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 UNIVERSITY COLLEGE LONDON Author: C BROCKLEY-BLATT


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Approved: T Dibbens *T Dibbens* Date: 12 Jul 04

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MULLARD SPACE SCIENCE LABORATORY

UNIVERSITY COLLEGE LONDON Author: C BROCKLEY-BLATT

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I Pain

T Paul

Cardiff **M Griffin**

P Hargrave

JPL **J Bock**

J Lilienthal


CEA **L Duband**

Herschel Project **Herschel.Planck@esa.int**

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

Checked: **B Winter** **Date:**

Approved: **T Dibbens** **Date:**

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Change Record

ISSUE	DATE	
1.0	12 July 2004	New document



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Glossary

BSM	Beam Steering Mechanism
BSBR	Thermal BuSBaR between cooler and detectors
CBFL1	Common BaFfLe 1
CDR	Critical Design Review
CEA	Commissariat à l'Énergie Atomique
CFIL1	Common FILter 1 (entry 4 K enclosure)
CM3-5	Common Mirror 3-5
CNES	Centre National des Etudes Spatiales
CoG	Centre of Gravity
CSTR1	Cold STRap 1 (level 0, Cryostat to base evaporator heat switch)
CSTR2	Cold STRap 2 (level 0, Cryostat to base sorption pump heat switch)
CSTR3	Cold STRap 3 (level 0, Cryostat to photometer detector box)
CSTR4	Cold STRap 4 (level 1, Vent line to optical bench)
FTS	Fourier Transform Spectrometer
GSFC	Goddard Space Flight Centre
HOB	Herschel Optical Bench
HOR	Herschel Optical Reference
³ He Cooler	³ He cooler (located in photometer side of the instrument)
JFBX	JFET box
JFET	Junction Field Effect Transistor
JPL	Jet Propulsion Laboratory
LAM	Laboratoire d'Astronomie Marseille
MGSE	Mechanical Ground Support Equipment
MSSL	Mullard Space Science Laboratory
MoI	Moments of inertia
NA	Not Applicable
OGSE	Optical Ground Support Equipment
PBFL2	Photometer BaFfLe 2
PDBX	Photometer Detector Box
PCAL	Photometer CALibration source
PDBX	Photometer Detector BoX
PDIC1	Photometer DIChroic 1
PDIC2	Photometer DIChroic 2
PFIL2	Photometer FILter (entrance PDBX)
PFIL3	Photometer FILter 2 (4 K-2 K enclosure)
PFIL4L/5L	Photometer FILter 4 and 5 at nose PLW
PFIL4M/5M	Photometer FILter 4 and 5 at nose PMW
PFIL4S/5S	Photometer FILter 4 and 5 at nose PSW
PLW	Photometer Long Wave detector
PM6-11	Photometer Mirror 6 to 11
PMW	Photometer Medium Wave detector

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RAL	Rutherford Appleton Laboratory
SBFL1	Spectrometer BaFfLe 1
SBFL2	Spectrometer BaFfLe 2
SBS1	Spectrometer Beam Splitter 1
SBS2	Spectrometer Beam Splitter 2
SCAL	Spectrometer CALibration source
SCCA	Spectrometer Corner Cube +X
SCCB	Spectrometer Corner Cube -X
SDBX	Spectrometer Detector BoX
SFIL2	Spectrometer FILter 2 (4 K - 2 K enclosure)
SFIL3L	Spectrometer FILter 3 (long wave)
SFIL3S	Spectrometer FILter 3 (short wave)
SFIL4L/5L	Spectrometer FILter at nose SLW
SFIL4S/5S	Spectrometer FILter at nose SSW
SHUT	Shutter mechanism
SM8A-12A	Spectrometer Mirror 8-12 +X chain
SM8B-12B	Spectrometer Mirror 8-12 -X chain
SM6-7	Spectrometer Mirror6-7
SMEC	Spectrometer MEChanism
SOB	SPIRE Optical Bench
SOR	Spire Optical Reference
SPIRE	Spectral and Photometric Imaging REceiver
TBC	To Be Confirmed
TBD	To Be Defined
TBI	To Be Issued

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1. Scope of Document


This document lists all the necessary documentation required to perform manufacturing, assembly, integration and test of the SPIRE Structure for the PFM.

2. Documents

All documents are listed in the Figure 3.2 of the CIDL.

3. Document Tree

The Structure Hardware Tree and associated Drawings are presented in the figures below.

