



METRIC TUBES (in mm) Tol: ±0.25mm

LINE SIZE (PER DIN 11850)	A	B	D	E	C	REFERENCE ONLY		
						OD	ID	WALL
50	64.7	1.870	49	22.65	110	52	49	1.5
65	82.7	1.870	66	22.65	128	70	66	2
80	97.7	1.870	81	22.65	143	85	81	2
100	116.7	1.870	100	22.65	162	104	100	2

INCH TUBES (in inches) Tol: ±.010"

LINE SIZE PER ASTM A270	A	B	D	E	C	REFERENCE ONLY		
						OD	ID	WALL
2"	2.5	1.870	1.87	.84	4.18	2	1.87	.065
2.5"	3	1.870	2.37	.84	4.68	2.5	2.37	.065
3"	3.5	1.870	2.87	.84	5.18	3.0	2.87	.065
4"	4.5	1.870	3.83	.84	6.18	4.0	3.83	.083

NOTES:

1. ALL PARTS BY OTHERS UNLESS OTHER WISE SPECIFIED.
2. DIMENSIONS ARE PER McNAB'S LIGHT PATH PROGRAM.
3. PORTS MUST BE PERPENDICULAR TO RUN AND CONCENTRIC TO OPPOSITE PORT.

2" FERRULE (SANITARY ADAPTOR)  
McNAB P/N 8A-2204-2-MACH  
TYP 4 PLACES, OD = 2.00", ID = 1.87"  
"DIMENSIONS ARE TYPICAL FOR OTHER AXIS"

FABRICATION PROCESS:

1. DETERMINE LINE SIZE, PER CHART. CUT CUBE TO DIMENSION "A". MARK CENTERS ON EACH FACE. ROUND OFF ALL CORNERS AND SHARP EDGES.
2. DRILL/BORE OUT LINE SIZE ID, DIMENSION "D".
3. DRILL/BORE FERRULE ID THRU CUBE ON ONE AXIS, DIMENSION "B".
4. DRILL/BORE FERRULE ID THRU CUBE ON OTHER AXIS, DIMENSION "B".
5. INSERT TOOL TO ENSURE PERPENDICULARITY AND CONCENTRICITY. CUT FERRULE LENGTHS TO ACHIEVE DIMENSIONS E AND C. WELD FERRULES IN PLACE. REPEAT PROCESS FOR OTHER AXIS.
6. WELD LINE SIZE TUBE. LENGTH TO SUIT.
7. GRIND AND SMOOTH ALL WELDS. HYDRO TEST TO SUIT.

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FABRICATION,  
FLOW CELL UNIT

20 NOV 2000 REV. A

SCALE: DWG\MAN\AP-VIE\FIG11 SHEET 1 OF 1