
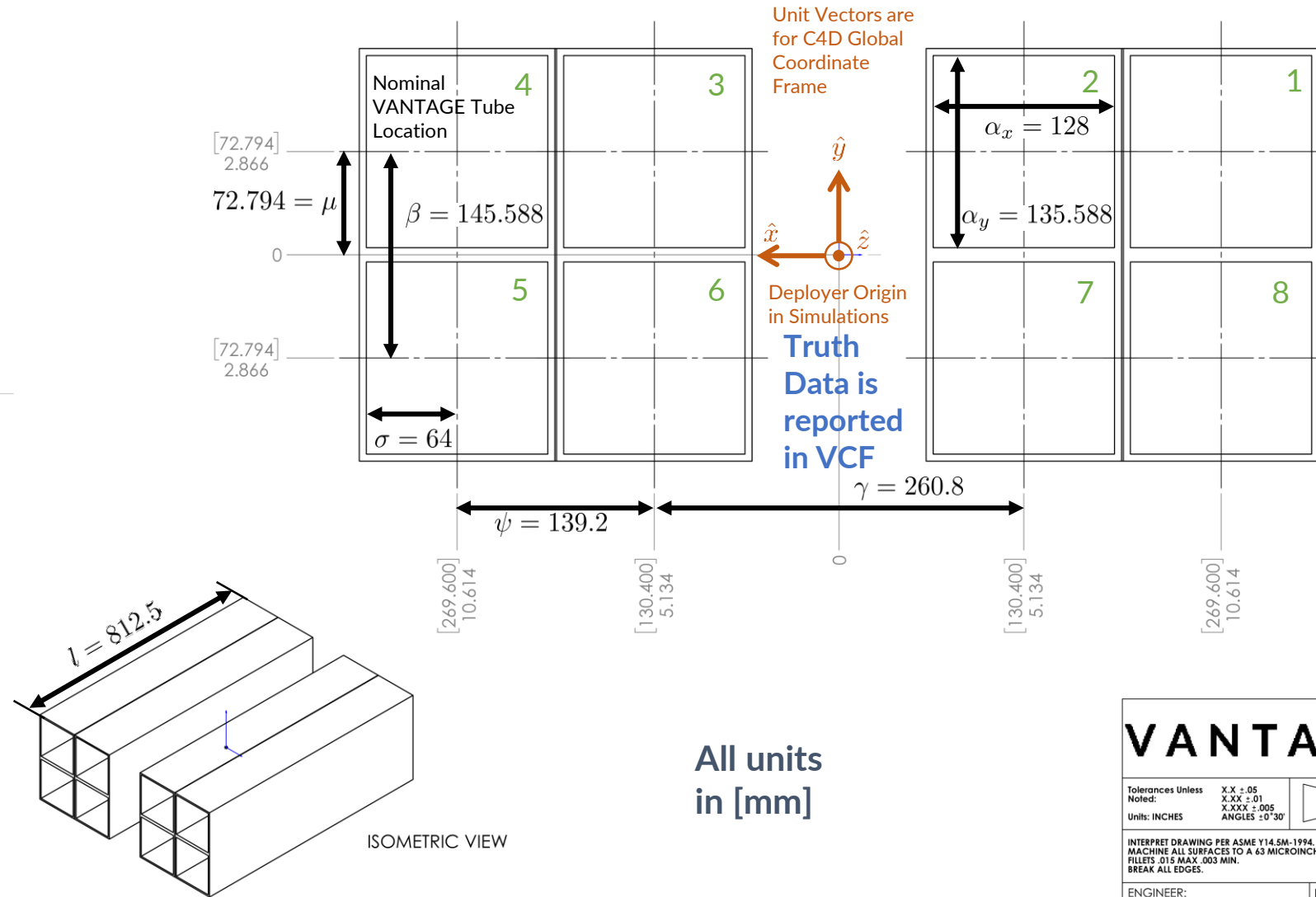




	H								
	G								
	F								
	E								
	D								
	C								
 <p>UNIVERSITY OF COLORADO 1111 ENGINEERING DRIVE BOULDER, CO 80309-0427</p>	B								
DESCRIPTION oRacks Deployer Simulation Assembly	A								
MATERIAL:									
<table border="1"> <thead> <tr> <th>PART NUMBER</th> <th>REV</th> <th>SCALE</th> <th>SHEET</th> </tr> </thead> <tbody> <tr> <td>-----</td> <td>A</td> <td>1:3</td> <td>1 OF 1</td> </tr> </tbody> </table>	PART NUMBER	REV	SCALE	SHEET	-----	A	1:3	1 OF 1	
PART NUMBER	REV	SCALE	SHEET						
-----	A	1:3	1 OF 1						
APPROVED: Aboaf									
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**All units
in [mm]**