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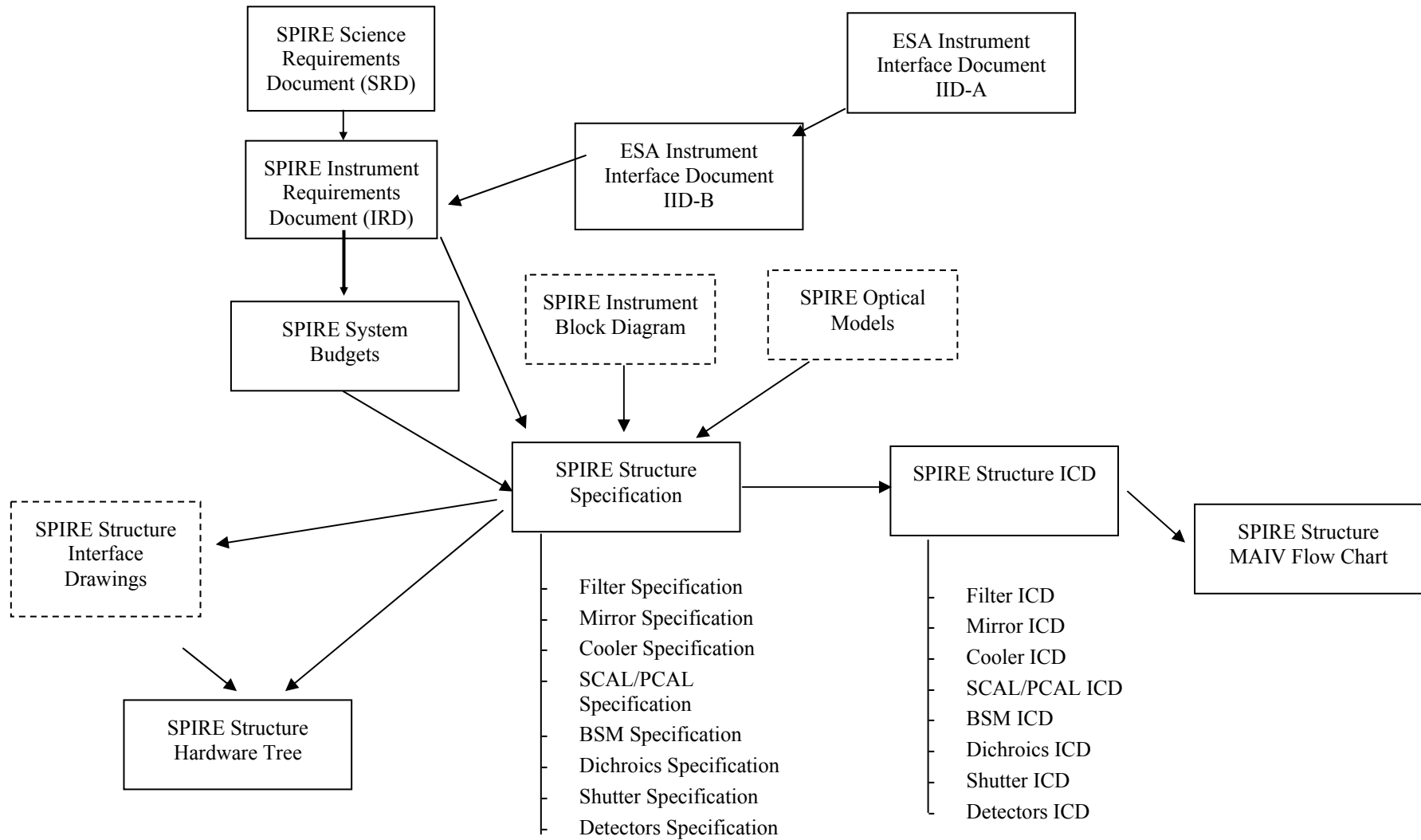


Figure 3-1 Document Tree


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Figure 3-2 Document List

Document Type	Document Name	Reference	Issue	Date
ESA				
AD01	ESA Instrument Interface Document Part A IID-A	PT-IID-A-04624	3	1-Jul-02
AD02	Instrument Interface Document Part B IID-B	PT-SPIRE-02124	2	31-Jul-01
SPIRE				
AD03	Instrumentation Requirements	SPIRE-RAL-PRJ-000034	1.1	10-Jan-02
AD04	Systems Budgets		4	1 June 2003
AD05	SPIRE Mirrors:Mass Estimate	LAM.PJT.SPI.OPT990001 ind 3	0	20-May-00
AD06	SPIRE Filters - Subsystem Specification	SPIRE-PRJ-000454	1.1	19-Apr-01
AD07	BSM Systems Specification	SPIRE-ATC-PRJ-000460	1	14-Jun-00
AD08	Email:Cable Routing J Bock			16-Nov-00
AD09	Email:Re: Cable Routing T Cafferty			18-Nov-00
AD10	Fax:ESA B Guillaume	SCI-PT/IFI/07222	0	05-Nov-99
AD11	Instrument Development Plan	SPIRE-RAL-PRJ-000035	1.1	12-Apr-01
AD12	HERSCHEL SPIRE Optical Alignment Plan	LOOM.KD.SPIRE.2000.001-3		03-Jan-00
AD13	SPIRE Major Milestones List	SPIRE-RAL-PRJ-000455	1.2	12-Apr-01
AD14	SPIRE Spectrometer Mirror Mechanism Subsystem Spec	LAS.PJT.SPI.SPT.200002	4	09-May-00
AD15	SPIRE Product Tree	SPIRE-RAL-PRJ-00030	2	12-Apr-01
AD16	Conceptual Design for the 300 mK thermal strap	Technote 000421	1	26-May-00
AD17	A stray light baffle design for thermal strap entry ports	SPIRE-RAL-NOT-000344	1	02-Mar-00
AD18	SPIRE Instrument CQM Requirements	SPIRE-RAL-NOT-000389	1	19-Jun-01
AD19	SPIRE Subsystem Block Diagram	SPIRE-RAL-NOT-000391	1	18-May-01
AD20	SPIRE Structure/Optics ICD	SPIRE-MSS-PRJ-0000294	1	13-Jun-00



