

Herschel/SPIRE

MULLARD SPACE SCIENCE LABORATORY
 UNIVERSITY COLLEGE LONDON Author: C BROCKLEY-BLATT

SPIRE – STRUCTURE INTERFACE DRAWING ISSUE 16
 AND MODIFICATION SHEET ISSUE 1.0
 Document Number: MSSSL/SPIRE/SP005 29 August 2002

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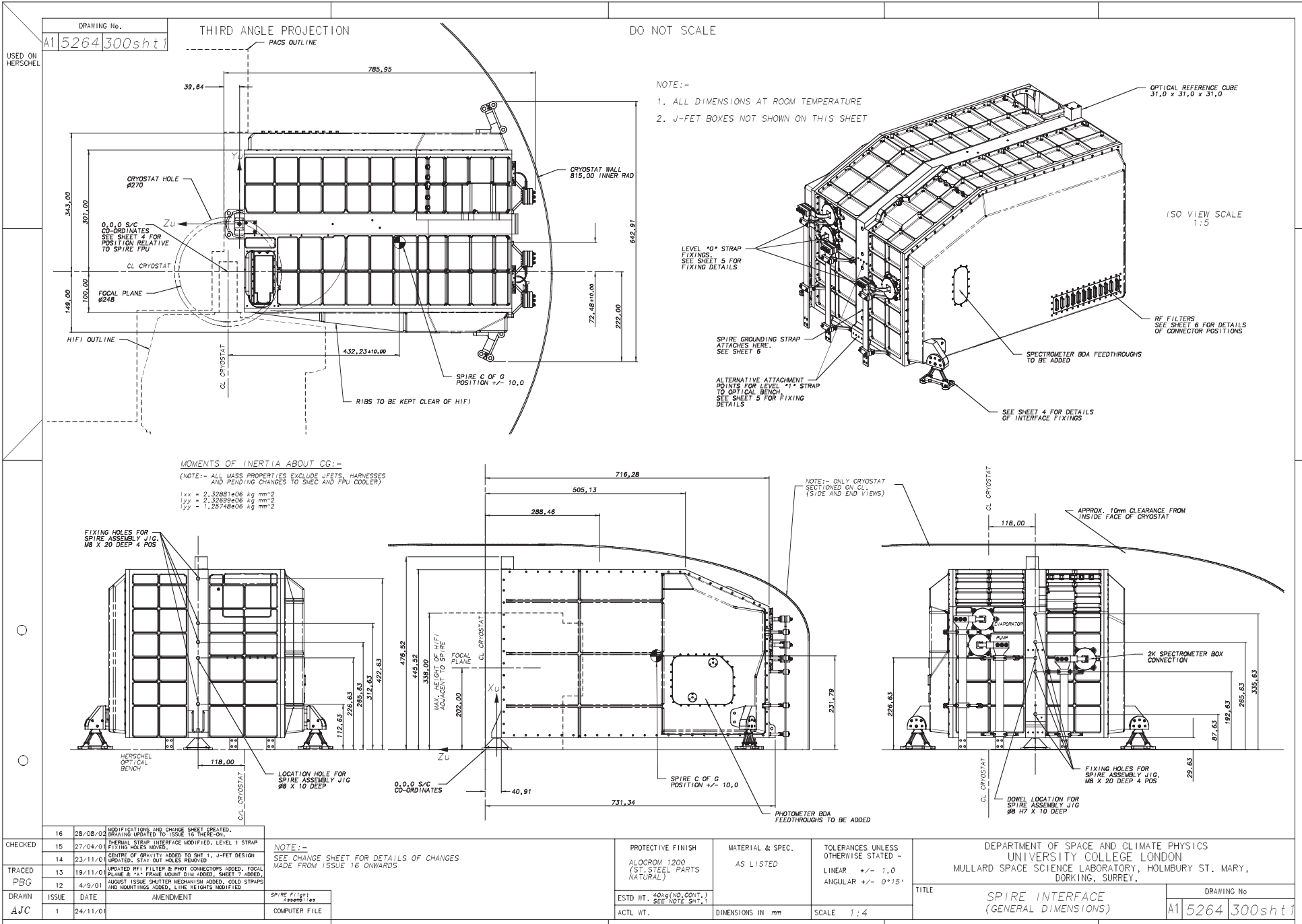
ISSUE 16...**PRE-ISSUE ONLY**

SHEET	MODIFICATION
2	JFET note modified.
1	Dimensions over Blade Mounts added.
1	'Zu' axis added. Spacecraft co-ordinates note added.
1	"Optical Datum Pin" note deleted.
4	Mounting referencing hole added (fixed mounting).
2	Section description note changed.
3	10 mm mechanical clearance zone deleted.
3	Shaded optical beams extended.
3	Note wrt. Beam dimensions added.
3	Reference cube angular mounting ad absolute accuracy note added.
4	Floating details removed.
4	Alignment of HOB wrt. Herschel to permit Spire to be aligned.
5	Unit axes added.
5	Cold Straps detail deleted (saved on new drawing A1/5264/300A).
5	JFET thermal Interfaces note added. External to MSSSL note added.
5	HSFPU thermal finishes added. Note wrt. JFET thermal interfaces added.
6	Electrical isolation note wrt. Cold straps added.
1	Mass updated. Moments of Inertia added.
4	FPU mounting cone interface holes modified.
4	Contact area of FPU interface Vespel insulators added.
4	Note wrt. HOB flatness and tilt to Herschel X Axis added.
5	Detail of FPU internal Level '0' straps deleted – Now on drawing A1/5264/300A
6	JFET harness "Stay Out" zones added.
7	FPU cone to PACS clearance dimension added.
ALL	BDA- Obsolete harness feedthroughs deleted.
2	Addition of RF Filter connector numbers

Author: C Brockley-Blatt **Date:**

Checked: B Winter **Date:**

Approved: Tony Dibbens **Date:**



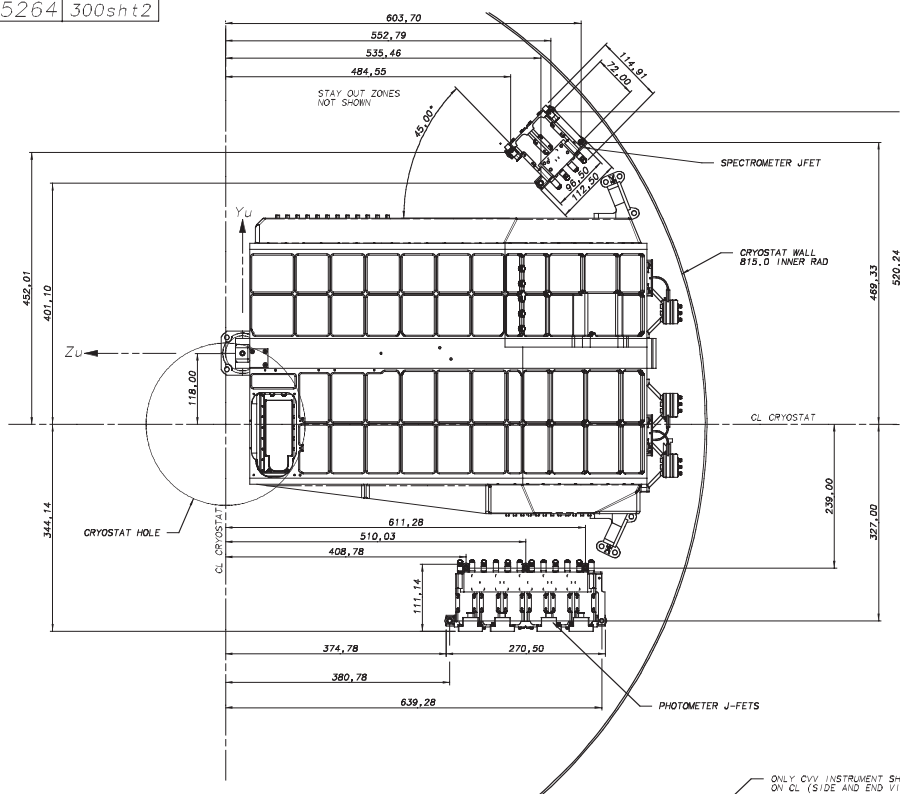
CHECKED	DATE	AMENDMENT
	16	28/08/02 MODIFICATIONS AND CHANGE SHEET CREATED. DRAWING UPDATED TO ISSUE 15 THERE-ON.
	15	27/04/01 THERMAL STRAP INTERFACE MODIFIED. LEVEL 1 STRAP FIXING HOLES MOVED.
	14	23/11/00 CENTRE OF GRAVITY ADDED TO SHT 1. J-FET DESIGN UPDATED. STAY OUT HOLES REMOVED.
TRACED	13	19/11/01 UPDATED RFI FILTER & PHOT CONNECTORS ADDED. FOCAL PLANE & 4" FRAME MOUNT DIA ADDED. SHEET 7 ADDED.
PBG	12	4/9/01 AUGUST ISSUE SHUTTER MECHANISM ADDED. COLD STRAPS AND MOUNTINGS ADDED. LINE WEIGHTS MODIFIED.