<h1>VANTAGE</h1>				UNIVERSITY OF COLORADO	
				1111 ENGINEERING DRIVE BOULDER, CO 80309-0427	
Tolerances Unless Noted: X.X ± .05 X.XX ± .01 X.XXX ± .005 UNITS: INCHES				DESCRIPTION	
INTERPRET DRAWING PER ASME Y14.5M-1994. MACHINE ALL SURFACES TO A 63 MICRORINCH FINISH OR BETTER. FILLETS .015 MAX. .003 MIN. BREAK ALL EDGES.				NanoRacks Deployer Simulation Assembly	
		MATERIAL:			
		PART NUMBER	REV	SCALE	SHEET
			A	1:3	1 OF 1
ENGINEER: Aboaf		DRAWN BY: Aboaf		APPROVED: Aboaf	
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NOTES:

VANTAGE / Optical Frame Definition

$$12.51 = \phi 12.51$$


$$-18.25 = \xi$$

$$-37.25 = \nabla$$

$$-40.25 = \rho$$

Deployer Origin
in Simulations

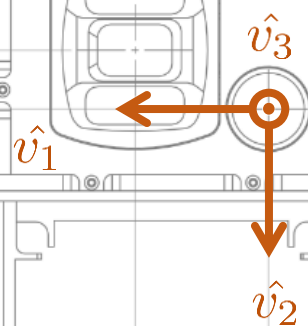
All units
in [mm]

VANTAGE		 UNIVERSITY OF COLORADO 1111 ENGINEERING DRIVE BOULDER, CO 80309-0427	
Tolerances Unless Noted: Units: INCHES		X.X ± .05 X.XX ± .01 X.XXX ± .005 ANGLES ± 0° 30'	
INTERPRET DRAWING PER ASME Y14.5M-1994. MACHINE ALL SURFACES TO A 43 MICROINCH FINISH OR BETTER. FILLETS .015 MAX .003 MIN. BREAK ALL EDGES.		DESCRIPTION VANTAGE Sensor Boresight Locations	
ENGINEER: ABOAF		DRAWN BY: ABOAF	
APPROVED: ABOAF		PART NUMBER: --- REV: --- SCALE: 1:2 SHEET: 1 OF 1	
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VANTAGE / Optical Frame Definition (VCF / CCF)

NOTES:

[54.510]
2.146
[31.748]
1.250





THIS IS THE FRAME TRUTH DATA WILL BE REPORTED IN

All units in [mm]