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Document Type	Document Name	Reference	Issue	Date
AD21	SPIRE Structure/FTS mechanism	SPIRE-MSS-PRJ-0000298	1	14-Jun-00
AD22	SPIRE Structure/Filters	SPIRE-MSS-PRJ-	1	13-Jun-00
AD23	SPIRE Structure/Cooler	SPIRE-MSS-PRJ-0000331	1	13-Jun-00
AD24	SPIRE Optical Error Budgets	LOOM.KD.SPIRE.2000.002-2	4	17 Jan 02
AD25	SPIRE Mirrors Specification	LAM.PJT.SPI.SPT.200007 IND 9	9	
AD26	Thermal Configuration Control Document			
AD30	SPIRE AIV Plan	SPIRE-RAL-PRJ-00410	2.1	29-Mar-01
AD39	300mK Straps Subsystem Design Description	HSO-CDF-DD-038	1	12 Feb 03
AD40	300mK Supports MAIV flowchart	HSO-CDF-FC-039	1	10-Feb-03
AD41	Mechanical Parts and Processes	ECSS-Q-70A		
AD42	The Technical Reporting and Approval Procedure for Materials and Processes	ESA PSS-01-700		
AD59	300mK Supports Hardware Tree and Drawing List	HSO-CF-LI-041	1	11 Feb 03
AD60	300mK Supports Declared Processes List	HSO-CF-LI-043	1	11 Feb 03
AD61	300mK Supports Declared Materials and Parts List	HSO-CF-LI-042	1	11 Feb 03
AD62	300mK Supports Photometer Support Assembly Procedure	HSO-CF-LI-044	1	11 Feb 03
MSSL				
AD27	SPIRE Structure Subsystem Specification	SPIRE-MSS-PRJ-0000427	2.0	29-Nov-02
AD28	Structure Design and Development Plan	SPIRE-MSS-PRJ-0000426	2.0	2-Dec-02
AD29	SPIRE Structure Mechanical ICD	MSSL/SPIRE/SP004.11 (formerly SPIRE-MSS-PRJ-00617)	3.0	Feb 03
AD31	SPIRE Structure FMECA	MSSL/SPIRE/PS005.1	2.0	29-Nov-01
AD32	Technote 1 - Cooler	MSSL-technote-SPIRE-01	1	June - 00
AD33	Technote 2 – Thermal Strap Support Level 0	MSSL-technote-SPIRE-02	1	June - 00



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AD34	Technote 3 – Detector Box Support	MSSL-technote-SPIRE-03	1	July - 01
AD35	Technote 4 - Random Vibration Specification for the SPIRE instrument	MSSL-technote-SPIRE-04	1	July - 01
AD36	Technote 5 – Hareness Routing Detector to JFET	MSSL-technote-SPIRE-05	1	July - 01
AD37	Technote 6 - Interface Force Analysis correlation with accelerations	MSSL-technote-SPIRE-06	1	Sept -01
AD38	Technote 7 - Mirror beam footprint	MSSL-technote-SPIRE-07	3	Dec - 01
AD43	PA Plan	MSSL/SPIRE/PS001		
AD44	Interface Drawing and Modification Sheet	MSSL/SPIRE/SP005	1	Nov -02
AD45	Technote 8 – Titanium Versus Stainless Steel	MSSL-technote-SPIRE-08	1	Dec - 01
AD46	Technote 9 – FEA of Spire Structure	MSSL-technote-SPIRE-09	1	Jan - 02
AD48	Technote 10 – Thermal Analysis of Main Spire Supports	MSSL-technote-SPIRE-10	1	Feb - 02
AD49	Technote 11 – Screw Lubrication	MSSL-technote-SPIRE-11	1	May - 02
AD50	Technote 12 – 2K Photometer Box A Frames	MSSL-technote-SPIRE-12	1	August -02
AD51	Technote 13 – Cable Harness Pull Down Test	MSSL-technote-SPIRE-13	1	May -02
AD52	Technote 14 – Main Cone FEA Analysis	MSSL-technote-SPIRE-14	1	Nov - 02
AD53	Technote 15 – 2K Photometer Box Main Cone	MSSL-technote-SPIRE-15	1	August - 02
AD54	Structure – Cleanliness Control Plan	MSSL/SPIRE/PA006.02	1	Jan - 03
AD55	Structure Assembly, Integration and Handling	MSSL/SPIRE/SP006	3	May-03
AD56	Technote 16 – Interface Bolting Forces Between HOB and SPIRE	MSSL-technote-SPIRE-16	1	Feb 03
AD57	Technote 17 – Harness Tie down Pull Bracket Test	MSSL-technote-SPIRE-17	1	Feb 03
AD58	Technote 18 – FEA of the 300mK Thermal Strap System	MSSL-technote-SPIRE-18	1	Feb 03
AD63	Structure Declared Materials List	MSSL/SPIRE/PA002	6	July 2004
AD64	Structure Declared Processes List	MSSL/SPIRE/PA004	5	July 2004
AD65	Interface Drawing Issue 19 and Modification sheet	MSSL/SPIRE/SP005	4	July 2004
AD66	Technote 19 – Instrument and Detector Box Specification	MSSL-technote-SPIRE-19	1	May 2003
AD67	Technote 20 – SOB Mounted Units and Sine Specification	MSSL-technote-SPIRE-20	1	May 2003



