FN-MASS FLOWMETER

FLOWMETER CALCULATION SHEET

1	DATE		2020년 11월 18일		
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]	11.100		
9	PIPE INNER DIAMETER	[mm]	22.200		
10	CONNECTION		ANSI 150# S0 STS304		
11	PIPE MATERIAL		STS304		
12	DEVICE MATERIAL		STS304		
13	STANDARD		D-5.0D Orifice		
14	PRESSURE LOSS COEFFICIENT		5.421623		
15	PRESSURE LOSS	[kPa]	27.029134		
16	UPSTREAM CONDITION				
17	PRESSURE	[kPa]	800.00		
18	TEMPERATURE	[˚C]	25.00		
19	VELOCITY	[m/s]	14.0784		
20	PROCESS DATA				
21	MASS FLOW RATE	[kg/h]	177.640033		
22	VOLUME FLOW RATE	[m3/h]	19.621392		
23	NORMAL VOLUME FLOW RATE	[Nm3/h]	142.068141		
24	ENERGY FLOW RATE	[MJ/h]	54.662361		
25	DIFFERENTIAL PRESSURE	[Pa]	37000.00		
26	DENSITY	[kg/m3]	9.053386		
27	VISCOSITY	[μPa-s]	17.900120		
28	SONIC VELOCITY	[m/s]	353.176390		
29	REYNOLDS NUMBER(Re)	[-]	157894		
30	ISENTROPIC EXPONENT	[-]	1.411576		
31	COMPRESSIBILITY FACTOR	[-]	0.998561		
32	SPECIFIC HEAT (Op)	[Kj/KGk]	1.052832		
33	ENTHALPY	[Kj/KG]	307.714204		
34	UNCERTAINTY				

FLOW RATE	MASS FLOW ACCURACY[%]	PRESSURE DROP [Pa]	VELOCITY [m/s]	Re
m X 1.00	0.5	37000.000000	14.078400	157894
m X 0.75	0.5	27750.000000	12.235349	137210
m X 0.56	0.5	20812.500000	10.625559	119144
m X 0.24	0.5	8780.273438	6.940322	77792

NOTE :