Utilisation Relevant Data

Launch configuration		Flight Hardware			
Launch vehicle Launch site: Launch date:	e: Space Shuttle. Launched inside the Orbiter cargo bay, mounted on a Spacelab pallet via a Manual Berthing Mechanism. Kennedy Space Center, Cape Canaveral Florida January 2009 (Flight 14.A)	Primary:	Forged/Machined Aluminium dome welded to skirt. Window Assembly, (6 side and 1 top), glass panes and window heaters and thermistors. Passive Common Berthing Mechanism bolted to the skirt		
On orbit configuration			Micro-meteoroid and orbital Debris Protection. System Aluminium bumper on the cylindrical por-		
	location by the Shuttle Remote Manipulator System and Station Remote Manipulator System interfacing with the Cupola. Initially berthed to Node 1 Port-port, later relo cated to Node 3 Forward-port, the nominal loca tion. (Node 3 Aft-port for contingency)	Secondary	tion.2 Flight Releasable Grapple Fixture interface plates.: Internal closure panels equipment & harness sup port brackets.		
Outfitting on-orbit				Manually operated shutters for each window (also serves as MDPS)	
Permanently: Periodically:	1 Audio Terminal Unit and 2 Utility Outlet Panels. Robotic Work Station, Portable Computer System, Portable Light System, Foot restraint device to support crew operations.		 2 Window Change Out Covers to support on orbit. window assembly replacement. Thermal Control System; water supplied from Node. High Temperature loop. Passive thermal control utilizes Multi-Layer Insulation and thermo optical properties. Environmental Control and Life Support air from Node. Inter Module Ventilation. MIL-1553 Bus, Discrete I/O, Audio, Video. 		

Cupola **Observation module**













Specifications									
Dimensions		4							
Overall heigh	Overall height:		1,500 mm						
Maximum dia	2955 mm (including								
	Protection System (MDPS) with								
	shutters closed and including								
	Flight	Releasable Grapple Fixture							
Mass budge									
Launch mass	1,805 kg								
On-orbit mas	SS:	1,880 kg							
Communications and data infrastructure									
	Via Audio Terminal Unit that is connected to Node 3 and the rest of the station								
	1553B buses via Utility Outlet Panel Dedicated discrete lines for Robotic Work Station								
Environmen	tal control								
	Environmental Control and Life								
	Suppo	ort air from I	Node Inter-						
	Modul	Module-Ventilation with manual							
Electrical po	simeni								
		Windo	w heaters p	owered dire	ctlv				
	from the Node 120 V interface,								
	Roboti	c Workstatio	on, r Svotom or	d					
		Portab	le Liaht Svs	tem powere	d via				
		the Uti	the Utility Outlet Panel,						
Constructio	n motorial	120 V	interface.						
Dome:	n materiai	Forger	A AL 2210_T	851					
Skirt:	Al 221	AI 2219-1851							
Thermal con	Alumir	Aluminium Kapton Multi-layer							
Windows:	Insulation								
MDPS blank	Al-6061-T6,								
shutters:		AL 70	AL 7075-T7352 and						
		Kevlar	vlar/Nextel sheets						
Ownership a	and develo	oment a	uthority						
The Cupola is provided by ESA									
	to NASA in exchange for the								
transport of 5 external payloads.									
Alonio Charlio (Turin, Hold Lasting									
		sortium of European sub-							
		contra	contractors.						
ļ,									
	PROJECT:	Intern	ational	SCALE: 1:50	SCALE: 1:50				
		Брасе	Station	DIMENSION	S : mm				
TITLE:			DOCUMEN	NT N°:	REV.				
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