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AD68	Technote 21 – Level 0 Thermal Strap redesign 01	MSSL-technote-SPIRE-21	1	August 2003
AD69	Technote 22 - Instrument Vibration Test Report STM Qualification (Warm)	MSSL-technote-SPIRE-22	1.2	August 2003
AD70	Technote 23 – Cold Vibration test Spec	MSSL-technote-SPIRE-23	1	March 2004
AD71	Technote 24 – CSL Coupled Analysis	MSSL-technote-SPIRE-24	1	March 2004
AD72	Technote 25 – Level 0 thermal Straps Design description	MSSL-technote-SPIRE-25	1	March 2004
AD73	A Frame Testing Final Report	MSSL/SPIRE/TR002	1	April 2003
AD74	Bakeout Report for the PFM	MSSL/SPIRE/TR006	1	July 2004
AD75	MSSL Structure Mass Budget	MSSL/SPIRE/SP012	2	Sept 2003
AD76	Structure Hardware Tree	MSSL/SPIRE/SP013	1	July 2004
AD77	Technote 26 – Instrument Cold Vibration test Report	MSSL-technote-SPIRE-26	1	May 2004
AD78	Technote 27 – PTC Random Spec	MSSL-technote-SPIRE-27	1	June 2004



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Dwg Level	Drawing Number	Issue	Sheets	System	Title	Material
X	A1/5264/300	19	7	SPIRE Interface	SPIRE Interface	-
X	A2/5264/907	9	1	SPIRE Interface	Bean Steering Mechanism Interface	-
X	A2/5264/908	3	1	SPIRE Interface	Cooler Interface	-
X	A1/5264/909	3	2	SPIRE Interface	SMEC Interface	-
X	A2/5264/910	3	1	SPIRE Interface	Spectrometer Calibrator Interface	-
X	A3/5264/911	2	1	SPIRE Interface	Detector Interface Adapter Plate	Alum Alloy BS1470 6082 T6
X	A1/5264/916	1	1	SPIRE Interface	Mirror Fixing Envelope	-
X	A1/5264/917	2	1	SPIRE Interface	RFI Filter Interface	-
X	A2/5264/918	1	1	SPIRE Interface	PCS/PFIL 3 Interface	-
X	A2/5264/919	3	1	SPIRE Interface	SFIL - 3 Interface	-
X	A1/5264/920	5	3	SPIRE Interface	SFIL - 2 Interface	-
X	A1/5264/921	3	1	SPIRE Interface	CFIL - 1 Interface	-
X	A1/5264/922	1	1	SPIRE Interface	PFIL - 2 Interface	-
X	A1/5264/923	1	1	SPIRE Interface	Harness Hole Interface	-
X	A1/5264/924	1	1	SPIRE Interface	Interface – 4K - Baffles	-
X	A1/5264/925	2	1	SPIRE Interface	Light trap end Stops - Photometer	-
X	A1/5264/926	3	1	SPIRE Interface	Photo. Light Trap Junct. with PTC	-
X	A1/5264/927	1	1	SPIRE Interface	Flexible Strap Forming Jig	-
X	A1/5264/300A	1	1	SPIRE Interface	Level 0 Straps Interface Detail	-
X	A1/5264/301	2	2	General Assembly	General Assembly	-
X	A1/5264/301-1	N/A	1	General Assembly	Strap Level '0' Evaporator	OFHC Copper



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Dwg Level	Drawing Number	Issue	Sheets	System	Title	Material
X	A1/5264/301-2	N/A	1	General Assembly	Strap Level '0' Pump	OFHC Copper
X	A1/5264/301-3	N/A	1	General Assembly	Strap Level '0' Detector Boxes	OFHC Copper
X	A1/5264/301-4	3	1	General Assembly	Cold Strap Support Leg	Torlon
X	A1/5264/301-5	N/A	1	General Assembly	Backing Plate	OFHC Copper
X	A1/5264/301-6	N/A	1	General Assembly	Backing Plate Thick	OFHC Copper
X	A1/5264/301-7	N/A	1	General Assembly	Insulator	Vespel
X	A1/5264/301-8	N/A	1	General Assembly	Isolator Plate	Vespel
X	A1/5264/301-9	N/A	1	General Assembly	Clamp Plate	OFHC Copper
X	A1/5264/301-10	5	1	General Assembly	Cold Strap Support	Torlon
X	A1/5264/301-10A	5	1	General Assembly	Cold Strap Support	Torlon
X	A1/5264/301-11	5	1	General Assembly	Cold Strap Support Clamp	Alum Alloy BS1414 6082
X	A1/5264/301-12	2	1	General Assembly	Insulating Bush	Torlon
X	A1/5264/301-13	N/A	1	General Assembly	Insulator 2	Vespel
X	A1/5264/301-14	1	1	General Assembly	Cold Strap Support Diagonal	Torlon
X	A1/5264/302	2	2	Common Structure	Photometer Cover Assembly	-
X	A2/5264/302-1	5	1	Common Structure	FPU Blade Mount Unit	Stainless Steel BS970 303/S31
X	A3/5264/302-2	2	1	Common Structure	Insulating Bush	Vespel
X	A3/5264/302-3	1	1	Common Structure	Special Washer	Stainless Steel BS970 303/S31
X	A1/5264/302-4	5	5	Common Structure	Optical Bench	Alum Alloy BS1414 6082
X	A1/5264/302-5	4	1	Common Structure	Fixed Mount	Stainless Steel
X	A1/5264/302-6	9	3	Common Structure	One Piece Photometer Cover	Alum Alloy BS1414 6082
X	A1/5264/302-7	2	1	Common Structure	Photometer Cover Bottom Seal	Alum Alloy BS1414 6082
X	A1/5264/302-8	2	1	Common Structure	Photometer Cover Top Seal	Alum Alloy BS1414 6082
X	A1/5264/302-9	2	1	Common Structure	Photometer Cover Insert	Alum Alloy BS1414 6082
X	A1/5264/302-10	7	2	Common Structure	Photometer Top Cover	Alum Alloy BS1414 6082
X	A1/5264/302-12	2	1	Common Structure	Pfil 2 Backplate	Alum Alloy BS1414 6082