DATE	AMENDMENT
1	24/11/01

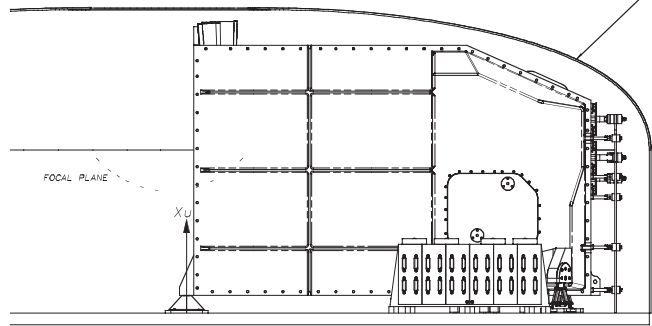
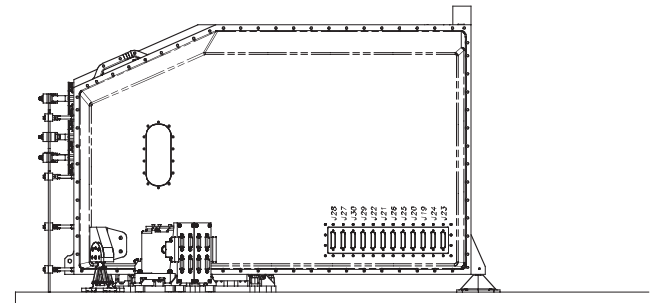
PROTECTIVE FINISH	MATERIAL & SPEC.	TOLERANCES UNLESS OTHERWISE STATED -
ALOCROM 1200 (ST. STEEL PARTS NATURAL)	AS LISTED	LINEAR +/- 1.0 ANGULAR +/- 0.15°
ESTD WT. 40kg (NO. CONT.) SEE NOTE SHT. 1		
ACTL WT.	DIMENSIONS IN mm	SCALE 1:4

DEPARTMENT OF SPACE AND CLIMATE PHYSICS UNIVERSITY COLLEGE LONDON MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY, DORKING, SURREY.	
TITLE	SPiRE INTERFACE (GENERAL DIMENSIONS)
DRAWING No	A15264300sht1

USED ON
HERSCHEL

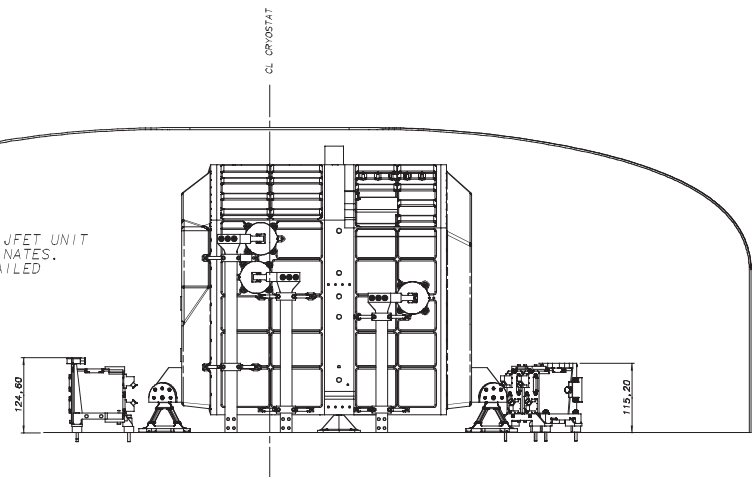


NOTE:-
1. ALL DIMENSIONS AT ROOM TEMPERATURE



ONLY CVV INSTRUMENT SHIELD SECTIONED ON CL (SIDE AND END VIEWS)

NOTE:
THIS DRAWING REFERENCES THE JFET UNIT MOUNTINGS TO HOB S/C CO-ORDINATES. THE JFETS HAVE SEPARATE DETAILED INTERFACE DRAWINGS.



CHECKED	16	28/08/02	MODIFICATIONS AND CHANGE SHEET CREATED. DRAWING UPDATED TO ISSUE 16 THERE-ON.
	15	27/04/01	THERMAL STRAP INTERFACE MODIFIED. LEVEL 1 STRAP FIXING HOLES MOVED.
	14	23/11/01	CENTRE OF GRAVITY ADDED TO SHT 1. J-FET DESIGN ROUTED. STAY OUT HOLES REMOVED.
TRACED	13	19/11/01	UPDATED RFI FILTER & PHOT CONNECTORS ADDED. FOCAL PLANE & "X" FRAME HOLES ADDED. SHEET 7 ADDED.
PBG	12	4/9/01	AUGUST ISSUE SHUTTER MECHANISM ADDED. COOL STRAPS AND MOUNTINGS ADDED. LINE WEIGHTS MODIFIED.
DRAWN	ISSUE	DATE	AMENDMENT
AJC	1	24/11/01	

SPiRE File assembly	COMPUTER FILE
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PROTECTIVE FINISH ALOCROM 1200 (ST. STEEL PARTS NATURAL)	MATERIAL & SPEC. AS LISTED	TOLERANCES UNLESS OTHERWISE STATED - LINEAR +/- 1,0 ANGULAR +/- 0°15'
ESTD WT. 40kg (NO. CONT.) SEE NOTE SHT. 1	DIMENSIONS IN mm	SCALE 1:4
ACTL WT.		

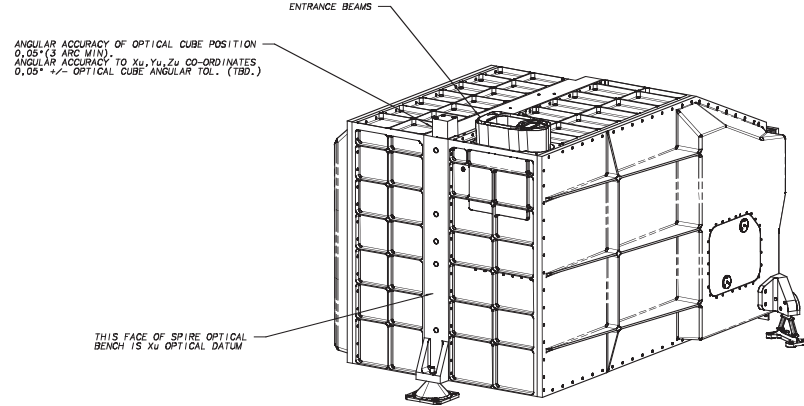
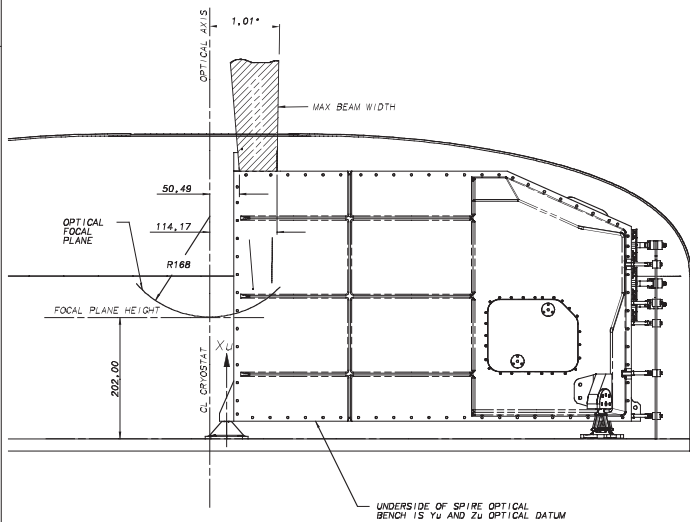
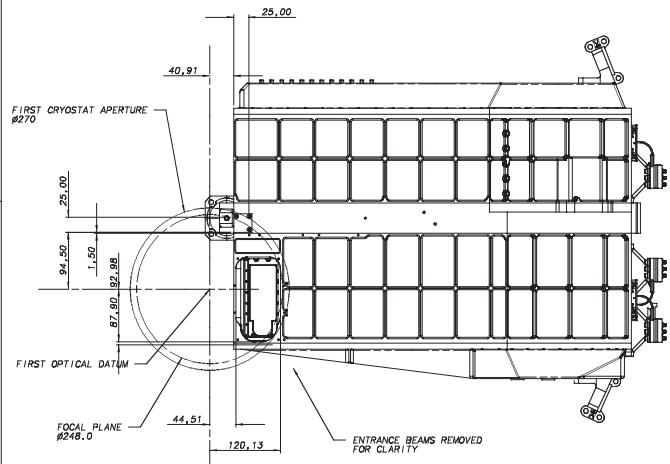
DEPARTMENT OF SPACE AND CLIMATE PHYSICS UNIVERSITY COLLEGE LONDON MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY, DORKING, SURREY.	
TITLE SPiRE INTERFACE (J-FET POSITIONS)	DRAWING No A1 5264 300sht2

USED ON
HERSCHEL

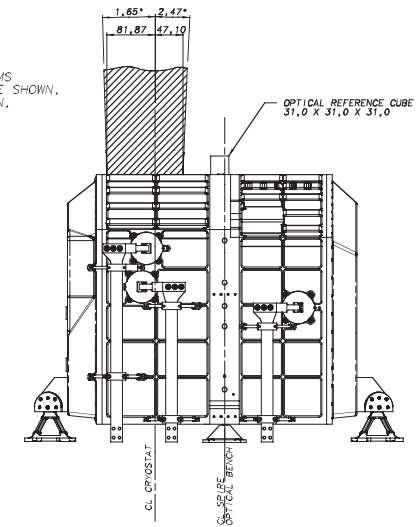
DRAWING No.
A1 5264 300sht3

THIRD ANGLE PROJECTION

DO NOT SCALE



ONLY PRIMARY DIMENSIONS FOR THE OPTICAL BEAMS WHICH SHALL REMAIN FREE FROM OBSTRUCTION ARE SHOWN. REFER TO 11D-B FOR MORE DETAILED INFORMATION.



