





LABORATORY/OFFICE:  
54043 County Rd. 37  
Nunn, Colo. 80648  
Phone: 970-897-2711  
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## COLORADO ENGINEERING EXPERIMENT STATION INC.

...the primary source for flow measurement solutions...



IOWA HIGH FLOW FACILITY  
2365 240th St.  
Garner, IA 50438  
Phone: 641-923-3664  
FAX: 641-923-3693

### Calibration of a Subsonic Orifice

Model:

Serial Number:

For: Order:

Data File: Job: Date: 00 January 1900

Inlet Diameter: 12 inches Throat Diameter: 5.998 inches

Test gas: AIR Standard density= 0.074896 lbm/ft<sup>3</sup>

at standard conditions of 529.67 °R, and 14.696 Psia

Diff: Differential pressure in std. inches of water @ 68 °F

Density: Flowing Density at meter INLET, pounds mass per cubic foot

Cd: Coefficient of discharge

ReyNo: Meter diameter Reynolds number

Temp: EXIT temperature, degrees Rankine

Press: Meter INLET static pressure in psia

LBMS: Mass flowrate in pounds per second

Y: AGA 3 Expansion Factor

Pt.	Diff	Density	Cd	ReyNo	Temp	Press	LBMS	Y
1	229.78	1.051	0.6085	3606378	517.02	200.28	3.459E+01	0.9874
2	229.50	1.051	0.6085	3608318	516.25	199.98	3.456E+01	0.9874
3	183.07	1.057	0.6086	3254286	513.49	200.02	3.105E+01	0.9900
4	183.35	1.058	0.6081	3257945	513.04	200.04	3.106E+01	0.9900
5	165.80	1.059	0.6083	3109529	511.64	199.62	2.958E+01	0.9909
6	144.19	1.067	0.6079	2920959	509.77	200.40	2.771E+01	0.9921
7	143.90	1.066	0.6082	2920482	509.32	200.11	2.769E+01	0.9921
8	116.84	1.069	0.6079	2641247	508.23	200.09	2.500E+01	0.9936
9	103.22	1.070	0.6079	2488994	507.51	200.05	2.353E+01	0.9943
10	103.27	1.070	0.6078	2490195	507.32	200.05	2.354E+01	0.9943
11	93.67	1.072	0.6077	2376254	506.72	200.05	2.244E+01	0.9949
12	79.49	1.073	0.6078	2194091	506.29	200.17	2.071E+01	0.9956
13	79.48	1.073	0.6077	2193617	506.14	200.05	2.070E+01	0.9956
14	64.94	1.074	0.6075	1985660	505.80	200.07	1.873E+01	0.9964
15	51.35	1.074	0.6077	1768154	505.72	200.13	1.667E+01	0.9972
16	51.34	1.074	0.6077	1768204	505.67	200.11	1.667E+01	0.9972
17	40.71	1.074	0.6076	1575250	505.61	200.04	1.485E+01	0.9978
18	33.90	1.075	0.6077	1438542	505.70	200.19	1.356E+01	0.9981
19	33.88	1.074	0.6077	1437617	505.68	200.04	1.356E+01	0.9981
20	30.08	1.074	0.6072	1353498	505.80	200.16	1.276E+01	0.9984
21	30.04	1.074	0.6074	1353065	505.79	200.10	1.276E+01	0.9984



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### STATEMENT OF UNCERTAINTIES

Calibration of a Subsonic Orifice

Model:

Serial Number:

For: Order:

Data File: Job: Date: 00 January 1900

Diff: Uncertainty in Differential Pressure at a 95% confidence(%)

Density: Uncertainty in Density at a 95% confidence(%)

Cd: -

ReyNo: Uncertainty in Reynolds Number at a 95% confidence(%)

Temp: Uncertainty in Temperature at a 95% confidence(%)

Press: Uncertainty in Pressure at a 95% confidence(%)

LBMS: Uncertainty in Mass Flowrate at a 95% confidence(%)

Y: -

Pt.	Diff	Density	Cd	ReyNo	Temp	Press	LBMS	Y
1	0.12627	0.134	-	2.043	0.034	0.082	0.417	-
2	0.1263	0.134	-	2.043	0.034	0.082	0.417	-
3	0.13266	0.134	-	2.042	0.034	0.082	0.413	-
4	0.13261	0.134	-	2.042	0.034	0.082	0.413	-
5	0.13593	0.134	-	2.042	0.034	0.082	0.411	-
6	0.14114	0.134	-	2.041	0.034	0.082	0.408	-
7	0.14122	0.134	-	2.041	0.034	0.082	0.408	-
8	0.1505	0.134	-	2.040	0.034	0.082	0.404	-
9	0.15701	0.134	-	2.040	0.034	0.082	0.402	-
10	0.15699	0.134	-	2.040	0.034	0.082	0.402	-
11	0.16272	0.134	-	2.040	0.034	0.082	0.400	-
12	0.17371	0.134	-	2.039	0.034	0.082	0.397	-
13	0.17372	0.134	-	2.039	0.034	0.082	0.397	-
14	0.19	0.134	-	2.038	0.034	0.082	0.393	-
15	0.21356	0.134	-	2.038	0.034	0.082	0.389	-
16	0.21357	0.134	-	2.038	0.034	0.082	0.389	-
17	0.24299	0.134	-	2.037	0.034	0.082	0.385	-
18	0.27154	0.134	-	2.036	0.034	0.082	0.383	-
19	0.27166	0.134	-	2.036	0.034	0.082	0.383	-
20	0.29329	0.134	-	2.036	0.034	0.082	0.381	-
21	0.29349	0.134	-	2.036	0.034	0.082	0.381	-