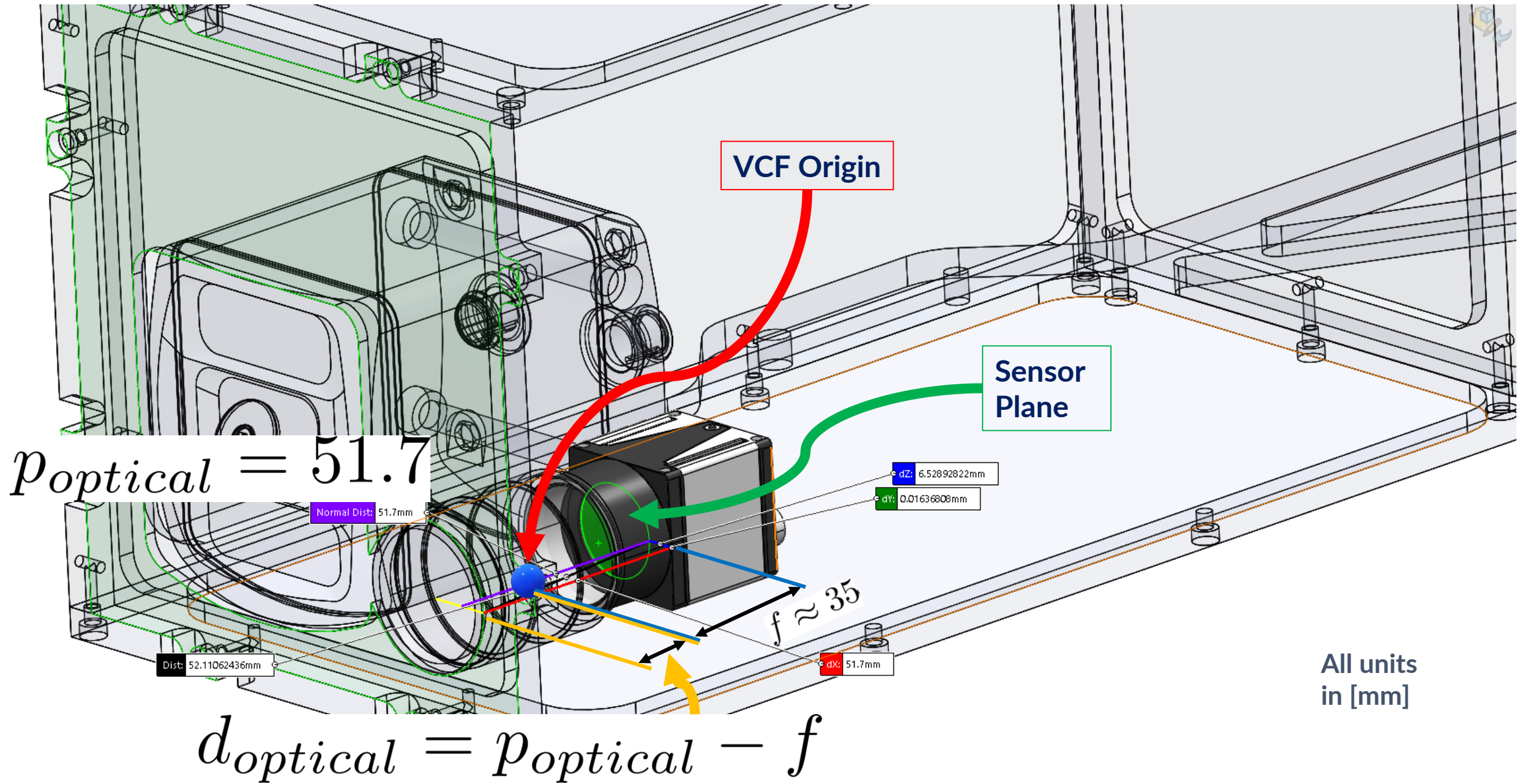
The frame origin is located at the aperture point of the camera-lens system.

This will be determined by calibration of the camera-lens system.

Rough focal length, f , is 35 [mm]

