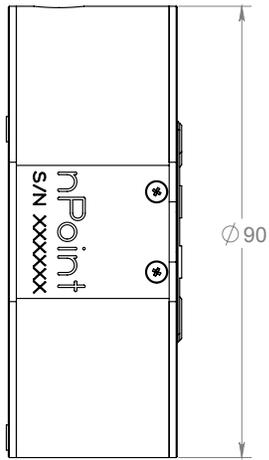


A side view looking inboard (towards the synchrotron). The total motion of the Z stage is 14mm and shown here in mid travel. The mounting plane (top) of the piezo stage is 30.7mm from the beam at mid travel. There should always be a minimum 1mm travel in any device design to ensure proper alignment of the sample (and preferably more).



34-ID-C Peg Board  
Goniometer Mount  
All Dimensions are mm

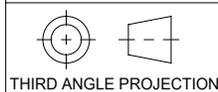
6 x  $\text{Ø} 5.11$  THRU ALL  
1/4-20 UNC THRU ALL



<http://www.npoint.com/products/nanopositioning-stages/item/npxy100z25-219/>



UNLESS OTHERWISE NOTED, ALL UNITS ARE IN MILLIMETERS



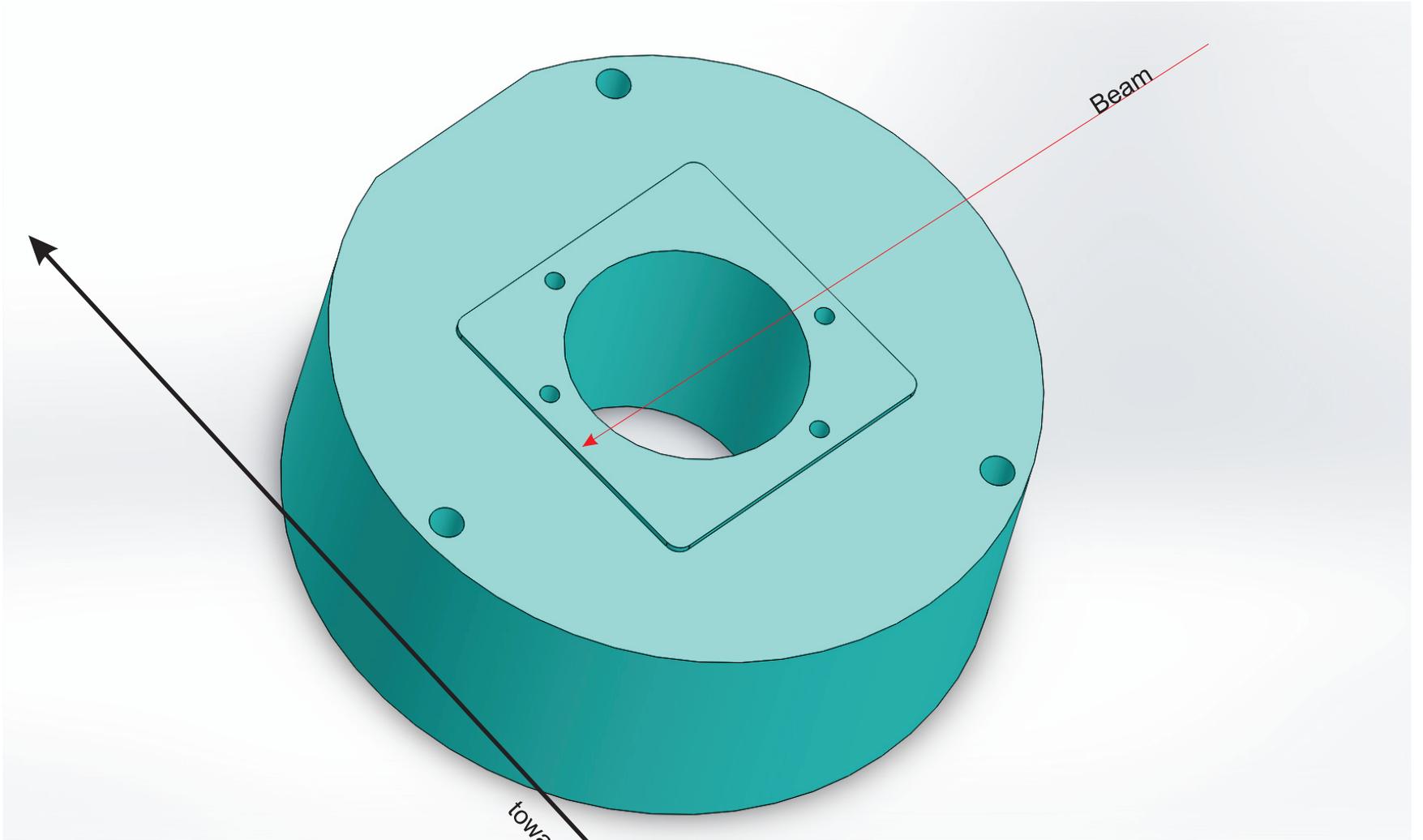
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DESCRIPTION  
**NPXY100Z25-219**  
3-AXIS SCANNER, NON-MAGNETIC  
100um XY / 25um Z

NUMBER  
3715219

REV.  
A

SHEET 1 OF 1



Beam

towards synchrotron