



DESIGN SPECIFICATIONS

1. LOCATION: 22m FROM APS BM SOURCE CENTER
2. POWER LOAD: APS BM 7 GeV, 300mA SOURCE
3. INPUT APERTURE SIZE: 136mm (H) x 12mm (V)
4. OUTPUT APERTURE SIZE: 44.4mm (H) x 4.50mm (V)
5. MASK GRAZING INCIDENCE ANGLE: 90 DEGREE
6. VERTICAL MAXIMUM BEAM ACCEPTANCE: 0.56 mrad
7. VERTICAL MAXIMUM BEAM PASS-THROUGH: 0.30 mrad
8. HORIZONTAL MAXIMUM BEAM ACCEPTANCE: 6.32 mrad
9. HORIZONTAL MAXIMUM BEAM PASS-THROUGH: 2.02 mrad
10. INPUT FLANGE: 8 inch
11. OUTPUT FLANGE: 8 inch
12. MASK MATERIAL: O.F.H.C.
13. WATER COOLING: CONVENTIONAL TUBE
14. DEVICE FLANGE TO FLANGE LENGTH: 150mm
15. VACUUM: UHV COMPATIBLE
16. OPERATION PRESSURE: 100-150 PSI
17. COOLING WATER FLOW RATE: 2-4 GAL/MIN
18. WATER TUBE CONNECTOR:
SIZE: 3/8 TUBE O.D., 1/4 P-NPT
MATERIAL: 316 STAINLESS STEEL

NOTES:

1. THIS IS A UHV ASSEMBLY. KEEP THE UHV PARTS CLEAN DURING ASSEMBLY AND WRAP UP FOR PACKING WITH ALUMINUM FOIL.
2. DEVICE SHALL BE LEAK TESTED USING A MASS SPECTROMETER WITH MINIMUM SENSITIVITY FOR HELIUM OF 2 x 10⁻¹⁰ STANDARD CC/SEC PER LEAK METER DIVISION, SUCH AS:
ALCATEL ASM-110TCL
VARIAN NCR 925 OR 938
VEECO MS-9, MS-90 OR MS-18
DuPONT CEC 24-120B
CALIBRATION OF THE LEAK DETECTOR SENSITIVITY SHALL BE PERFORMED JUST PRIOR TO TESTING.
FINAL TEST WILL CONSIST OF SURROUNDING THE CHAMBER (BAGGING) WITH HELIUM. THE CHAMBER WILL BE REJECTED IF A 2% DEFLECTION IN THE MOST SENSITIVE RANGE OF THE LEAK DETECTOR IS SENSED WITHIN 1 MIN.
3. BEFORE ASSEMBLY OF SWAGELOK MALE CONNECTORS, USE CAJON PIPE THREAD SEALANT MS-TFS-50 TO ALLOW CONNECTION TO BE DISASSEMBLED WITHOUT SPECIAL TOOLS.
4. ALL DIMENSIONS WITH [] ARE MILLIMETERS.
5. WATER PRESSURE TEST AT 300 PSI AFTER ASSEMBLING.
6. ALL DIMENSIONS IN BRACKETS, EITHER [] OR (), IN THIS DRAWING AND SUB-TIER DRAWINGS ARE FOR REFERENCE ONLY.

INSTRUCTIONS FOR INSTALLATION OF TUBING

1. INSTALL THE TUBE INTO THE FITTING UNTIL IT IS BOTTOM AGAINST THE SHOULDER OF THE BODY.
2. THE NUT OF SWAGELOK TUBE FITTING SHALL BE TIGHTEN 1-1/4 TURN FOR FULL PULL-UP. THE SWAGELOK GAP GAP INSPECTION GAGE SHALL BE USED TO CHECK FOR SUFFICIENT PULL-UP.

SOURCE

(SWAGELOK)
DEARBORN VALVE & FITTING CO.
1540 N. OLD RAND ROAD
P.O. BOX 847
WAUKONDA, IL. 60084-0847
708-526-6900
FAX: 708-526-1221

REV	DESCRIPTION	BY	CHKD	DATE
3	SS-800-1-4			
2	P4102020101-240004-00			
1	P4102020101-240002-00			

ITEM	QUANTITY	DESCRIPTION	MATERIAL SPEC.	QTY
3		CONNECTOR, MALE TUBE FITTING	SST 316	4
2		M3 COOLING TUBE	SST 316	1
1		M3 CHAMBER WELDMENT		1

REV	DESCRIPTION	DATE
1	ISSUED FOR FABRICATION	06/25/03

DESIGNED BY	CHECKED BY	DATE
J. CHANG	ROBERT D. SHU	06/25/03

DESIGNED BY	CHECKED BY	DATE
J. CHANG	T.M. KUZAY	06/25/03

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ADVANCED PHOTON SOURCE

M3 BM FRONT END
EXIT MASK
ASSEMBLY
FOR BM 2

P4102020101-240000-00

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1	ISSUED FOR FABRICATION	J. CHANG		06/25/03