NOTE:-

1. ALL DIMENSIONS AT ROOM TEMPERATURE

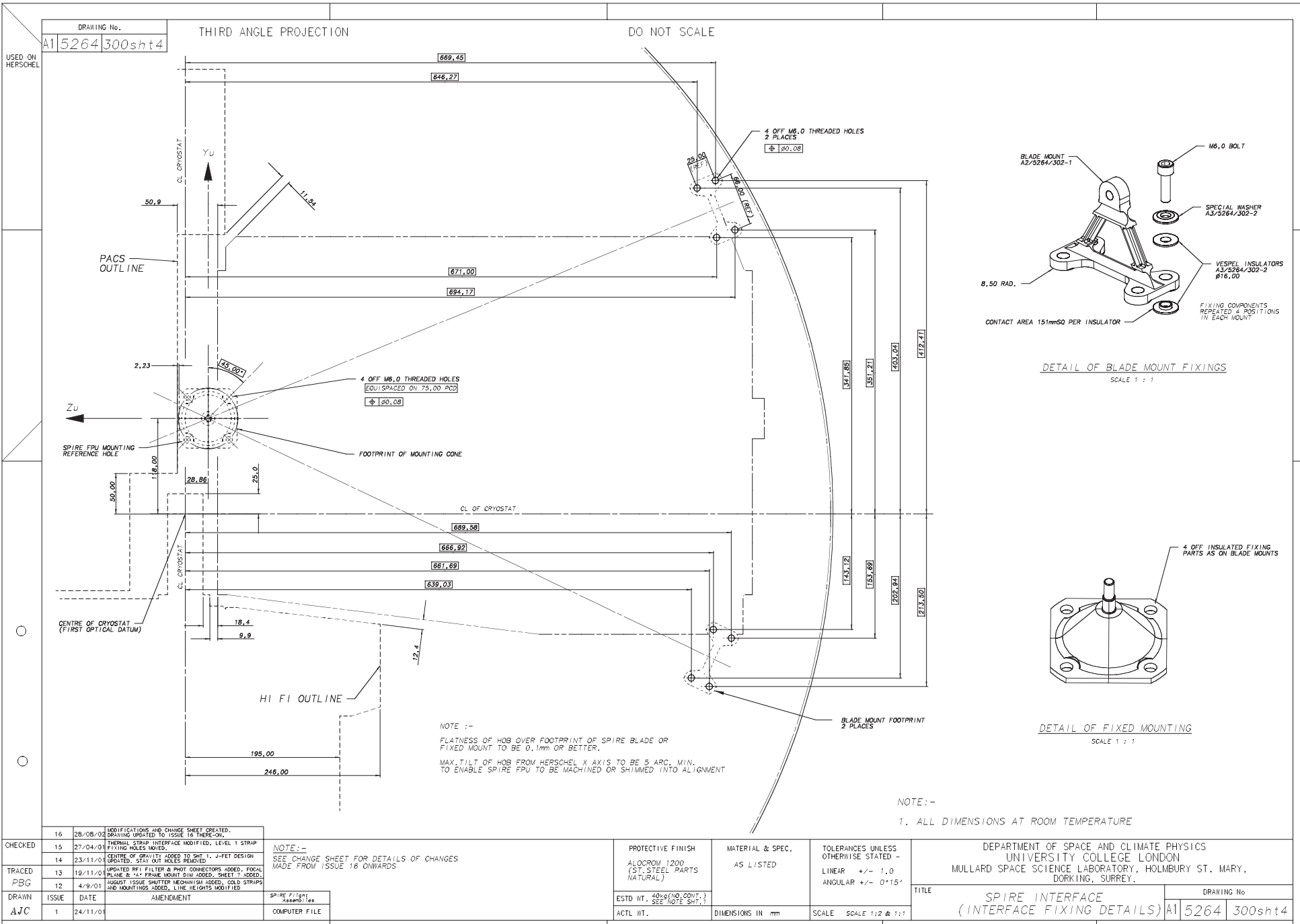
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16	28/08/02	MODIFICATIONS AND CHANGE SHEET CREATED. DRAWING UPDATED TO ISSUE 16 THEREON.	
15	27/04/01	THERMAL STRIP INTERFACE MODIFIED. LEVEL 1 STRIP FIXING HOLES MOVED.	
14	23/11/00	Centre of gravity added to sht 1. J-FET DESIGN UPDATED. STAY OUT HOLES REMOVED.	
TRACED	13	19/11/00	UPDATED RFI FILTER & PHOTO CONNECTORS ADDED, FOCAL PLANE & +/- FRAME MOUNT DIA ADDED. SHEET 7 ADDED.
PBG	12	4/9/01	AUGUST ISSUE SHUTTER MECHANISM ADDED, COLD STRIPS AND MOUNTINGS ADDED. LINE HEIGHTS MODIFIED.
DRAWN	ISSUE	DATE	AMENDMENT
AJC	1	24/11/00	

NOTE:-
SEE CHANGE SHEET FOR DETAILS OF CHANGES MADE FROM ISSUE 16 ONWARDS

SPIRE Flight
Assemblies
COMPUTER FILE

PROTECTIVE FINISH	MATERIAL & SPEC.	TOLERANCES UNLESS OTHERWISE STATED -
ALOCROM 1200 (ST. STEEL PARTS NATURAL)	AS LISTED	LINEAR +/- 1.0 ANGULAR +/- 0.15°
ESTD WT. 40kg (NO. CONT.) SEE NOTE SHT. 3		
ACTL WT.	DIMENSIONS IN mm	SCALE 1:1

DEPARTMENT OF SPACE AND CLIMATE PHYSICS UNIVERSITY COLLEGE LONDON MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY, DORKING, SURREY.	
TITLE	DRAWING No
SPIRE INTERFACE (OPTICAL DETAILS)	A1 5264 300sht3



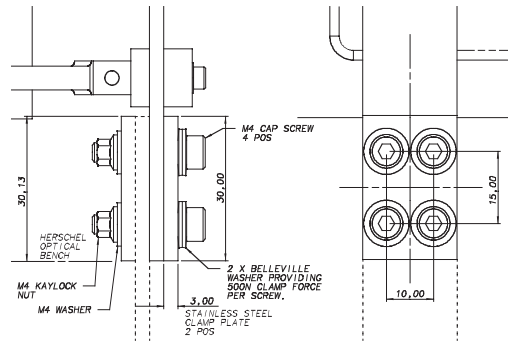
DRAWING No.

A1 5264 300sht5

THIRD ANGLE PROJECTION

DO NOT SCALE

USED ON
HERSCHEL



HSFPU EXTERNAL FINISHES:-

INSTRUMENT CASE AND EXTERNAL COVERS, BLADE AND FIXED MOUNTING, EXTERNAL FIXINGS, COLD STRAPS.

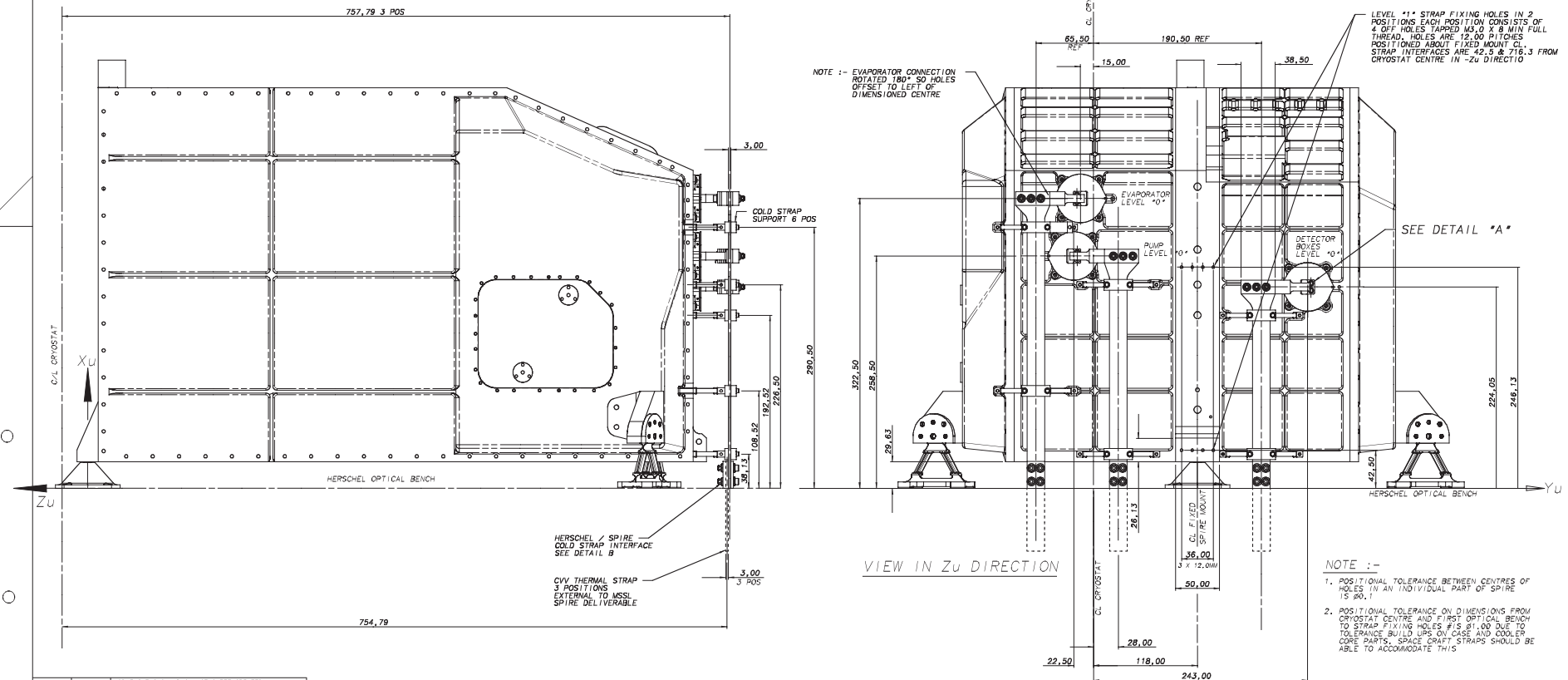
ALOCROM 1200
NATURAL ST. STEEL
GOLD PLATED

NOTE:-

ANY THERMAL INTERFACE PROVISIONS NEEDED FOR THE JFET UNITS ARE SHOWN ON INTERFACE DRAWINGS RELATING TO THOSE UNITS.