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X	A1/5264/302-13	1	1	Common Structure	PFIL 2 H Seal	Alum Alloy BS1414 6082
X	A1/5264/302-14	4	1	Common Structure	A Frame Bracket	Alum Alloy BS1414 6082
X	A1/5264/302-15	2	1	Common Structure	A Frame Support Plate	Alum Alloy BS1414 6082
X	A1/5264/302-16	1	1	Common Structure	CFIL 1 H Section	Alum Alloy BS1414 6082
X	A1/5264/302-17	1	1	Common Structure	PFIL2 Clamp Ring	Alum Alloy BS1414 6082
X	A1/5264/302-18	1	1	Common Structure	Tubular Dowel	Stainless Steel BS970 303/S31
X	A1/5264/302-19	1	1	Common Structure	Tubular Dowel	Stainless Steel BS970 303/S31
X	A3/5264/302-20A	1	1	Common Structure	2K Interconnecting Strap	99.999% Pure Copper
X	A2/5264/302-22	3	1	Common Structure	BDA Connector flange – Photo.	Alum Alloy BS1414 6082
X	A1/5264/302-23	4	1	Common Structure	BDA connector flange – Spectro.	Alum Alloy BS1414 6082
X	A1/5264/302-24	2	1	Common Structure	Plug, BDA Connector Flange	Alum Alloy BS1414 6082
X	A1/5264/302-25	3	1	Common Structure	Harness support BDA connector Flange	Alum Alloy BS1414 6082
X	A1/5264/302-26	1	1	Common Structure	A Frame Bracket (Spec)	Alum Alloy BS1414 6082
X	A1/5264/302-27	1	1	Common Structure	RFI Filter Frame Corner Bracket	Alum Alloy BS1414 6082
X	A1/5264/302-28	2	1	Common Structure	Temporary RF Bracket	Alum Alloy BS1414 6082
X	A1/5264/302-29	2	1	Common Structure	FRI Filter frame Edge Bracket	Alum Alloy BS1414 6082
X	A1/5264/302-30	4	1	Common Structure	Cooler to Photo Detector Box Strap	OFHC Copper
X	A1/5264/302-31	3	1	Common Structure	Cooler to Spec Detector Box Strap	OFHC Copper
X	A1/5264/302-32	5	1	Common Structure	Cooler Strap Isolation Plate	Vespel
X	A1/5264/302-33	2	1	Common Structure	Clamp Plate Photometer Strap	Alum Alloy BS1414 6082
X	A1/5264/302-34	1	1	Common Structure	Stainless Steel Bolts Cut Down (No dwg.)	
X	A1/5264/302-39	1	1	Common Structure	Dowel retaining Plate	Alum Alloy BS1414 6082
X	A1/5264/302-40	1	1	Common Structure	Tubular Dowels (8mm)	Stainless Steel BS970 303/S31
X	A1/5264/302-41	1	1	Common Structure	Dowel – ‘A’ Frame Support	Stainless Steel BS970 303/S31
X	A1/5264/302-42	1	1	Common Structure	Dowel – ‘A’ Frame Top	Stainless Steel BS970 303/S31
X	A1/5264/302-43	1	1	Common Structure	Special Washer – A Frame Bracket	Stainless Steel BS970 303/S31
X	A1/5264/302-44	1	1	Common Structure	Blanking Plug	Alum Alloy BS1414 6082 T6
X	A3/5264/302-45	2	1	Common Structure	Diagonal length of spectrometer cold strap	Torlon



