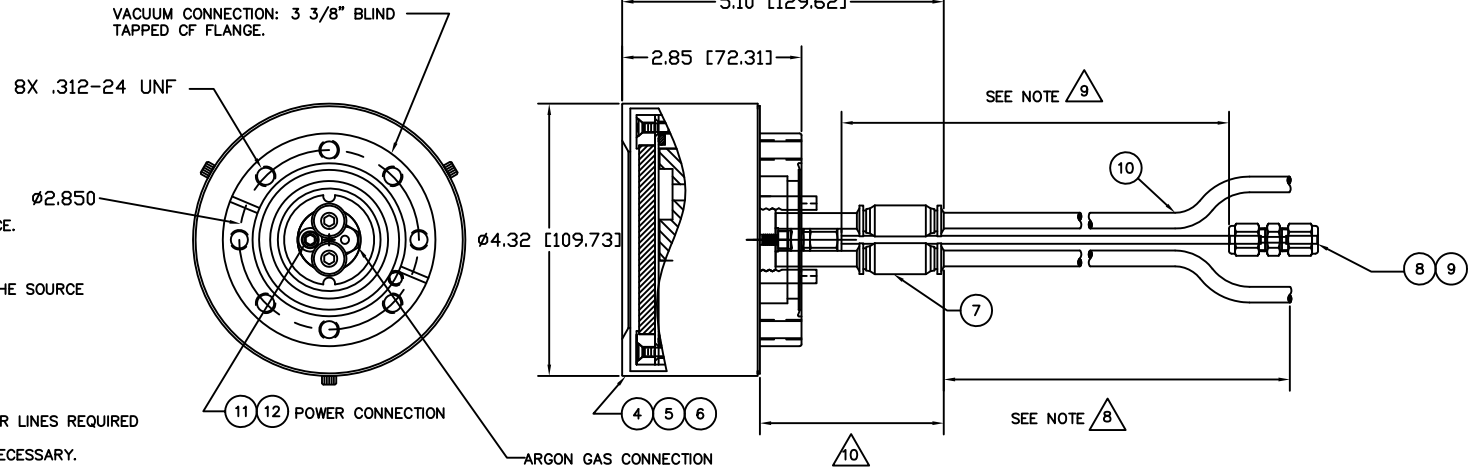


NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DRAWING IAW THE GLOBAL PROFESSIONAL PUBLICATIONS "DRAWING REQUIREMENTS MANUAL", EIGHTH EDITION.
2. INTERPRET DIMENSIONS AND TOLERANCES IAW ANSI Y14.5M - 1982.
3. BREAK SHARP EDGES .002-015.
4. INTERPRET ABBREVIATIONS IAW MIL-STD-12.
5. SEE MATERIALS SCIENCE, INC. DOCUMENT NO. 251011 FOR PROPER INSTALLATION, OPERATION AND USE OF POLARIS SPUTTERING SOURCES.

6. GAS FITTING, SWAGelok (ITEM 8) IS INCLUDED WITH SOURCE. IT IS ALSO AVAILABLE FROM:
HTTP://WWW.SWAGELOK.COM
7. WATER LINE TUBE UNIONS, (ITEM 7) ARE INCLUDED WITH THE SOURCE AND ARE ALSO AVAILABLE FROM:
ALPHA TECHNOLOGIES
320 PREMIER COURT, SUITE 222
FRANKLIN, TN 37067
TEL: (615) 771-6650
APHA PART NUMBER 88040-04
8. USER SUPPLIED - MINIMUM 60" LONG POLYETHYLENE WATER LINES REQUIRED FOR SAFE OPERATION. DO NOT USE METAL WATER LINES TO MEET THIS REQUIREMENT - ELECTRICAL ISOLATION IS NECESSARY.
9. MINIMUM 36"[915MM] LONG TEFLON PFA LINE REQUIRED (36"[915MM] INCLUDED WITH SOURCE) FOR SAFE OPERATION. DO NOT USE METAL GAS LINES TO MEET THIS REQUIREMENT - ELECTRICAL ISOLATION IS NECESSARY.
10. 3"[76.2] MINIMUM STRAIGHT CLEARANCE MUST BE ALLOWED FOR WATER FITTINGS PRIOR TO ANY BENDING OF BELLOWS OR RADIUS IN HARD PLUMBED FEEDTHROUGH ASSEMBLY. DO NOT LET ID OF BELLOWS RUB AGAINST WATER FITTINGS.
11. MASS OF SPUTTERING SOURCE FULLY ASSEMBLED IS 4LBS [1.8KG], DRY.