DETAIL "B"

LEVEL "1" STRAP FIXING HOLES IN 2 POSITIONS EACH POSITION CONSISTS OF 4 OFF HOLES TAPPED M3.0 X 8 MIN FULL THREAD. HOLES ARE 12.00 PITCHES POSITIONED ABOUT FIXED MOUNT CL. STRAP INTERFACES ARE 42.3 & 216.3 FROM CRYOSTAT CENTRE IN -ZU DIRECTION



NOTE :-

1. POSITIONAL TOLERANCE BETWEEN CENTRES OF HOLES IN AN INDIVIDUAL PART OF SPIRE IS 0.1
2. POSITIONAL TOLERANCE ON DIMENSIONS FROM CRYOSTAT CENTRE AND FIRST OPTICAL BENCH TO STRAP FIXING HOLES IS 0.100 DUE TO TOLERANCE BUILD UPS ON CASE AND COOLER CORE PARTS. SPACE CRAFT STRAPS SHOULD BE ABLE TO ACCOMMODATE THIS

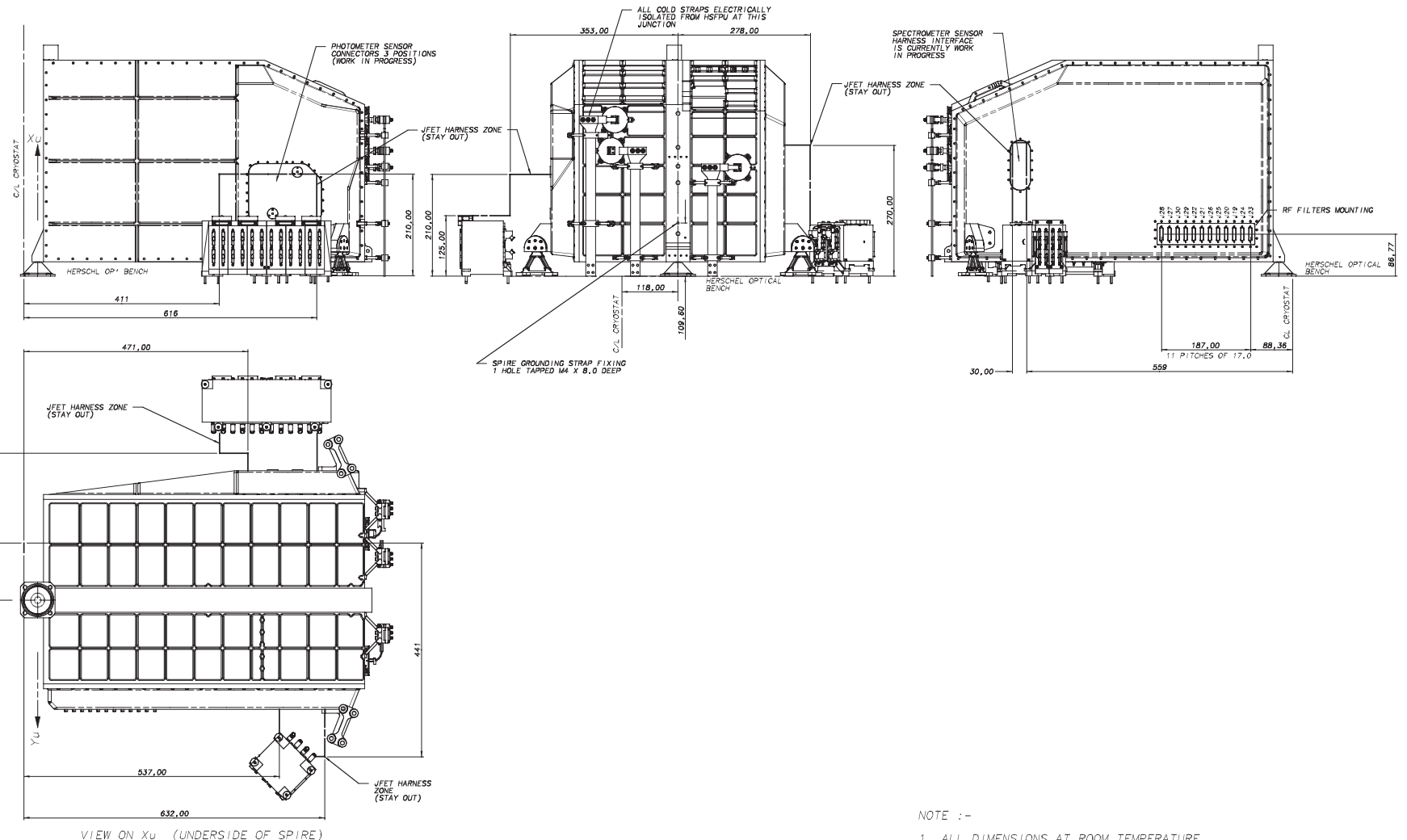
CHECKED	DATE	AMENDMENT
	16 28/08/02	MODIFICATIONS AND CHANGE SHEET CREATED, DRAWING UPDATED TO ISSUE 16 THEREAFTER.
	15 27/04/01	THERMAL STRAP INTERFACE MODIFIED, LEVEL 1 STRAP FIXING HOLES MOVED.
	14 23/11/00	CENTRE OF GRAVITY ADDED TO SHT 1, J-FET DESIGN UPDATED, STAY OUT HOLES REMOVED.
TRACED	13 19/11/01	UPDATED RFI FILTER & PHOTO CONNECTORS ADDED, FOCAL PLANE & 1" FRAME MOUNT DIA ADDED, SHEET 7 ADDED.
PBG	12 4/9/01	AUGUST ISSUE SHUTTER MECHANISM ADDED, COLD STRAPS AND MOUNTINGS ADDED, LINE HEIGHTS MODIFIED.

NOTE:-
SEE CHANGE SHEET FOR DETAILS OF CHANGES MADE FROM ISSUE 16 ONWARDS
NOTE:-
ALL DIMENSIONS AT ROOM TEMPERATURE

FILE	DESCRIPTION
SPiRE Flight Assemblies	
COMPUTER FILE	

PROTECTIVE FINISH	MATERIAL & SPEC.	TOLERANCES UNLESS OTHERWISE STATED -
ALOCROM 1200 (ST. STEEL PARTS NATURAL)	AS LISTED	LINEAR +/- 1.0 ANGULAR +/- 0.15°
ESTD WT. 40kg (NO. CONT.) SEE NOTE SHT. 3		
ACTL WT.	DIMENSIONS IN mm	SCALE 1:2 & 1:1

DEPARTMENT OF SPACE AND CLIMATE PHYSICS UNIVERSITY COLLEGE LONDON MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY, DORKING, SURREY.	
TITLE	SPiRE INTERFACE (THERMAL STRAP CONNECTIONS)
DRAWING No	A1 5264 300sht5



CHECKED	16	28/08/02	MODIFICATIONS AND CHANGE SHEET CREATED. DRAWING UPDATED TO ISSUE 18 THERE-ON.
	15	27/04/01	THERMAL STRAP INTERFACE MODIFIED. LEVEL 1 STRAP FIXING HOLES MOVED.
TRACED PBG	14	23/11/01	CENTRE OF GRAVITY ADDED TO SHT 1. J-FET DESIGN UPDATED. STAY OUT HOLES REMOVED.
	13	19/11/01	UPDATED RFI FILTER & PHOTO CONNECTORS ADDED. FOCAL FLANGE & X-Y PRISM MOUNT DIM ADDED. SHEET 2 ADDED.
DRAWN AJC	12	4/9/01	AUGUST ISSUE SHUTTER MECHANISM ADDED. COLD STRAPS AND MOUNTINGS ADDED. LINE HEIGHTS MODIFIED.
	1	24/11/01	AMENDMENT

NOTE :-
SEE CHANGE SHEET FOR DETAILS OF CHANGES MADE FROM ISSUE 18 ONWARDS

Spire Flight
Assembly

PROTECTIVE FINISH ALOCROM 1200 (ST. STEEL PARTS NATURAL)	MATERIAL & SPEC. AS LISTED	TOLERANCES UNLESS OTHERWISE STATED - LINEAR +/- 1.0 ANGULAR +/- 0*15'
ESTD Wt. 40kg (NO. CONT.) SEE NOTE SHT. 1	DIMENSIONS IN mm	SCALE 1:4
ACTL Wt.		

