

SPIRE

SUBJECT: SPIRE FPU External Alignment Report

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1. SCOPE

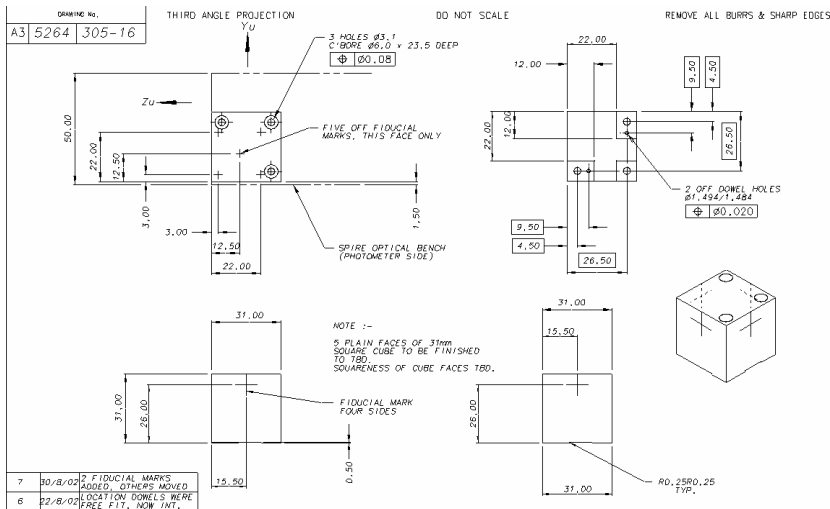
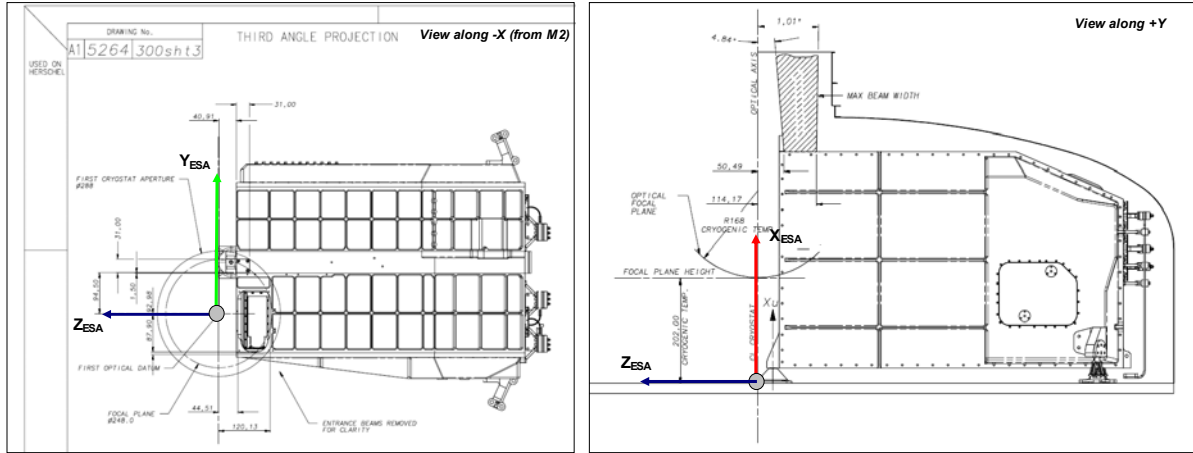
This document reports on the measurements taken on the SPIRE PFM FPU.

2. APPLICABLE DOCUMENTS

AD 1	5264 300 issue 20	SPIRE mechanical interface drawing
AD 2	SPIRE-RAL-NOT-002876	SPIRE alignment data summary

3. REFERENCE DOCUMENTS

4. MEASUREMENTS



The position of the alignment cube wrt the spacecraft axis is given in the table below.

Axis	location	comments
X	+471.52	To fiducial mark on side of cube
Y	+110	To fiducial mark on side of cube
Y	+107	To central fiducial mark on top of cube
Z	-56.41	To fiducial mark on side of cube
Z	-53.41	To central fiducial mark on top of cube
θ_x	Not measured	
θ_y	+7.3 +/- 0.5 arc mins	
θ_z	+3.7 +/- 0.5 arc mins	

Notes.

1. Positive rotation angle is for trigonometric (anti-clockwise) orientation when looking along $-Y$ (resp. $-Z$);
2. The displacements above are design values not measured values.
3. The figures in the above table refer only to the alignment cube and not to the optical axis of SPIRE.
4. The alignment requirements for the SPIRE optical system wrt the spacecraft axis are not stringent, they are displacement of 5.2 mm and angular offset of 8.8 arc mins.
5. The internal optics have been aligned and measured wrt the spacecraft axis to much higher accuracies than the requirements above.