VANTAGE				UNIVERSITY OF COLORADO	
				1111 ENGINEERING DRIVE BOULDER, CO 80309-0427	
Tolerances Unless Noted: Units: INCHES				DESCRIPTION VANTAGE Sensor Boresight Locations	
INTERPRET DRAWING PER ASME Y14.5M-1994. MACHINE ALL SURFACES TO A 63 MICROINCH FINISH OR BETTER. FILLET .015 MAX. .003 MIN. BREAK ALL EDGES.				MATERIAL: --	
		PART NUMBER --		REV --	SHEET 1 OF 1
ENGINEER: ABOAF		DRAWN BY: ABOAF		APPROVED: ABOAF	
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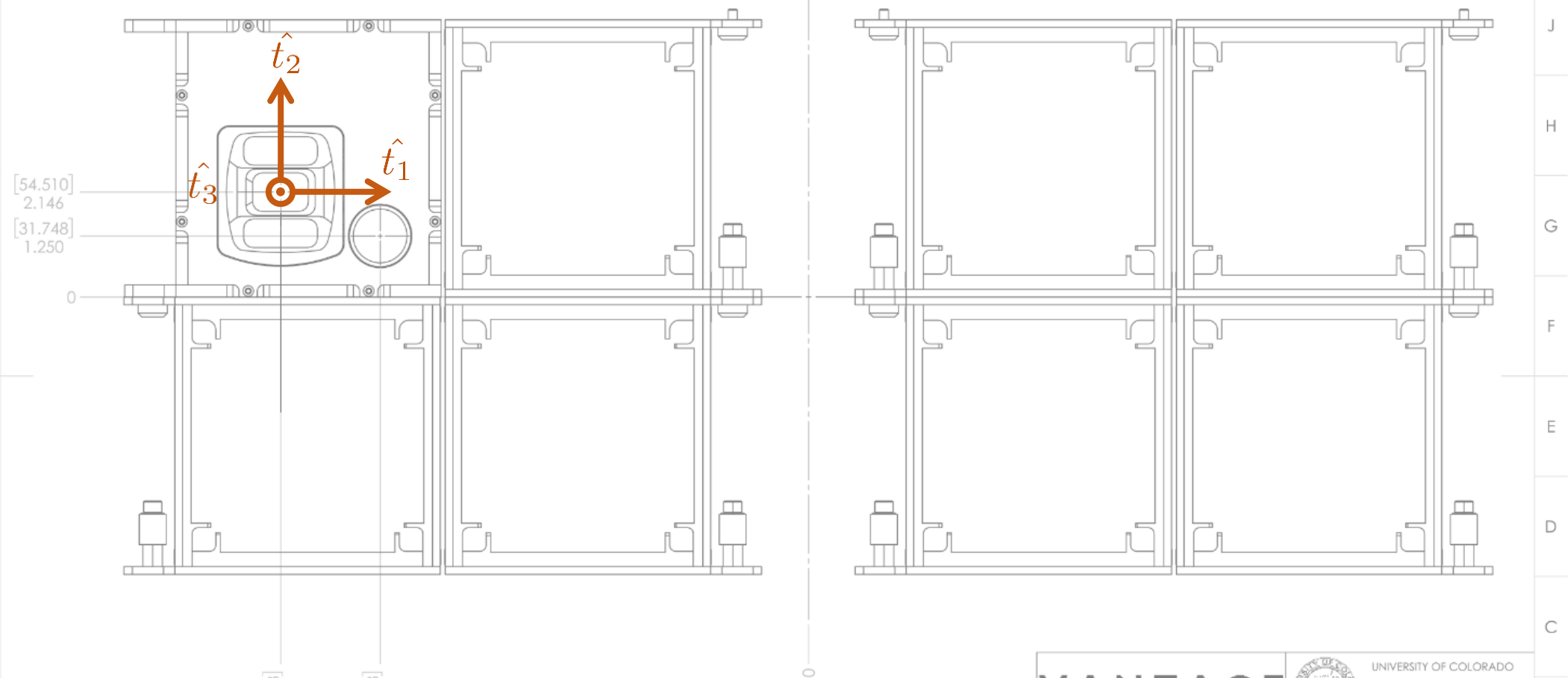
Location of Optical Sensor Plane and VCF Origin Relative to VANTAGE Front Plate




The frame origin is located on the glass of the ToF lens.

ToF Frame Definition (TCF)

NOTES:



All units in [mm]

VANTAGE		 UNIVERSITY OF COLORADO 1111 ENGINEERING DRIVE BOULDER, CO 80309-0427	
Tolerances Unless Noted: Units: INCHES		X.X ± .05 X.XX ± .01 X.XXX ± .005 ANGLES ± 0° 30'	
INTERPRET DRAWING PER ASME Y14.5M-1994. MACHINE ALL SURFACES TO A 63 MICROINCH FINISH OR BETTER. FILLETS .015 MAX .003 MIN. BREAK ALL EDGES.		DESCRIPTION VANTAGE Sensor Boresight Locations MATERIAL: ---	
ENGINEER: ABOAF	DRAWN BY: ABOAF	APPROVED: ABOAF	PART NUMBER --
PROPRIETARY AND CONFIDENTIAL: The information contained in this drawing is the sole property of the University of Colorado. Any reproduction in part or as a whole without written consent is prohibited.		SCALE 1:2	SHEET 1 OF 1

