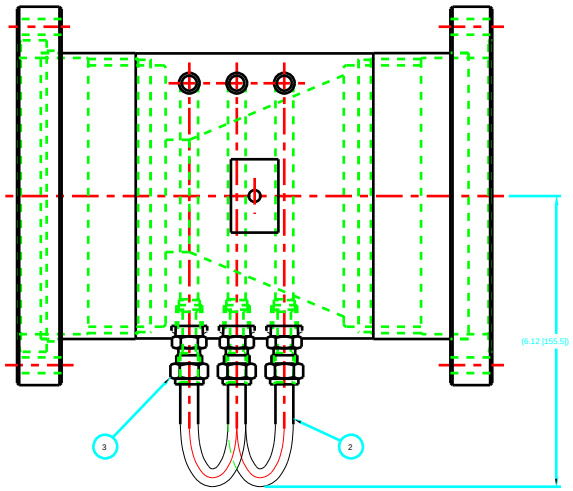
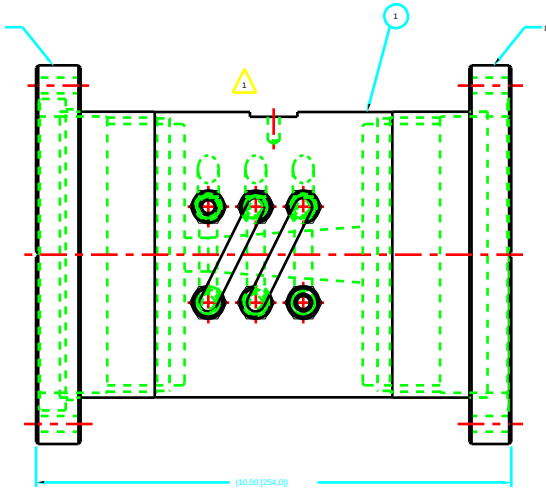
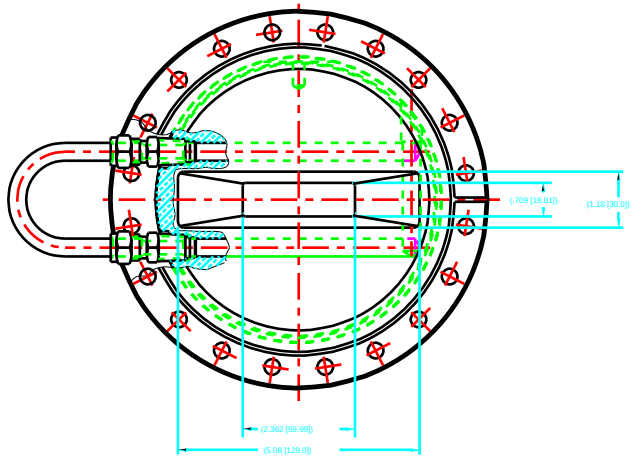
(E	PLOT SCALE: 1=1	DWG. SCALE: 1	







DESIGN SPECIFICATIONS

1. LOCATION: 9.2m FROM APS BM SOURCE CENTER
2. POWER LOAD: APS BM 7GeV, 100-300mA SOURCE
3. INPUT APERTURE SIZE: 129mm (H) x 30mm (V)
4. OUTPUT APERTURE SIZE: 60mm (H) x 18mm (V)
5. MASK GRAZING INCIDENCE ANGLE:
   VERTICAL: 4.2 degree
   HORIZONTAL: 22.7 degree
6. VERTICAL MAXIMUM BEAM ACCEPTANCE: 3.26 mrad
7. VERTICAL MAXIMUM BEAM PASS-THROUGH: 1.95 mrad
8. HORIZONTAL MAXIMUM BEAM ACCEPTANCE: 14.02 mrad
9. HORIZONTAL MAXIMUM BEAM PASS-THROUGH: 6.49 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: 254mm
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
    TYPE: MALE CONNECTOR
    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 936
   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 SILVER COOP THREAD LUBRICANT (FROM SWAGELOK CO.) TO ALLOW CONNECTION TO BE DISASSEMBLED WITHOUT SPECIAL TOOLS.

4. ALL DIMENSIONS WITH [ ] ARE MILLIMETERS.

5. WATER PRESSURE TEST AT 500 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 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
WAUCONDA, IL. 60084-0847
708-526-6900
FAX: 708-526-1221

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
3	SS-600-1-4	CONNECTOR, MALE TUBE FITTING	STAINLESS STEEL	6
2	P4102020101-210001-01	M3 COOLING TUBE	SST 316	2
1	P4102020101-210100-01	M3 CHAMBER WELDMENT		1

PARTS LIST

DYM	CHANGE DESCRIPTION	BY	CHKD	DATE
2	ADD NOTE 6	J.G.	J.C.	2/14/94
1	UPDATE	RAF	J.C.	7/6/93
1	CHANGED NOTE 3	RAF	J.C.	7/6/93
1	ADD INSTRUCTION	RK	J.C.	7/6/93
1	ADD TOOLING BALL HOLE	RK	J.C.	7/6/93

REVISIONS

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
DECIMAL X ± .015, XX ± .010, XXX ± .005
ANGULAR ± .25°
SURFACE ROUGHNESS 125
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5
DO NOT SCALE DRAWING

LOG NUMBER: A16441
THIS DRAWING IS THE PROPERTY OF ARGONNE NATIONAL LABORATORY

DRAWN BY	R. KRAKROA	DATE 3/93	CHIEF DESIGN ENGINEER D. SHU 4/6/93
CHECKED BY	J. CHANG	4/6/93	QA LEADER T.M. KUZAY 4/6/93
DESIGNED BY	J. CHANG	3/93	PROJECT MGR.
RESPONSIBLE ENGINEER	J. CHANG	4/6/93	APPROVED/RELEASED

MATERIAL: SEE ABOVE

TITLE: ADVANCED PHOTON SOURCE
M3 BM FRONT END
FIRST FIXED MASK
ASSEMBLY

SCALE 1:1 | SIZE E | SHEET 1 of 1 | DRAWING NUMBER P4102020101-210000-02