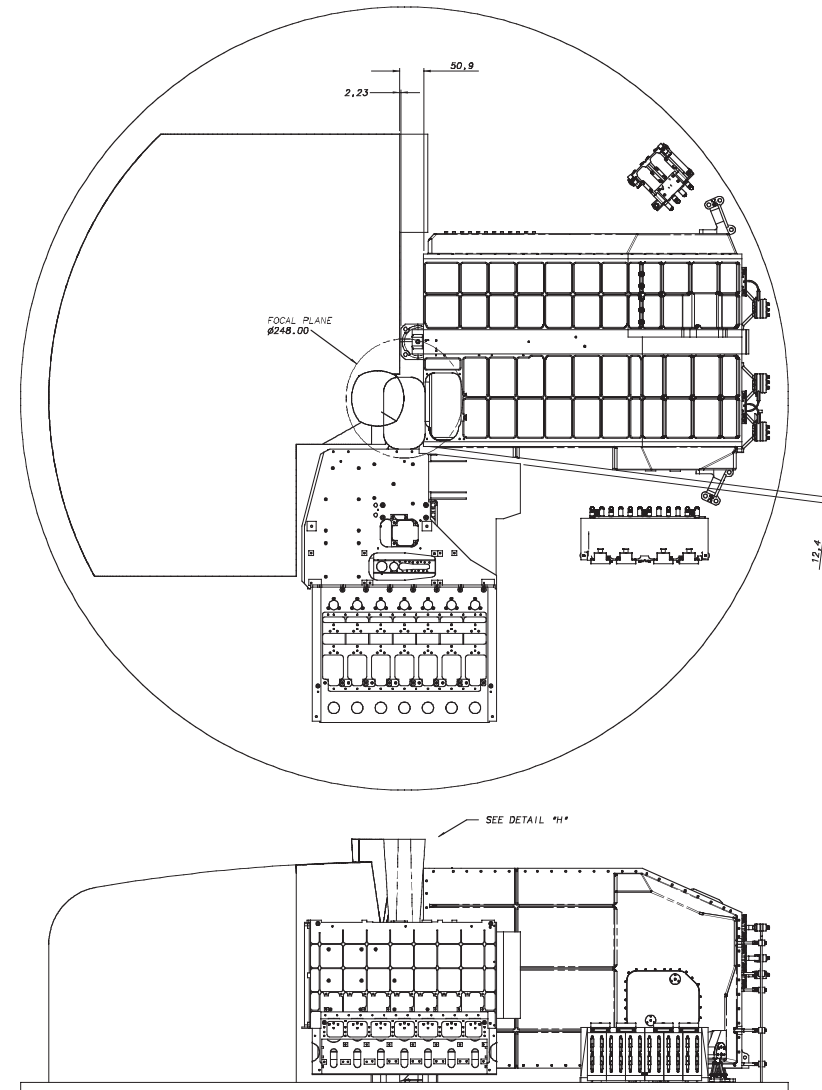
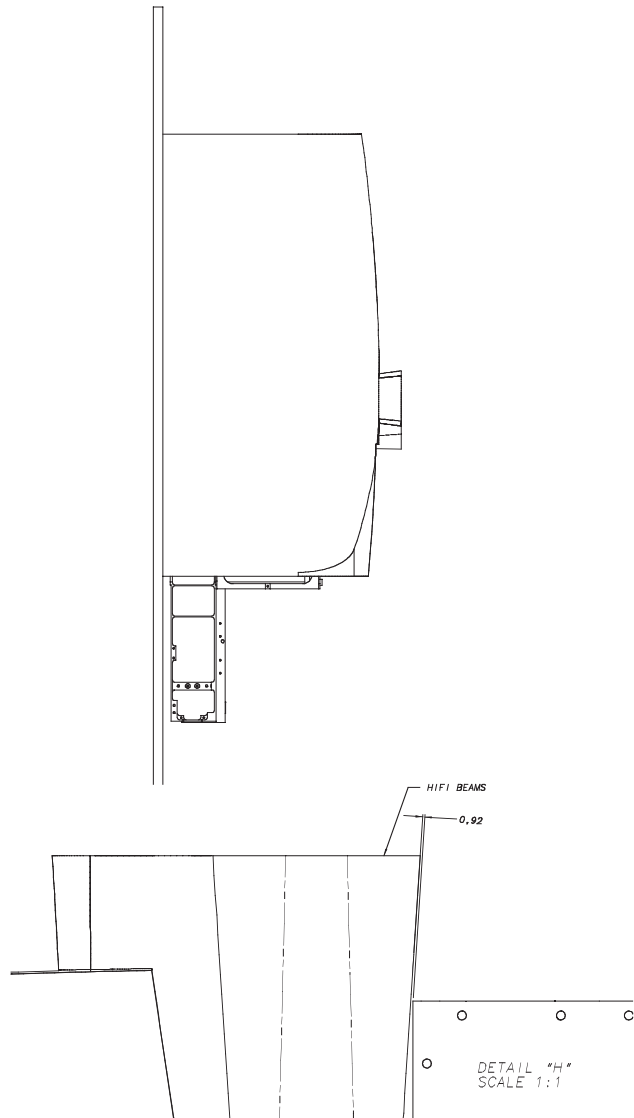
DEPARTMENT OF SPACE AND CLIMATE PHYSICS UNIVERSITY COLLEGE LONDON MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY, DORKING, SURREY.		DRAWING No
TITLE SPIRE INTERFACE (ELECTRICAL)		A1 5264 300 sht 6

DRAWING No.

A1 5264 300sht7

THIRD ANGLE PROJECTION

DO NOT SCALE

USED ON
HERSCHEL

CHECKED	ISSUE	DATE	AMENDMENT	SPiRE Flight Assesment	PROTECTIVE FINISH	MATERIAL & SPEC.	TOLERANCES UNLESS OTHERWISE STATED -	TITLE	DRAWING No
	16	28/08/02	MODIFICATIONS AND CHANGE SHEET CREATED. DRAWING UPDATED TO ISSUE 16 THERE-ON.		ALOCROM 1200 (ST. STEEL PARTS NATURAL)	AS LISTED	LINEAR +/- 1.0 ANGULAR +/- 0'15'	DEPARTMENT OF SPACE AND CLIMATE PHYSICS UNIVERSITY COLLEGE LONDON MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY, DORKING, SURREY.	A1 5264 300sht7
	15	27/04/01	THERMAL STRAP INTERFACE MODIFIED, LEVEL 1 STRAP FIXING HOLES MOVED.		ESTD WT. 405g (NO. CONT. 1) SEE NOTE SHIT. 1				
	14	23/11/00	CENTRE OF GRAVITY MOVED TO SHIT 1. 4-FET DESIGN UPDATED, STAY OUT HOLES REMOVED.		ACTL WT.				
TRACED PBG	13	19/11/00	UPDATED RFI FILTER & PHOTO CONNECTORS ADDED, FOCAL PLANE & HIFI FRAME MOUNT DIA. ADDED, SHEET 2 ADDED.						
	12	4/9/01	AUGUST ISSUE SHUTTER MECHANISM ADDED, COLD STRAPS AND MOUNTINGS ADDED, LINE HEIGHTS MODIFIED						
DRAWN AJC	1	24/11/01		COMPUTER FILE				SPiRE INTERFACE PACS AND HIFI OPTICAL & CLEARANCES	

NOTE: -
SEE CHANGE SHEET FOR DETAILS OF CHANGES
MADE FROM ISSUE 16 ONWARDS

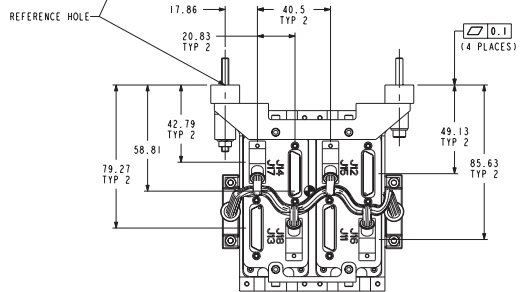
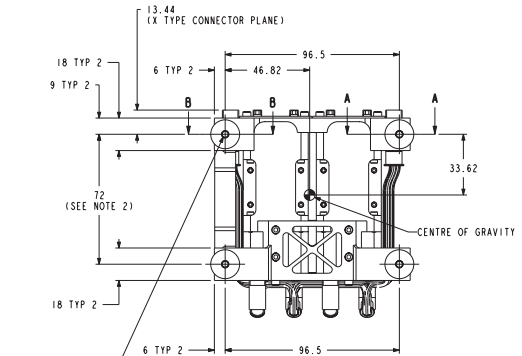
DEPARTMENT OF SPACE AND CLIMATE PHYSICS
UNIVERSITY COLLEGE LONDON
MULLARD SPACE SCIENCE LABORATORY, HOLMBURY ST. MARY,
DORKING, SURREY.

TITLE
SPiRE INTERFACE
PACS AND HIFI OPTICAL & CLEARANCES

DRAWING No
A1 5264 300sht7

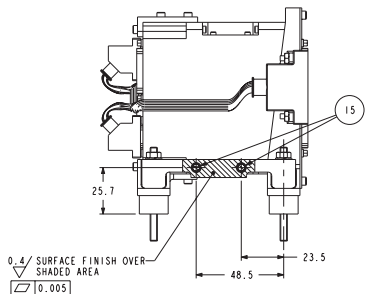
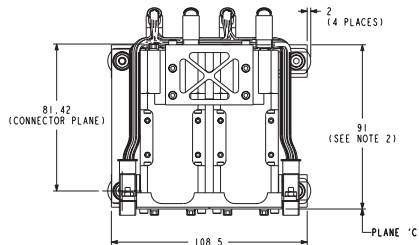
MOMENTS OF INERTIA (kg mm⁴) WITH RESPECT TO C OF G

I_{xx}	1.34e+03
I_{yy}	2.99e+03
I_{zz}	2.95e+03

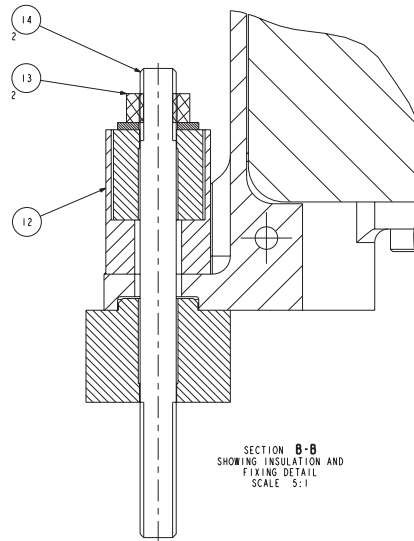
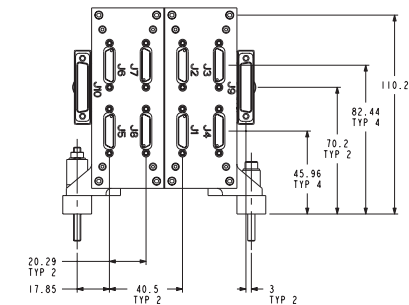