-4 ASSY
CLAMPED TARGET ASSY SHOWN

QTY	UNIT	DESCRIPTION	MATERIAL SPECIFICATION	ZONE	ITEM NO			
					14			
					13			
1	1	1	00000070-41	SOC HD CAP SCREW, M4-0.7 X 6MM LONG	18-8 CRES	12		
1	1	1	00000516-2	WASHER, FLAT, M4	18-8 CRES	11		
1	1	1	00000074-1	TUBING, 1/4" OD X .170" ID X 60" MINIMUM	POLYETHYLENE	10		
1	1	1	00000038-1	TUBING, 1/8" OD X 1/16" ID X 36" MINIMUM	TEFLON PFA	9		
1	1	1	6	00000316	FITTING, SWAGelok, SS-200-6	316 CRES	8	
2	2	2	7	00000658-2	1/4 INCH OD PUSH-TO-CONNECT TUBE UNION		7	
1				00002085-3	3 INCH INTERNAL CATHODE (CLAMPED TARGET)		6	
	1			00002085-2	3 INCH INT CATHODE (DIRECT WATER COOLED TGT)		5	
		1		00002085-1	3 INCH INTERNAL CATHODE (BONDED TARGET)		4	
				00002673-3	3 INCH INTERNAL CATHODE (CLAMPED TARGET)		3	
				00002673-2	3 INCH INT CATHODE (DIRECT WATER COOLED TGT)		2	
				00002673-1	3 INCH INTERNAL CATHODE (BONDED TARGET)		1	
QTY PER ASSEMBLY	QTY PER ASSEMBLY	QTY PER ASSEMBLY	CAGE CODE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ZONE	ITEM NO

INSTALLATION CONTROL DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	APPROVED: J. MILLER 12/11/18	MATERIALS SCIENCE, INC. Vacuum and Thin Film Technology www.msinc.com
DECIMALS ±.010 FRACTIONS ±.005 HOLE DRILLING ±.005 HOLE REAMING ±.002 HOLE TAPPING ±.005 HOLE REWORK ±.005 HOLE FINISH ±.005 HOLE POLISH ±.005 HOLE GRIND ±.005 HOLE HONING ±.005 HOLE LAPPING ±.005 HOLE POLYMER ±.005 HOLE PLATING ±.005 HOLE TREATMENT ±.005 HOLE WELDING ±.005 HOLE COATING ±.005 HOLE PAINTING ±.005 HOLE ANODIZING ±.005 HOLE CHROME ±.005 HOLE NICKEL ±.005 HOLE CROMIUM ±.005 HOLE ZINC ±.005 HOLE CUPPER ±.005 HOLE SILVER ±.005 HOLE GOLD ±.005 HOLE IRIDIUM ±.005 HOLE RUTHENIUM ±.005 HOLE OSMIUM ±.005 HOLE PLATINUM ±.005 HOLE TITANIUM ±.005 HOLE ZIRCONIUM ±.005 HOLE NIOBIUM ±.005 HOLE TUNGSTEN ±.005 HOLE MOLYBDENUM ±.005 HOLE COBALT ±.005 HOLE NICKEL ±.005 HOLE COPPER ±.005 HOLE BRASS ±.005 HOLE BRONZE ±.005 HOLE ALUMINUM ±.005 HOLE INCONEL ±.005 HOLE TITANIUM ±.005 HOLE STAINLESS STEEL ±.005 HOLE CARBON STEEL ±.005 HOLE LOW ALLOY STEEL ±.005 HOLE HIGH ALLOY STEEL ±.005 HOLE ALUMINUM ±.005 HOLE COPPER ±.005 HOLE BRASS ±.005 HOLE BRONZE ±.005 HOLE INCONEL ±.005 HOLE TITANIUM ±.005 HOLE STAINLESS STEEL ±.005 HOLE CARBON STEEL ±.005 HOLE LOW ALLOY STEEL ±.005 HOLE HIGH ALLOY STEEL ±.005	THIS DRAWING CONTAINS PROPRIETARY INFORMATION AND ANY REPRODUCTION, INCLUDING OR USE OF THIS DRAWING WITHOUT WRITTEN PERMISSION FROM MATERIALS SCIENCE, INC. IS EXPRESSLY PROHIBITED.	
1208	FORM	POLARIS CATHODE, 3 INCH, INSTALLATION CONTROL METRIC
NEXT ASSEMBLY USED ON	APPLICATION	SIZE: D DATE CODE: 00002673 REV: - SCALE: 1/1 IN. SHEET: 1 OF 1

00002673