Location of TCF Origin Relative to VANTAGE Front Plate

TCF Origin

$$d_{tof} = 4.8$$

Normal Dist: 4.8mm

Dist: 19.12030502mm

Area: 11269.2871805mm²
Perimeter: 1075.19650833mm

dZ: 18.508mm

dx: 4.8mm

Point2

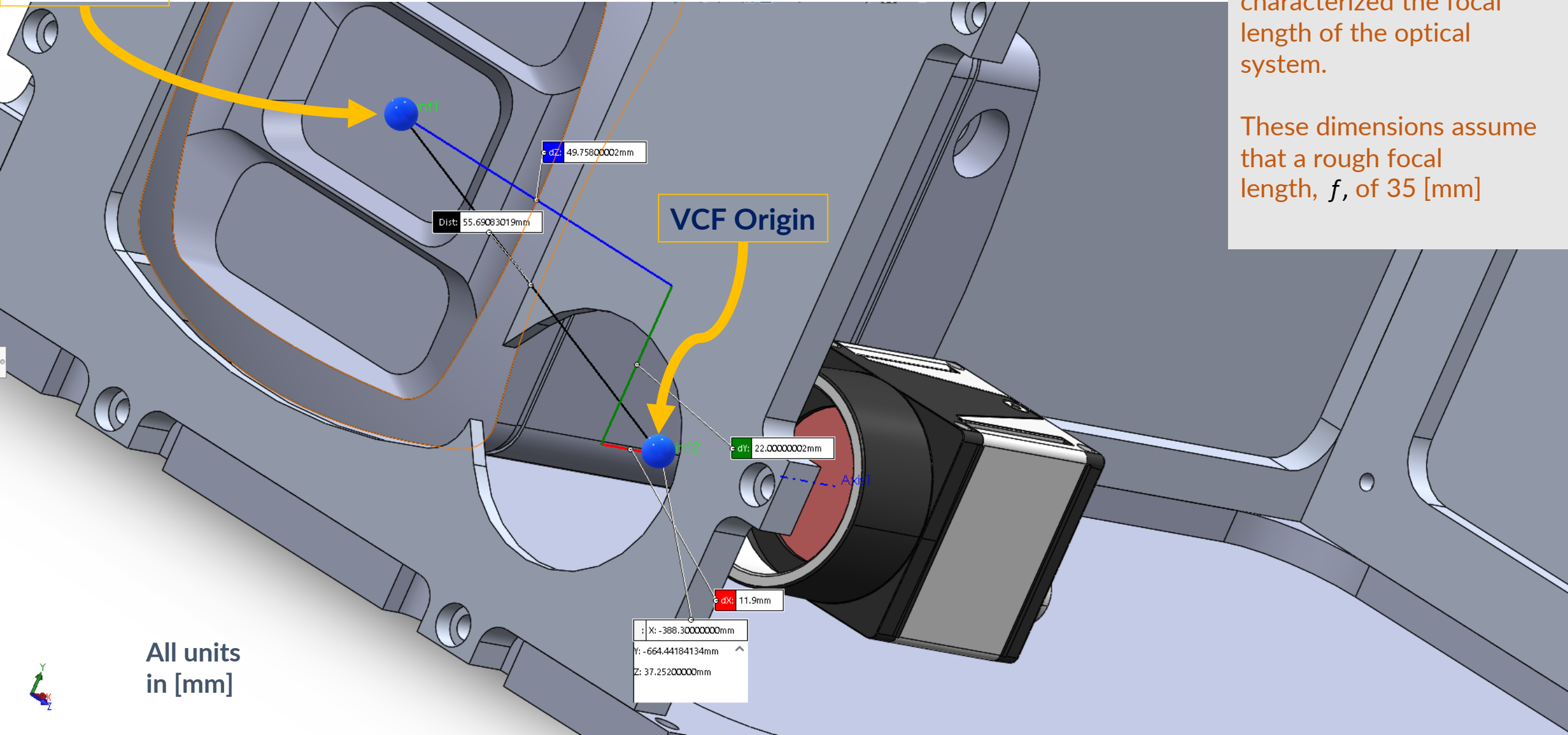
Axis1

All units
in [mm]