CONNECTOR TABLE

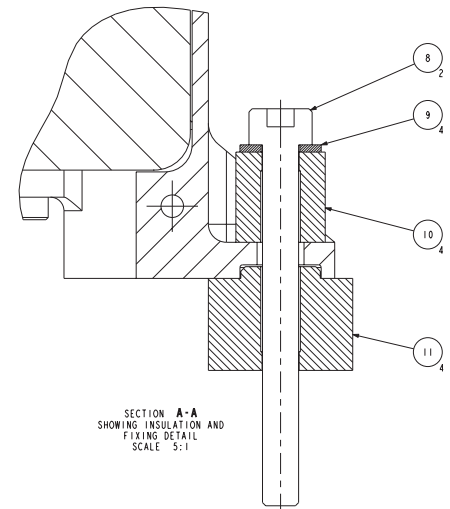
LABEL	TYPE	FUNCTION
J1	ALL WMS/SP	ALL SIGNAL FEEDS TO CRYOHARNESS
J2		
J3		
J4		
J5		
J6		
J7		
J8		
J9	WMS/375	BIAS WIRES FROM CRYOHARNESS
J10	ALL WMS/IF	SIGNALS IN FROM DETECTORS
J11		
J12		
J13		
J14	ALL WMS/IF	BIAS FEEDS INTO MODULES
J15		
J16		
J17		
J18		



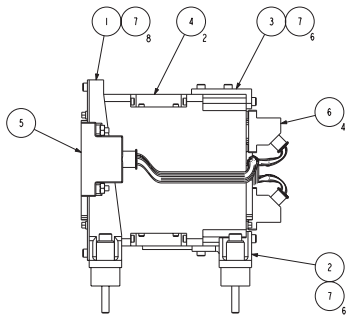
THERMAL STRAP INTERFACE



SECTION B-B SHOWING INSULATION AND FIXING DETAIL SCALE 5:1



SECTION A-A SHOWING INSULATION AND FIXING DETAIL SCALE 5:1



PART No.	DESCRIPTION	QTY	MASS (g)	MASS (g) ¹	REMARKS
			TYP	TOTAL	
1	FRONT PLATE	1	36.0	36.00	
2	REAR FOOT BEAM	1	6.6	6.60	
3	UPPER TOP BEAM	1	23.0	23.00	
4	JFET MODULE	2	305	610.00	JPL SUPPLY
5	37 WAY MICRO-D	2	17.0	34.00	
6	15 WAY MICRO-D	4	8.3	33.20	CONNECTOR AND MICRO-D
7	CP.HD SCREW	20	0.6	12.00	REF: 37-4-108
8	CP.HD SCREW	4	5.0	20.00	REF: 37-4-108
9	WASHER	4	0.3	1.20	REF: 37-4-108
10	TOP INSULATOR	4	0.04	0.16	CFRP
11	BOTTOM INSULATOR	4	0.09	0.36	CFRP
12	THERMAL STRAP	1	23.0	23.00	
13	NUT	2	0.85	1.70	REF: 37-4-108
14	M4 STUD	2	5.1	10.20	REF: 37-4-108
15	THREADED INSERTS	2	1.0	2.00	REF: 37-4-108
	GRAND TOTAL			913.42	

NOTE

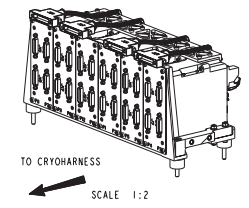
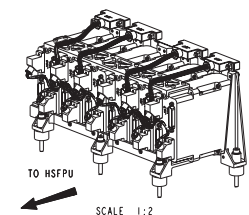
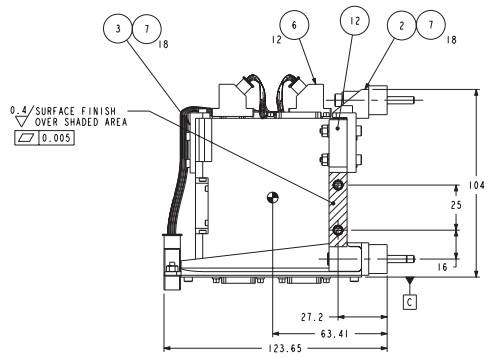
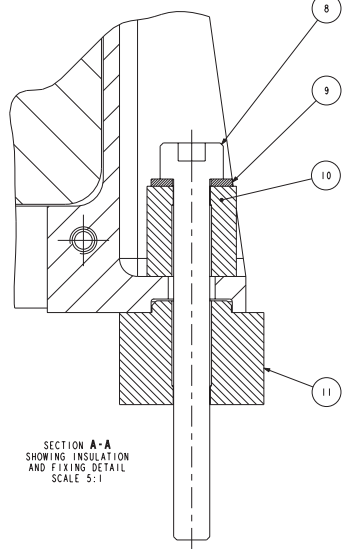
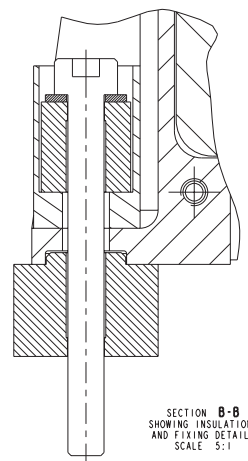
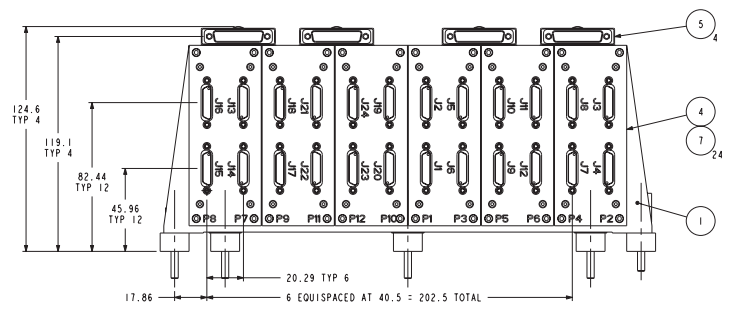
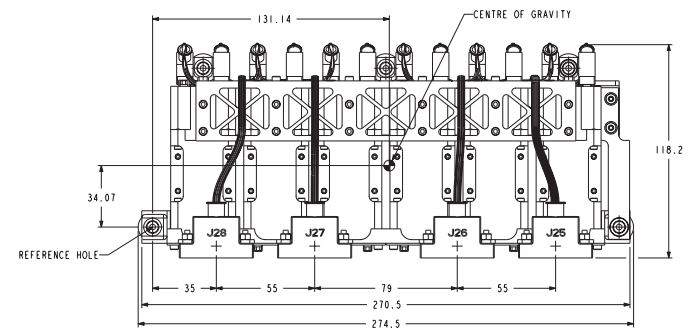
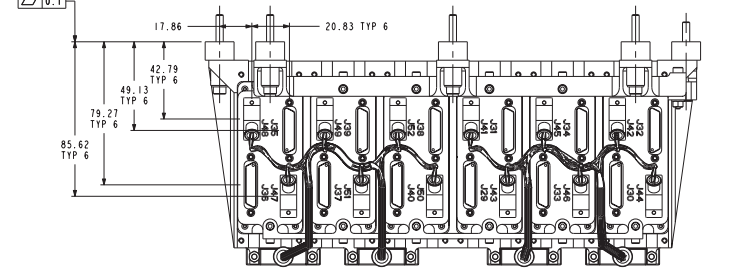
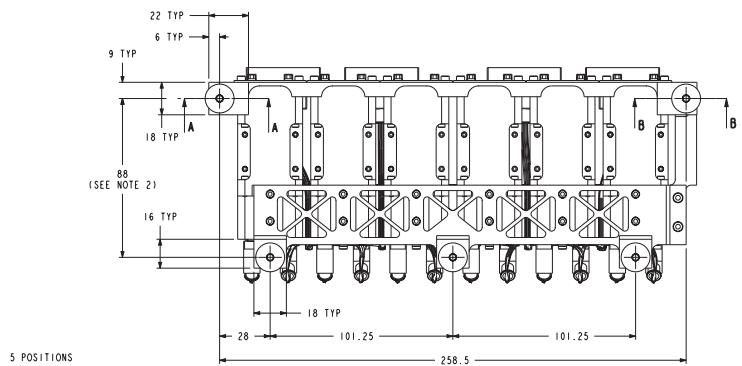
- ITEMS 10 & 11 TO BE PERMANENTLY BONDED TO MATING FACES.
- TO ATTAIN THE CORRECT MOUNTING INTERFACE DIMENSION, THE FOLLOWING PROCEDURE MUST BE FOLLOWED: PARTS 4 ARE TO BE MOUNTED TO PART 1, MEASURE FROM THE TOP OF PARTS 4 SHOWN AS PLANE 'C' TO THE TAIL END FACE OF PARTS 4, NOTING THE TWO VALUES. MACHINE RAISED PASSES ON PART 2 TO REMOVE (VALUE - 87.7). ITEM 14 BONDED/LOCKED INTO HOB. ITEMS 13 & 8 TO BE TORQUED TO 1Nm FOR BEDDING DOWN, LOOSENED AND RETORQUED TO 25cNm. FOR WARM VIBRATION TESTING INCREASE TORQUE TO 2.5Nm FOR DURATION OF TESTS AND THEN LOOSEN AND RETORQUE TO 25cNm BEFORE ANY COOLDOWN.
- UNIT SHOWN FITTED WITH BACK-HARNESS MATING TO J9-10 & J15-18 BECAUSE THIS WILL BE FITTED BEFORE ITEM IS INTEGRATED TO HOB. HOWEVER, THIS HARNESS AND ITS CONNECTORS ARE NOT PART OF THE 2 JFET RACK.