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X	A3/5264/302-46	3	1	Common Structure	Spectrometer MK2 Level 0 Strap	99.999% Pure Copper
X	A3/5264/302-47	3	1	Common Structure	Pump MK2 Level 0 Strap	99.999% Pure Copper
X	A3/5264/302-48	5	1	Common Structure	Evaporator MK2 Level 0 Strap Inner	99.999% Pure Copper
X	A3/5264/302-49	5	1	Common Structure	Joining Plate Evaporator Outer	99.999% Pure Copper
X	A3/5264/302-50	3	1	Common Structure	Upper Flex Pump	99.999% Pure Copper
X	A3/5264/302-51	3	1	Common Structure	Upper Flex Evaporator	99.999% Pure Copper
X	A3/5264/302-52	6	1	Common Structure	Lower Flex Spec Outer	99.999% Pure Copper
X	A3/5264/302-53	5	1	Common Structure	Lower Flex Pump Outer	99.999% Pure Copper
X	A3/5264/302-54	4	1	Common Structure	Lower Flex Evaporator Outer	99.999% Pure Copper
X	A3/5264/302-56	2	1	Common Structure	Level 0 Coldstrap Evaporator Outer	99.999% Pure Copper
X	A3/5264/302-57	3	1	Common Structure	Joining Plate Evaporator Inner	99.999% Pure Copper
X	A3/5264/302-58	2	1	Common Structure	Joining Plate Pump/Spec	99.999% Pure Copper
X	A3/5264/302-59	3	1	Common Structure	Upper Flex Spec	99.999% Pure Copper
X	A3/5264/302-60	1	1	Common Structure	Dowel 18L x Dia 5	Stainless Steel BS970 303/S31
X	A1/5264/303	2	2	Spectrometer Cover	Spectrometer Cover Assembly	-
X	A1/5264/303-1	3	2	Spectrometer Cover	Spectrometer Cover Wall	Alum Alloy BS1414 6082
X	A1/5264/303-1A	1	1	Spectrometer Cover	Adapter Block	Alum Alloy BS1414 6082
X	A1/5264/303-2	3	3	Spectrometer Cover	Spectrometer Cover Lid	Alum Alloy BS1414 6082
X	A1/5264/303-3	2	3	Spectrometer Cover	Spectrometer Cover Baffle	Alum Alloy BS1414 6082
X	A1/5264/303-4	2	1	Spectrometer Cover	Spectrometer Cover Bottom Seal	Alum Alloy BS1414 6082
X	A1/5264/303-5	2	1	Spectrometer Cover	Spectrometer Cover Top Seal	Alum Alloy BS1414 6082
X	A1/5264/303-6	2	1	Spectrometer Cover	Spectrometer Baffle SM12	Alum Alloy BS1414 6082 T6
X	A1/5264/303-6A	1	1	Spectrometer Cover	Spectrometer Baffle SM1 Development	-
X	A1/5264/304-6	6	1	Photometer Cover	CFIL 1 Baffle Mount	Alum Alloy BS1414 6082 T6
X	A2/5264/304-7	3	1	Photometer Cover	CFIL 1 Clamp Ring	Alum Alloy BS1414 6082 T6
X	A1/5264/305	2	5	Optical Bench	Optical Bench Assembly	-
X	A1/5264/305-1	1	1	Optical Bench	Optical Bench Harness Tie Positions	-
X	A1/5264/305-2	2	1	Optical Bench	SM06 Mirror Mount	Alum Alloy BS1470 6082 T6



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X	A1/5264/305-3	3	1	Optical Bench	SM07 Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-4	3	1	Optical Bench	SM08A Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-6	2	1	Optical Bench	SM09A & SM10A Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-7	2	1	Optical Bench	SM09B & SM10B Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-8	3	1	Optical Bench	SM11A Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-9	2	1	Optical Bench	SM11B Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-10	1	1	Optical Bench	SM12A Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-11	1	1	Optical Bench	SM12B Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-12	2	1	Optical Bench	Secondary Optical Bench (CM3/SPMOT)	Alum Alloy BS1470 6082 T6
X	A1/5264/305-13	2	1	Optical Bench	PM06 Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-14	1	1	Optical Bench	PM08 Mirror Mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-15	1	1	Optical Bench	SM06 & SM07 Bulkhead	Alum Alloy BS1470 6082 T6
X	A3/5264/305-16	8	1	Optical Bench	Optical Reference Cube	Alum Alloy BS1470 6082 T6
X	A2/5264/305-17	1	1	Optical Bench	PM10 Mirror mount	Alum Alloy BS1470 6082 T6
X	A1/5264/305-18	1	1	Optical Bench	SM06 Mirror mount - Spare	Alum Alloy BS1470 6082 T6
X	A1/5264/305-19	1	1	Optical Bench	PM06 Mirror mount – Spare	Alum Alloy BS1470 6082 T6
X	A2/5264/305-20	5	1	Optical Bench	SFIL 2 Mount	Alum Alloy BS1470 6082 T6
X	A3/5264/305-21	4	1	Optical Bench	SFIL 2 Clamp	Alum Alloy BS1470 6082 T6
X	A3/5264/305-22	3	1	Optical Bench	SFIL 2 Cold Stop	Alum Alloy BS1470 6082 T6
X	A1/5264/305-23	4	1	Optical Bench	SBS 1 and SBS 2 Filter Mount	Alum Alloy BS1470 6082 T6
X	A2/5264/305-24	1	1	Optical Bench	SBS 1 and SBS 2 Filter Clamp	Alum Alloy BS1470 6082 T6
X	A2/5264/305-25	1	1	Optical Bench	Special Washer Sub Optical Bench	Stainless Steel BS970 303/S31
X	A2/5264/305-26	3	1	Optical Bench	Mirror Anti Rotation Dowel	Stainless Steel BS970 303/S31
X	A2/5264/305-27	2	1	Optical Bench	Optical Reference Cube Dowels	Stainless Steel BS970 303/S31
X	A2/5264/305-28	2	1	Optical Bench	SFIL2 - Dowel	Stainless Steel BS970 303/S31
X	A2/5264/305-29	1	1	Optical Bench	SM9B/SBS1 Baffle	Alum Alloy BS1470 6082 T6
X	A2/5264/305-30	1	2	Optical Bench	SM9A/SBS1 Baffle	Alum Alloy BS1470 6082 T6