TCF to VCF Distance

TCF Origin



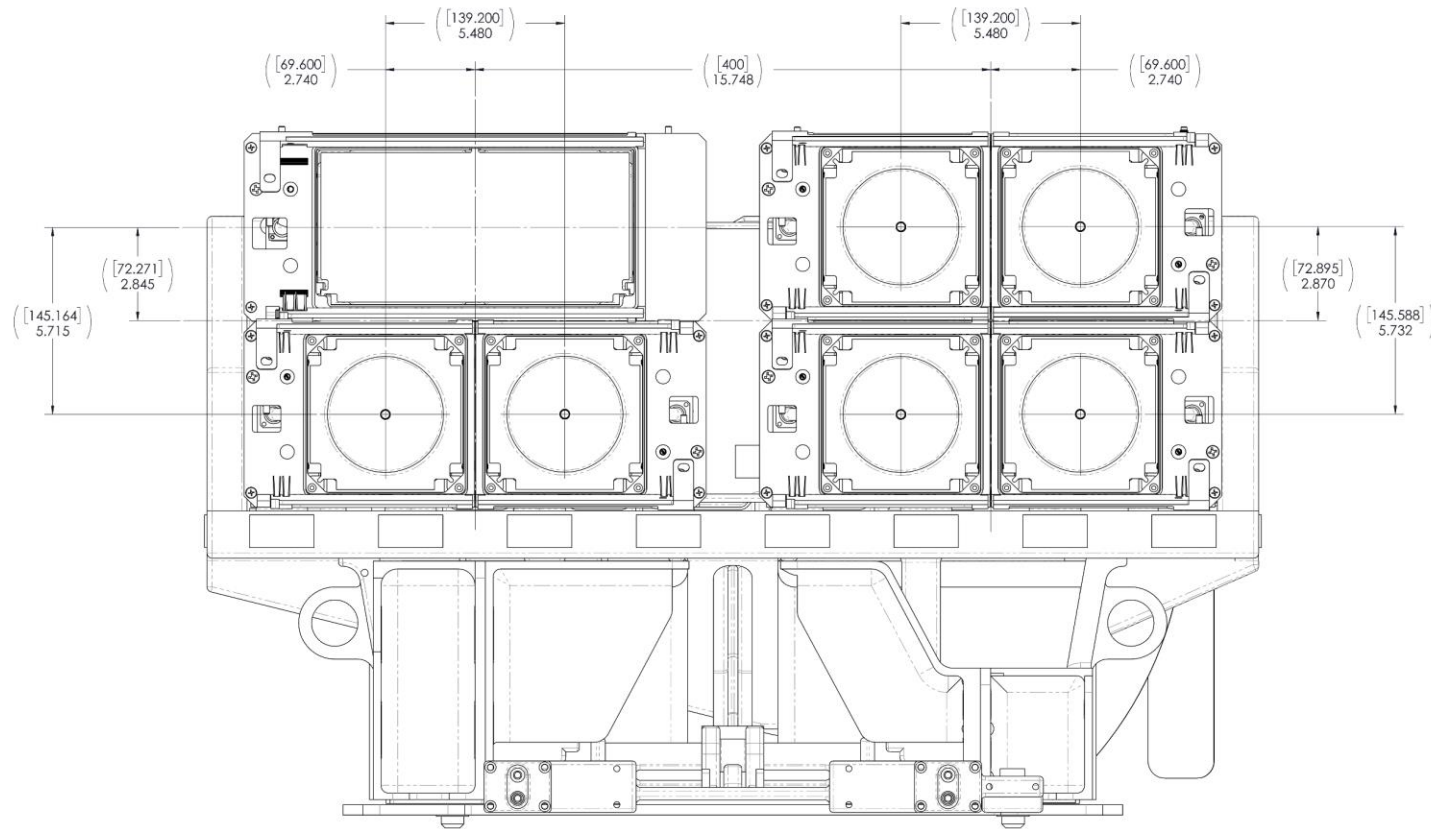
The exact dimensions of this definition are rough in the x direction, as we currently haven't exactly characterized the focal length of the optical system.

These dimensions assume that a rough focal length, f , of 35 [mm]

All units
in [mm]



Actual NR Deployer Geometry



5. BAG AND TAG PART NUMBER PER NASA/JSC PRC-9002.
4. CLEAN TO LEVEL VC PER NASA/JSC PRC-5001.
3. THESE PARTS ARE NOT FRACTURE CRITICAL.
2. INTERPRET DIMENSIONING AND TOLERANCING PER ANSI-Y14.5M-2009.
1. DIMENSIONS ARE IN INCHES.

NOTES: UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES TOLERANCES UNLESS NOTED OTHERWISE .0 ± 0.10 .00 ± 0.03		.000 ± 0.010 ANGULAR ± 0.5°	
SURFACE FINISH UNLESS OTHERWISE SPECIFIED		IS ✓	
THIRD ANGLE PROJECTION		MODEL VERSION	
FRACTURE CRITICAL <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		MODEL REVISION	
FLT HOWE <input type="checkbox"/> MOCKUP		CODE ID No 63HC7	
APPLICABLE GSE		AUTH	

SIGNATURES & DATES	
DR	
ENG	
CH	
APP	
QC	
MATL	
STRESS	
AUTH	

NANORACKS, LLC HOUSTON, TEXAS	
SILO REFERENCE DIMENSIONS	
SIZE DRG No. D	REV -
SCALE: 1:2	SHEET 1 OF 1

PRELIMINARY
add mon yy