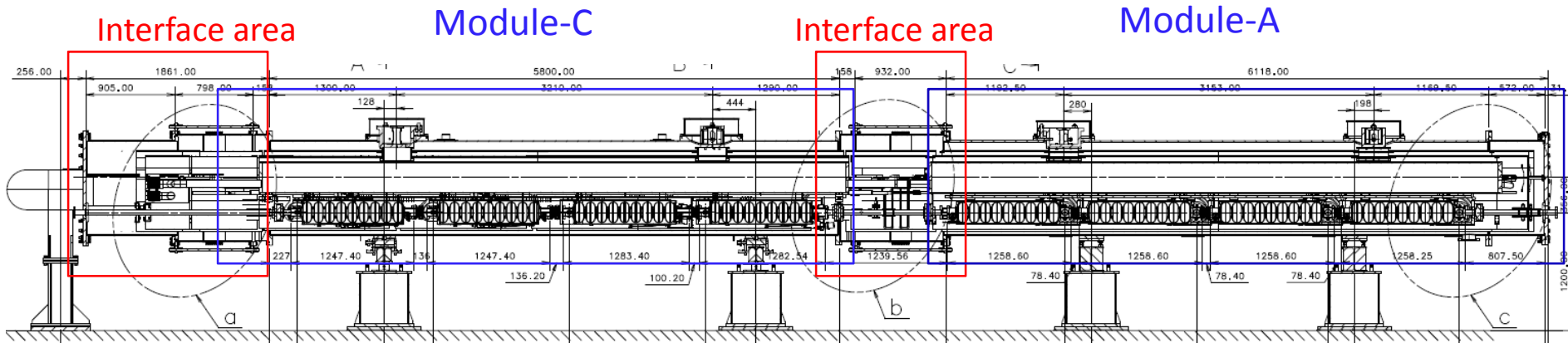


Component list for S1-G cryomodules

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KEK

S1-G cryomodules



Cryomodule-C

- Cryostat and cryo-components: INFN
- Two cavity packages : FNAL
- Two cavity packages : DESY

Cryomodule-A and interface areas

- Cryostat and cryo-components: KEK
- 4 cavity packages : KEK
- Components for connection in the interface areas : KEK

Module components (1)

	Items	Sub-components	Responsible Institute	No. of pcs	Remark
Cryomodule-C	Vacuum Vessel		INFN	1 set	
		Vacuum cap (post cover with bolts and oring)	INFN	2	including conection bolts
		Craw cramp for vessel end flange	KEK	2 sets	
		O-ring for vessel end-flange	KEK	2	
		Vessel movable supports	INFN	2 sets	including conection bolts
	Support post (fixed type)		INFN	1 set	including a set of bracket
	Support post (movable type)		INFN	1 set	including a set of bracket
	Gas return pipe		INFN	1	
		C-cramp (right side)	INFN	8 sets	including a set of sliding mechanism and pressure control bolts and washers
		C-cramp (left side)	INFN	8 sets	including a set of sliding mechanism and pressure control bolts and washers
	Copper braids (between shields and posts)		INFN	8	
	Copper braids (between shields and couplers)			to be decided	
	MLI for GRP		INFN		5 layer-blanket, preassembled
	Bellow between 2K helium supply pipes welded to jackets		this is NOT PROVIDED BY INFN		

Module components (2)

Cryomodule-C	Cool-down and warm-up pipe		INFN	1	branch pipes and connection flanges are welded
		Metal seal		4 sets	How many pieces as the backup?
	5K forward pipe		INFN	1	including support pieces to the shelf
	5K return pipe with fin		INFN	1	
	5K shield Al plates		INFN	1 set	
	MLI for 5K shield		INFN	1 set	10-layer-blanket, preassembled
	80K forward pipe		INFN	1	including support pieces to the shield
	80K return pipe with fin		INFN	1	
	80K shield Al plates		INFN	1 set	
	MLI for 80K shield		INFN	1 set	30-layer-blanket
	Pipe for cables of tuner components		INFN	1 set	including support pieces to the shelf
	Sensors				
		Cernox thermometer	KEK		
		PtCo thermometer	KEK		During assembly in Zanon, some of them are set on shields and posts.
		Thermometer cable	KEK		
		CC thermocouple	KEK		During assembly in Zanon, some of them are set on shields and posts.
		WPM	KEK	5 sets	including cables and connection pipes
	Signal terminal port		KEK	2 sets	one is for thermometers, and the other is for WPMs.
	Vacuum port flange		KEK	1 set	

DESY cavity package (1)

	Items	Sub-components	Responsible Institute	No. of pcs	Remark
DESY cavity	Cavity-jacket	Main body	DESY	2 sets	
		SI			
		Alignment fiducial	DESY	2 sets	
	Tuner (Saclay)	Main components	DESY	2 sets	
		Cable	DESY	2 sets	including cable-terminals, and control system
	Input coupler	Main components	DESY	2 sets	including assembling bolts and nuts
		Diagnostic cable	DESY	2 sets	
		Thermal intercept	DESY	2 sets	
	HOM coupler	Main components	DESY	2 sets	welded to cavity jacket
		RF cable	DESY	2 sets	
		Monitor cable	DESY	2 sets	
		RF terminal	DESY	2 sets	terminal and flange on the vacuum vessel
		Thermal intercept	DESY	2 sets	
	Gate valve			1 set	At one end in the string, the gate valve is required.

DESY cavity package (2)

	Magnetic shield	Cavity-jacket	DESY	2 sets	
		Between DESY cavities	DESY	1 set	
		Between DESY and FNAL cavities		1 set	
		Between DESY cavity and G.V.		1 set	
	Connection beam pipe and bellow	Between DESY cavities	DESY	1 set	including Al hexagon seal. How many pieces as the backup?
		Between DESY and FNAL cavities		1 set	including Al hexagon seal
		Between DESY cavity and gate valve		1 set	including Al hexagon seal
	Beam pipe between gate valve and module end flange		KEK	1 set	including metal seal

FNAL cavity package (1)

	Items	Sub-components	Responsible Institute	No. of pcs	Remark
FNAL cavity	Cavity-jacket	Main body	FNAL	2 sets	cavity-jacket with helium supply pipe
		SI			
		Alignment fiducial	FNAL	2 sets	
	Tuner (Blade)	Main components	FNAL	2 sets	
		Cable	FNAL	2 sets	including cable-terminals, and control system
	Input coupler	Main components	FNAL	2 sets	including assembling bolts and nuts
		Diagnostic cable	FNAL	2 sets	
		Thermal intercept	FNAL	2 sets	
	HOM coupler	Main components	FNAL	2 sets	
		RF cable	FNAL	2 sets	
		Monitor cable	FNAL	2 sets	
		RF termina	FNAL	2 sets	terminal and flange on the vacuum vessel
		Thermal intercept	FNAL	2 sets	

FNAL cavity package (2)

	Gate valve			1 set	At one end in the string, the gate valve is required.
	Magnetic shield	Cavity-jacket	FNAL	2 sets	
		Between FNAL cavities	FNAL	1 set	
		Between FNAL cavity and gate valve		1 set	
	Connection beam pipe bellow	Between FNAL cavities	FNAL	1 set	including Al hexagon seal, and backups.
		Between FNAL cavity and gate valve		1 set	including Al hexagon seal
	Beam pipe between gate valve and Module-A		KEK	1 set	including metal seal