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X	A1/5264/306	4	2	Photometer 2K Box	Photometer 2K Box Assembly	-
X	A1/5264/306A	2	1	Photometer 2K Box	Photometer BDA Cable Routes	-
X	A1/5264/306B	4	1	Photometer 2K Box	Photometer Bus Bar Assembly	-
X	A1/5264/306-1	5	3	Photometer 2K Box	Back Cover	Alum Alloy BS1470 6082 T6
X	A1/5264/306-2	7	4	Photometer 2K Box	Spine	Alum Alloy BS1470 6082 T6
X	A1/5264/306-3	5	3	Photometer 2K Box	Front Cover	Alum Alloy BS1470 6082 T6
X	A1/5264/306-4	1	1	Photometer 2K Box	Photometer Cold Stop Clamp	Alum Alloy BS1470 6082 T6
X	A1/5264/306-5	2	1	Photometer 2K Box	Photometer Cold Stop	Phosper bronze
X	A3/5264/306-7	3	1	Photometer 2K Box	Bus Bar Upper	99.999% Pure Copper
X	A3/5264/306-8	4	1	Photometer 2K Box	Busbar Lower	99.999% Pure Copper
X	A3/5264/306-9	3	1	Photometer 2K Box	BDA-Busbar Flange	99.999% Pure Copper
X	A3/5264/306-10	3	1	Photometer 2K Box	Bus Connector PLW	99.999% Pure Copper
X	A3/5264/306-11	2	1	Photometer 2K Box	Bus Junction ans PMW Connector	99.999% Pure Copper
X	A3/5264/306-12	3	1	Photometer 2K Box	Bus Junction Clamp Plate	99.999% Pure Copper
X	A3/5264/306-13	3	1	Photometer 2K Box	Light Trap to Bus Junction	99.999% Pure Copper
X	A3/5264/306-14	3	1	Photometer 2K Box	Bus Connector PSW	99.999% Pure Copper
X	A3/5264/306-15	2	1	Photometer 2K Box	BDA-Busbar Flange	99.999% Pure Copper
X	A3/5264/306-16	1	1	Photometer 2K Box	PLW Bus Strap	99.999% Pure Copper
X	A3/5264/306-17	1	1	Photometer 2K Box	PMW Bus Strap	99.999% Pure Copper
X	A3/5264/306-18	1	1	Photometer 2K Box	PSW Bus Strap	99.999% Pure Copper
X	A3/5264/306-19	3	1	Photometer 2K Box	End Stop Photometer Light Trap	99.999% Pure Copper
X	A3/5264/306-20	1	1	Photometer 2K Box	Light Trap Feedthrough Photometer	99.999% Pure Copper
X	A3/5264/306-21	1	1	Photometer 2K Box	Stop Bush – Bus Bar Mountings	Stainless Steel
X	A3/5264/306-22	1	1	Photometer 2K Box	Load Spreader Photometer	Alum Alloy BS1470 6082 T6
X	A3/5264/306-23	1	1	Photometer 2K Box	Thermal Pad	99.999% Pure Copper
X	A3/5264/306-25	1	1	Photometer 2K Box	Strap Stud	Stainless Steel BS970 303/S31
X	A3/5264/306-26	1	1	Photometer 2K Box	Stud Plate - inner	Stainless Steel BS970 303/S31
X	A3/5264/306-27	1	1	Photometer 2K Box	Stud Plate Outer - Photometer	Stainless Steel BS970 303/S31



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X	A3/5264/306-28	1	1	Photometer 2K Box	Insulating Bush	Torlon
X	A3/5264/306-29	1	1	Photometer 2K Box	Strap Spacer - Photometer	Stainless Steel
X	A1/5264/307	1	1	Spectrometer 2K Box	Spectrometer 2K Box Assembly	Various
X	A1/5264/307A	2	1	Spectrometer 2K Box	Spectrometer BDA Cable Routes	-
X	A1/5264/307B	1	1	Spectrometer 2K Box	Bus Bar Assy. Spectrometer	-
X	A1/5264/307-1	5	3	Spectrometer 2K Box	Spectrometer 2K Box Assembly	Alum Alloy BS1470 6082 T6
X	A1/5264/307-2	4	2	Spectrometer 2K Box	Filter Mounting plate Spec. 2K Box	Alum Alloy BS1470 6082 T6
X	A1/5264/307-3	1	1	Spectrometer 2K Box	Clamp plate SFIL-3	Stainless Steel BS970 303/S31
X	A1/5264/307-4	2	1	Spectrometer 2K Box	Blade Mount 2K Spectrometer Box	Stainless Steel BS970 303/S31
X	A1/5264/307-5	1	1	Spectrometer 2K Box	Blade Top Bush	Stainless Steel BS970 303/S31
X	A1/5264/307-6	2	1	Spectrometer 2K Box	Light Trap Feedthrough spect.	99.999% Pure Copper
X	A1/5264/307-7	1	1	Spectrometer 2K Box	Light Baffle Junction	99.999% Pure Copper
X	A1/5264/307-8	1	1	Spectrometer 2K Box	SSW Spect. BDA to light trap strap	99.999% Pure Copper
X	A1/5264/307-9	1	1	Spectrometer 2K Box	SLW Spect. BDA to Light Trap Strap	99.999% Pure Copper
X	A1/5264/307-10	3	1	Spectrometer 2K Box	BDA Cold Interface Spectrometer	99.999% Pure Copper
X	A1/5264/307-11	1	1	Spectrometer 2K Box	Bush, Inner spect. Light Trap	99.999% Pure Copper
X	A1/5264/307-12	1	1	Spectrometer 2K Box	Bush, Outer spect. Light Trap	99.999% Pure Copper
X	A1/5264/307-13	1	1	Spectrometer 2K Box	Cold Strap Support	99.999% Pure Copper
X	A1/5264/307-14	1	1	Spectrometer 2K Box	Load Spreader Spectrometer	Alum Alloy BS1470 6082 T6
X	A1/5264/307-15	1	1	Spectrometer 2K Box	Thermal Pad	OFHC Copper
X	A1/5264/307-16	1	1	Spectrometer 2K Box	Strap Spacer	Alum Alloy BS1470 6082 T6
X	A1/5264/307-17	1	1	Spectrometer 2K Box	Strap Stud	Stainless Steel BS970 303/S31
X	A1/5264/307-18	1	1	Spectrometer 2K Box	Stud Plate	Alum Alloy BS1470 6082 T6
X	A1/5264/307-19	1	1	Spectrometer 2K Box	Stud Plate Outer	Alum Alloy BS1470 6082 T6
X	A3/5264/309	3	1	Level 0 Feed Thorough	Strap/Light Baffle Assembly	-
X	A3/5264/309A	2	1	Level 0 Feed	Level O Cold Straps Assembly	-
X	A3/5264/309B	1	1	Level 0 Feed	Spectrometer Cold strap FM Assembly	-
X	A3/5264/309C		1	Level 0 Feed	Pump Cold strap FM Assembly	-