E	4-07-02	KE-2952	T.R.F			ISSUE
ISSUE	DATE	MOD. No.	DRN. BY	CHKD.	APPD.	STATUS
TOLERANCES UNLESS STATED	±0.2 mm		FINISH CLEAN	REMOVE ALL BURRS	SURFACE TEXTURE μm	ORIGINAL SCALE 1:1
MATERIAL & SPEC. SEE DETAILS	SEE DETAILS		SEE DETAILS	SEE DETAILS	SEE DETAILS	DO NOT SCALE

SPiRE MASTER DRAWING

PROJECT MANAGER	APPROVED
SYSTEM ENG	
ELECTRONICS ENG	
PA GROUP	
STRESS ENG	
OPTICAL ENG	
THERMAL ENG	
MECHANICAL ENG	

USED ON	© CLRC 2001
CENTRAL LABORATORY OF THE RESEARCH COUNCILS	
TITLE	2 JFET RACK INTERFACE DRAWING
SPiRE	
A 0-KE-0104-360-E	1 of 1



No.	DESCRIPTION	QTY	MASS (g)	MASS (g) TOTAL	REMARKS
1	FRONT PLATE	1	128.8	128.8	
2	LOWER REAR PLATE	1	69.0	69.0	
3	UPPER REAR PLATE	1	32.6	32.6	
4	JFET MODULE	6	305	1830	
5	37 WAY MICRO-D ASSY	4	17.0	68.0	CONNECTOR AND BRASSHELL
6	15 WAY MICRO-D ASSY	12	8.3	99.6	CONNECTOR
7	SCREW M2.5 x 8 LONG	60	0.6	37.2	A2-70 STAINLESS STEEL PLATE 150-1100
8	SCREW M4 x 40 LONG	5	5.0	25.0	A2-70 STAINLESS STEEL PLATE 150-1100
9	WASHER M4	5	0.31	1.55	A2-70 STAINLESS STEEL PLATE 150-1100
10	TOP INSULATOR	5	0.9	4.5	
11	BOTTOM INSULATOR	5	2.8	14.0	
12	THERMAL STRAP ASSY	1	28.0	28.0	
GRAND TOTAL				2348.2	

CONNECTOR TABLE

LABEL	TYPE	FUNCTION
J1	ALL MWSFP	ALL SIGNAL FEEDS TO CRYOHARNES
J2		
J3		
J4		
J5		
J6		
J7		
J8		
J9		
J10		
J11	MWSPTS	BIAS WIRES FROM CRYOHARNES
J12		
J13		
J14		
J15		
J16		
J17		
J18		
J19		
J20		
J21	ALL MWSFP	SIGNALS IN FROM DETECTORS
J22		
J23		
J24		
J25		
J26		
J27		
J28		
J29		
J30		
J31	ALL MWSFP	BIAS FEEDS INTO MODULES
J32		
J33		
J34		
J35		
J36		
J37		
J38		
J39		
J40		
J41		
J42		
J43		
J44		
J45		
J46		
J47		
J48		
J49		
J50		
J51		
J52		

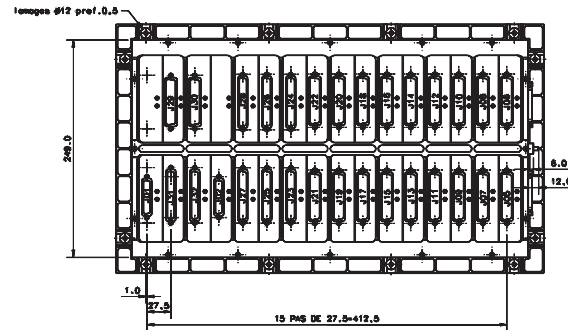
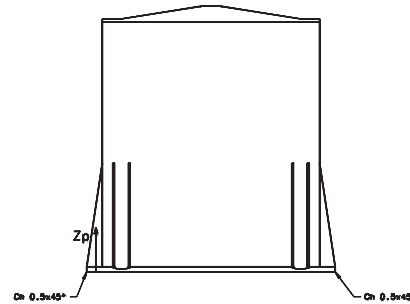
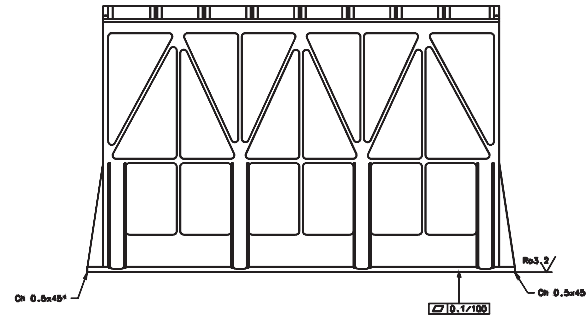
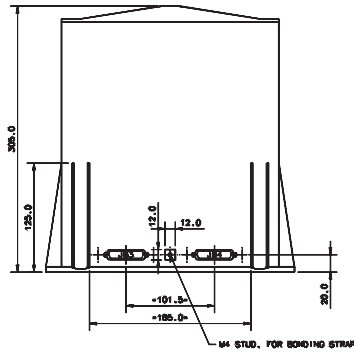
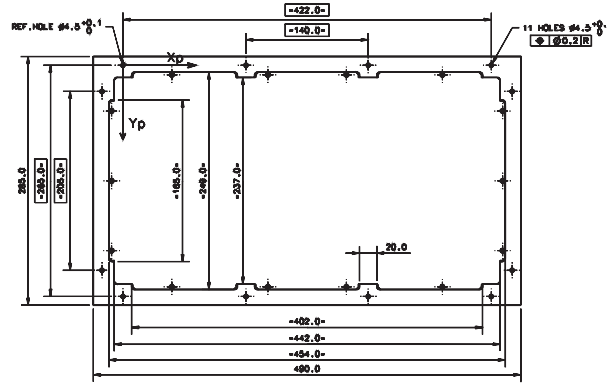
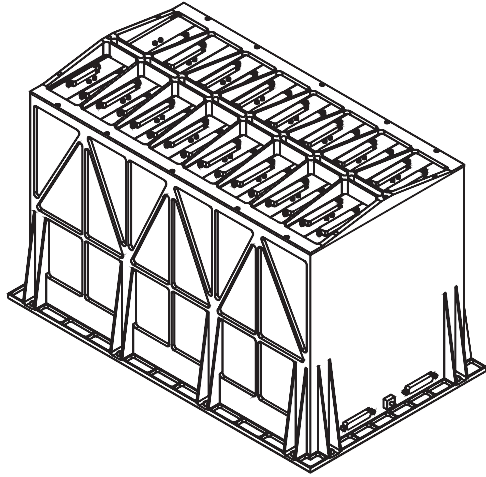
NOTE

- ITEMS 10 & 11 TO BE PERMANENTLY BONDED TO MATING FACES.
- TO ATTAIN THE CORRECT MOUNTING INTERFACE DIMENSION, THE FOLLOWING PROCEDURE MUST BE FOLLOWED:
PARTS 4 ARE TO BE MOUNTED TO PART 1. MEASURE FROM THE TOP OF PARTS 4 SHOWN AS PLANE 'C' TO THE TAIL END FACE OF PARTS 4, NOTING THE SIX VALUES.
MACHINE RAISED PADS ON PART 2 TO REMOVE (VALUE = 87.2).
- ITEM 8 TO BE TORQUED TO 1Nm FOR BEDDING DOWN. LOOSENED AND RETORQUED TO 25cNm FOR WARM VIBRATION TESTING. INCREASE TORQUE TO 2.5Nm FOR DURATION OF TESTS AND LOOSEN AND RETORQUE TO 25cNm BEFORE ANY COOLDOWN.
- UNIT SHOWN FITTED WITH BACK-HARNES MATING TO J25-28 & J41-52 BECAUSE THIS WILL BE FITTED BEFORE ITEM IS INTEGRATED TO HOB. HOWEVER, THIS HARNES AND ITS CONNECTORS ARE NOT PART OF THE 6 JFET RACK.

MOMENTS OF INERTIA (kg.m ²) WITH RESPECT TO C OF G	VALUE
I _{xx}	4.07e+03
I _{yy}	1.43e+04
I _{zz}	1.46e+04

SPIRE MASTER DRAWING	
PROJECT MEMBER	APPROVED
PROJECT MANAGER	
SYSTEM ENG	
ELECTRONICS ENG	
PA GROUP	
STRESS ENG	
OPTICAL ENG	
THERMAL ENG	
MECHANICAL ENG	

ISSUE	DATE	MOD. No.	DRN. BY	CHKD.	APPD.	STATUS
C	03-07-02	KE-2953.	T. FROUD			MANUF
TOLERANCES UNLESS STATED		FINISH CLEAN		ORIGINAL SCALE		
±0.2 mm		REMOVE ALL BURRS		DO NOT SCALE		
±0.3 mm		SURFACE TEXTURE µm		0		5mm
SEE DETAILS		SEE DETAILS		✓ UNLESS STATED		
USED ON						© CLRC 2001
CENTRAL LABORATORY OF THE RESEARCH COUNCILS						
TITLE						
6 JFET RACK INTERFACE DRAWING						
SPIRE						
A 0-KE-0104-350-C						1 of 1



CONNECTORS					
IDENT	TYPE	FUNCTIONS	IDENT	TYPE	FUNCTIONS
J01	DBMA 25S	DAQ_IF_M/DPUL_M	J17	DDMA 50P	LIA_P_7/FPJ
J02	DBMA 25S	DAQ_IF_R/DPUL_R	J18	DDMA 50P	LIA_P_7/FPJ
J03	DBMA 25P	DCU/PSUL_M	J19	DDMA 50P	LIA_P_8/FPJ
J04	DBMA 25P	DCU/PSUL_R	J20	DDMA 50P	LIA_P_8/FPJ
J05	DDMA 50P	LIA_P_1/FPJ	J21	DDMA 50P	LIA_P_9/FPJ
J06	DDMA 50P	LIA_P_1/FPJ	J22	DDMA 50P	LIA_P_9/FPJ
J07	DDMA 50P	LIA_P_2/FPJ	J23	DDMA 37P	LIA_S_1/FPJ
J08	DDMA 50P	LIA_P_2/FPJ	J24	DDMA 37P	LIA_S_1/FPJ
J09	DDMA 50P	LIA_P_3/FPJ	J25	DDMA 37P	LIA_S_2/FPJ
J10	DDMA 50P	LIA_P_3/FPJ	J26	DDMA 37P	LIA_S_2/FPJ
J11	DDMA 50P	LIA_P_4/FPJ	J27	DDMA 37P	LIA_S_3/FPJ
J12	DDMA 50P	LIA_P_4/FPJ	J28	DDMA 37P	LIA_S_3/FPJ
J13	DDMA 50P	LIA_P_5/FPJ	J29	DDMA 78S	BIAS_M/FPJ
J14	DDMA 50P	LIA_P_5/FPJ	J30	DDMA 78S	BIAS_R/FPJ
J15	DDMA 50P	LIA_P_6/FPJ	J31	DDMA 37S	BIAS_M/FPJ
J16	DDMA 50P	LIA_P_6/FPJ	J32	DDMA 37S	BIAS_R/FPJ

