FN-MASS FLOWMETER

FLOWMETER CALCULATION SHEET

1	DATE	2020년 10월 14일		
2	COMPANY	Golden Rules Co.,Ltd.		
3	MODEL	KC-7730OP		
4	OPERATING ELEMENT DATA			
5	FLUID	N2 GAS	MOLE FRACTION	
6	FLUID STATE	Gas State	Nitrogen	1.000000
7	MOLECULAR WEIGHT [g/mol]	28.01348		
8	THROAT DIAMETER at 20˚C [mm]	91.872		
9	PIPE INNER DIAMETER [mm]	158.400		
10	CONNECTION	KS 10K S0 STS304		
11	PIPE MATERIAL	STS304		
12	DEVICE MATERIAL	STS304		
13	STANDARD	D-5.0D Orifice		
14	PRESSURE LOSS COEFFICIENT	3.771337		
15	PRESSURE LOSS [kPa]	13.069197		
16	UPSTREAM CONDITION			
17	PRESSURE [kPa]	400.00		
18	TEMPERATURE [˚C]	25.00		
19	VELOCITY [m/s]	19.872819		
20	PROCESS DATA			
21	MASS FLOW RATE [kg/h]	6378.586112		
22	VOLUME FLOW RATE [m3/h]	1410.069059		
23	NORMAL VOLUME FLOW RATE [Nm3/h]	5101.293078		
24	ENERGY FLOW RATE [MJ/h]	1968.435438		
25	DIFFERENTIAL PRESSURE [Pa]	20000.00		
26	DENSITY [kg/m3]	4.523598		
27	VISCOSITY [μPa-s]	17.844485		
28	SONIC VELOCITY [m/s]	352.529175		
29	REYNOLDS NUMBER(Re) [-]	797337		
30	ISENTROPIC EXPONENT [-]	1.405446		
31	COMPRESSIBILITY FACTOR [-]	0.999244		
32	SPECIFIC HEAT (Op) [Kj/KGk]	1.046253		
33	ENTHALPY [Kj/KG]	308.600590		
34	UNCERTAINTY			

FLOW RATE	MASS FLOW ACCURACY[%]	PRESSURE DROP [Pa]	VELOCITY [m/s]	Re
m X 1.00	0.5	20000.000000	19.872819	797337
m X 0.75	0.5	15000.000000	17.277014	693147
m X 0.56	0.5	11250.000000	15.006894	602032
m X 0.24	0.5	4746.093750	9.802448	393162

NOTE :