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	X	A3/5264/309D	1	1	Level 0 Feed	Evaporator Cold strap FM Assembly	-
	X	A3/5264/309-1	2	1	Level 0 Feed Thorough	Baffle Inner	99.999% Pure Copper
	X	A3/5264/309-2	3	1	Level 0 Feed Thorough	Baffle Outer	99.999% Pure Copper
	X	A3/5264/309-2A	6	1	Level 0 Feed	Baffle Outer Core	99.999% Pure Copper
	X	A3/5264/309-2B	1	1	Level 0 Feed	Baffle Outer Core	99.999% Pure Copper
	X	A3/5264/309-2C	1	1	Level 0 Feed	Baffle Centre	Alum Alloy BS1470 6082 T6
	X	A3/5264/309-5	2	1	Level 0 Feed Thorough	Anti Torque Plate	Alum Alloy BS1470 6082 T6
	X	A3/5264/309-6	1	1	Level 0 Feed Thorough	Special Washer	Stainless Steel BS970 303/S31
	X	A3/5264/309-7	1	1	Level 0 Feed Thorough	Stop Screw	Stainless Steel BS970 303/S31
X		A2/5264/310	1	1	Dichroics	PDIC-1 Assy	-
	X	A2/5264/310-1	2	1	Dichroics	PDIC-1 Mount	Alum Alloy BS1470 6082 T6
	X	A2/5264/310-2	1	1	Dichroics	PDIC-1 Clamp Ring	Alum Alloy BS1470 6082 T6
	X	A2/5264/310-3	2	1	Dichroics	Dowel Bolt 6-32 UNC	Stainless Steel BS970 303/S31
	X	A2/5264/311	1	1	Dichroics	PDIC-2 Assy	-
	X	A2/5264/311-1	2	1	Dichroics	PDIC-2 Mount	Alum Alloy BS1470 6082 T6
	X	A2/5264/311-2	1	1	Dichroics	PDIC-2 Clamp Ring	Alum Alloy BS1470 6082 T6
X		A2/5264/312	1	1	Photometer 2K Box	Cone Mount – 2K Photometer Box	Stainless Steel BS970 321/S31
X		A2/5264/313	2	1	Photometer 2K Box	A Frame Mount 2K Photometer Box	Stainless Steel BS970 321/S31
	X	A2/5264/313-1	2	1	Photometer 2K Box	Blade Washer 2K	Stainless Steel BS970 303/S31
	X	A2/5264/313-2	2	1	Photometer 2K Box	Blade Top Bush 2K Photometer Box	Stainless Steel BS970 303/S31
	X	A2/5264/313-3		1	Photometer 2K Box	Insulation dowel	Torlon
	X	A2/5264/313-4		1	Photometer 2K Box	Insulating top hat	Torlon
	X	A3/5264/313-1	1	1	Photometer 2K Box	Blade Washer 2K	Stainless Steel BS970 321/S31
	X	A3/5264/313-2	1	1	Photometer 2K Box	Blade top bush	Stainless Steel BS970 321/S31
X		A3/5264/314	1	2	SCAL Box	SCAL Box Assembly	Alum Alloy BS1470 6082 T6
	X	A3/5264/314-1	8	2	SCAL Box	SCAL Baffle Box Main Body	Alum Alloy BS1470 6082 T6
	X	A3/5264/314-2	1	1	SCAL Box	SCAL Cover	Alum Alloy BS1470 6082 T6
	X	A3/5264/314-3	1	1	SCAL Box	SCAL Baffle Riing	Alum Alloy BS1470 6082 T6

