

How to Measure Outlet Airflow

Unico now offers the Davis Instruments' TurboMeter. This device is ideal for measuring the airflow in the Unico System.

This device makes the Unico System the EASIEST system on the market to check airflow and airflow balance. It is so accurate that you can determine if your duct system is leaky just by comparing the total airflow from all the outlets to the airflow indicated by the motor amperage chart that comes with the blower (or the programmed airflow, if using an EC motor).

Procedure

1. Slide the ON switch to the KNOTS position. This is roughly equal to 100s of feet-per-minute.
2. Place the meter against the outlet with the fan centered over the outlet.
3. Record the KNOTS reading.
4. Calculate airflow using table on page 2.
5. Use the Unico Service Report Form (Bulletin 30-100) to record your readings and to determine the system total airflow.



TURBO METER™

Example:

2-inch round outlet with KNOTS reading of 16.0 has 32 CFM (or 15.1 l/s).

For plenum slotted outlets, use a straight slotted outlet in 'reverse' as a type R2 (2 inch round) outlet.

Step 1 . Place straight slotted outlet over plenum opening.



Step 2. Measure air velocity with TurboMeter.



TurboMeter KNOTS-to-Airflow Tables

[Type] Knots	Slotted Outlet				Knots	Round Outlet			
	[SL] Straight		[SL90] 90 degree			[R2] 2-in. (50 mm)		[R2.5] 2.5-in. (63 mm)	
	CFM knots x 6	L/s knots x 2.82	CFM (knots x 4)+4	L/s (knots x 1.89)+1.9		CFM knots x 2	L/s knots x 0.94	CFM knots x 2.37	L/s knots x 1.11
3.2	19.2	9.1	16.8	7.9	10.0	20	9.4	23.7	11.2
3.4	20.4	9.6	17.6	8.3	10.5	21	9.9	24.9	11.7
3.6	21.6	10.2	18.4	8.7	11.0	22	10.4	26.1	12.3
3.8	22.8	10.8	19.2	9.1	11.5	23	10.9	27.3	12.9
4.0	24.0	11.3	20.0	9.4	12.0	24	11.3	28.4	13.4
4.2	25.2	11.9	20.8	9.8	12.5	25	11.8	29.6	14.0
4.4	26.4	12.5	21.6	10.2	13.0	26	12.3	30.8	14.5
4.6	27.6	13.0	22.4	10.6	13.5	27	12.7	32.0	15.1
4.8	28.8	13.6	23.2	10.9	14.0	28	13.2	33.2	15.7
5.0	30.0	14.2	24.0	11.3	14.5	29	13.7	34.4	16.2
5.2	31.2	14.7	24.8	11.7	15.0	30	14.2	35.6	16.8
5.4	32.4	15.3	25.6	12.1	15.5	31	14.6	36.7	17.3
5.6	33.6	15.9	26.4	12.5	16.0	32	15.1	37.9	17.9
5.8	34.8	16.4	27.2	12.8	16.5	33	15.6	39.1	18.5
6.0	<i>36.0</i>	<i>17.0</i>	28.0	13.2	17.0	34	16.0	40.3	19.0
6.2	<i>37.2</i>	<i>17.6</i>	28.8	13.6	17.5	35	16.5	41.5	19.6
6.4	<i>38.4</i>	<i>18.1</i>	29.6	14.0	18.0	36	17.0	42.7	20.1
6.6	<i>39.6</i>	<i>18.7</i>	30.4	14.3	18.5	37	17.5	43.8	20.7
6.8	<i>40.8</i>	<i>19.3</i>	31.2	14.7	19.0	38	17.9	45.0	21.2
7.0	<i>42.0</i>	<i>19.8</i>	32.0	15.1	19.5	39	18.4	46.2	21.8
7.2	<i>43.2</i>	<i>20.4</i>	32.8	15.5	20.0	40	18.9	47.4	22.4
7.4	<i>44.4</i>	<i>21.0</i>	33.6	15.9	20.5	<i>41</i>	<i>19.3</i>	48.6	22.9
7.6	<i>45.6</i>	<i>21.5</i>	34.4	16.2	21.0	<i>42</i>	<i>19.8</i>	49.8	23.5
7.8	<i>46.8</i>	<i>22.1</i>	35.2	16.6	21.5	<i>43</i>	<i>20.3</i>	51.0	24.0
8.0	<i>48.0</i>	<i>22.7</i>	<i>36.0</i>	<i>17.0</i>	22.0	<i>44</i>	<i>20.8</i>	52.1	24.6
8.2	<i>49.2</i>	<i>23.2</i>	<i>36.8</i>	<i>17.4</i>	22.5	<i>45</i>	<i>21.2</i>	<i>53.3</i>	<i>25.2</i>
8.4	<i>50.4</i>	<i>23.8</i>	<i>37.6</i>	<i>17.7</i>	23.0	<i>46</i>	<i>21.7</i>	<i>54.5</i>	<i>25.7</i>



Values shown in *Red-Italics* are above the recommended value and may have unacceptable sound levels.