NOTES

MATERIAL AL 6082
 CENTRE OF GRAVITY REFERRED TO REFERENCE HOLE
 $X=213.2mm$ $Y=132.4mm$ $Z=157.9mm$
 MOMENTS OF INERTIA REFERRED TO CENTRE OF GRAVITY
 $J_{Xp}=4.71 N.m^2$ $J_{Yp}=2.50 N.m^2$ $J_{Zp}=4.44 N.m^2$
 CONTACT AREA MOUNTING FEET=28180mm²
 THERMAL COATING AND BLACK ANODISING ESA.PSS.703
 SURFACE EMISSIVITY >0.85
 SPECIFIC HEAT 1170 J/Kg.°K
 ESTIMATED MASS=15676g

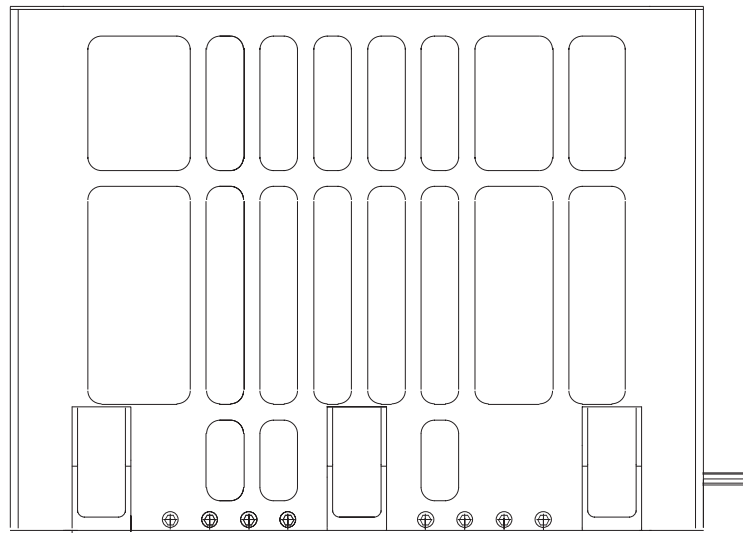
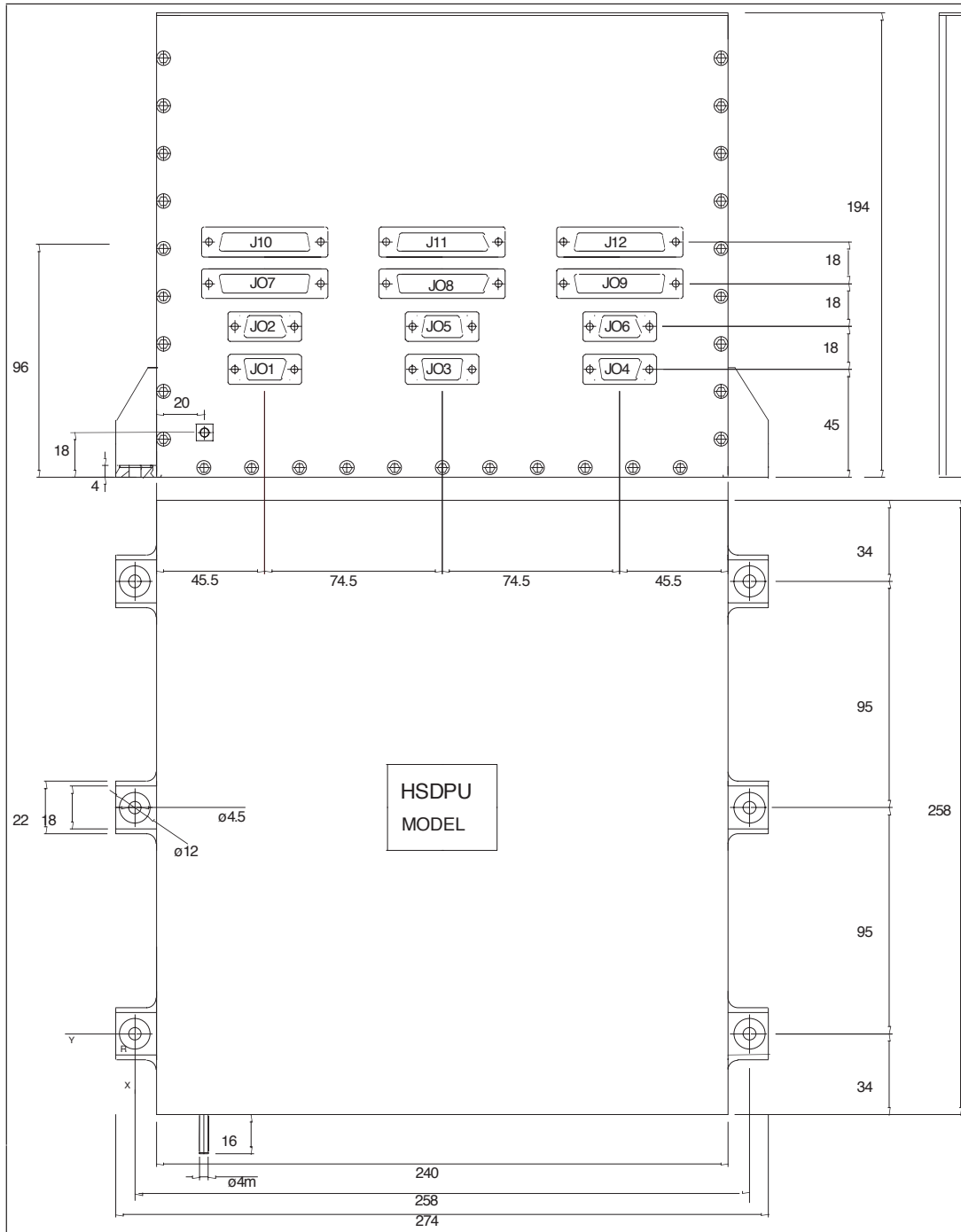
CONNECTOR TYPE P



CONNECTOR TYPE S



C	Mise à jour	REV	DEMAIN	
B	Mise à jour	REV	DEMAIN	
A	Mise à jour	REV	DEMAIN	
(Index)	Modifications	Date	Établi par	Approuvé par
Spécifications particulières				
Surface: Ra indice de rugosité générale Ra SOUS-TRAITANT Tol. ang.: max Cassez les angles vifs				
Matériau:		Protection		
Traitement thermique:		Épave/ Poids/ Niveau qualité		
		1/2		
SPIRE HSDCU ELECTRONIC BOX MECHANICAL INTERFACE CONTROL DRAWING				
<small>11 - Tous droits réservés. Toute réimpression ou utilisation non autorisée sans la permission écrite de la SPIRE est formellement interdite.</small>				
SAP/SERIES		COMMISSARIAT A L'ENERGIE ATOMIQUE		C.E.N. SADLAY
Tel: 01.89.08.79.25		01.89.08.58.78		
Fax: 01.89.08.79.98		AD SPIRE-MX-5100 000 C		



GENERAL TOLERANCE $\pm 1\text{mm}$
 WEIGHT 6,621 Kg $\pm 10\%$
 DIMENSION 274 X 258 X 194mm³
 CENTRE OF GRAVITY (E) X=120; Y=110; Z=96(TBC)
 MOMENT OF INERTIA (E) $J_x=5.6 \times 10^{-2} \text{Kg m}^2$ (TBC)
 $J_y=5.40 \times 10^{-2} \text{Kg m}^2$ (TBC)
 $J_z=7.2 \times 10^{-2} \text{Kg m}^2$ (TBC)
 CASING MATERIAL: ANTICORODAL 6082
 SURFACE TREATMENT: ALODINE 1200:
 alfa solar = 0,604
 R-solar = 0,396
 epsilon IR = 0,172
 R-IR = 0,828
 THERMAL CAPACITANCE: 6.621J/°C (TBC)
 CONTACT AREA OF BASEPLATE PLUS FEET 64428 mm²
 FLATNESS OF MOUNTING AREA: 0.1mm/100mm
 CONNECTORS:
 J01= DEMA-9P From DPU Prime to PDU Prime
 J02= DEMA-9P From DPU Red. to PDU Red.
 J03= DEMA-9S From DPU Prime to BuA Prime
 J04= DEMA-9S From DPU Prime to BuB Prime
 J05= DEMA-9S From DPU Red. to BuA Red.
 J06= DEMA-9S From DPU Red. to BuB Red.
 J07= DBMA-25P From DPU Prime to DCE Prime
 J10= DBMA-25P From DPU Red. to DCE Red.
 J08= DBMA-25P From DPU Prime to MCE Prime
 J11= DBMA-25P From DPU Red. to MCE Red.
 J09= DBMA-25P From DPU Prime to SCE Prime
 J12= DBMA-25P From DPU Red. to SCE Red.

UPDATED: 10/02/2002P. Baldetti
 UPDATED: 29/01/2002P. Baldetti
 UPDATED: 16/01/2002P. Baldetti

 Consiglio Nazionale delle Ricerche ISTITUTO FISICA del PIANO INTERPLANETARIO Via F. Sestini 100 00146 Roma (RM)	data 5/04/2001 	prog. Baldetti 	dis.
		scala materiale	
		tratt. Progetto: HERSHEY-HSDPU	
	TBY: data	titolo: HSDPUAVM	N. di: HER S005/002