

Residential air leakage measurement system comparison

Use this guide to compare features of the two top US manufacturers.

Retrotec Model Q46 Blower Door



Minneapolis Model 3 Blower Door



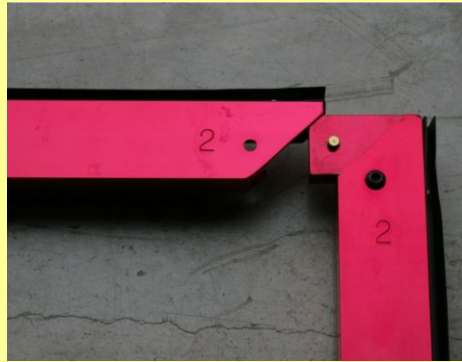
The Companies

	Retrotec Inc	The Energy Conservatory
Company founded :	1980	1981
CEO:	Colin Genge	Gary Nelson
Manufactured in:	Everson, WA, USA	Minneapolis, MN, USA
Primary applications:	<ul style="list-style-type: none"> Residential audits and inspections Residential marketing Commercial Industrial Fire-suppressant containment Smoke containment 	<ul style="list-style-type: none"> Residential audits and inspections
Large notable customers:	<ul style="list-style-type: none"> Industrial such as Siemens & Tyco Community Action Programs 	<ul style="list-style-type: none"> Community Action Programs Low Income weatherization agencies in most States.
Warranty	Two years	Two years

The Door Panels

Both have:

- * extruded aluminum frame
- * nylon cloth
- * Velcro tabs
- * rubber gaskets



- Numbered frame pieces
- Red anodized

- Black anodized

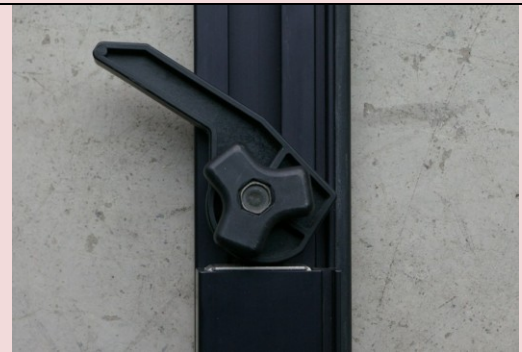
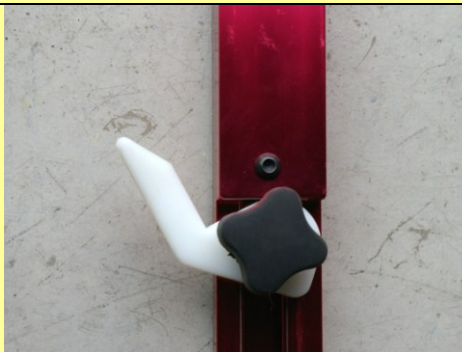
Frame Width:
w/ Extensions: 29.5 – 41.5 in (75 – 105.4 cm)
37 – 48 in (76 – 122 cm)

28 in. to 40 in. (61 cm to 101 cm)

Doorway Heights:
w/ Extensions: 51.5 – 95 in (130 – 240 cm)
60 – 105 in (150 – 267 cm)

52 – 96 in (131 – 242 cm)



Cam lever and knobs:



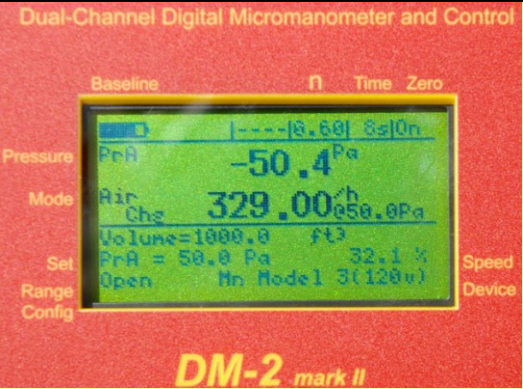
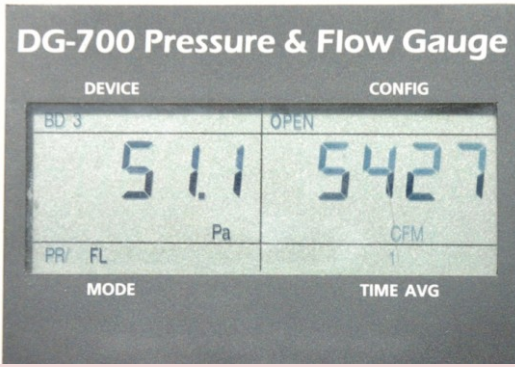
- Molded plastic cam lever
- Rubber knob

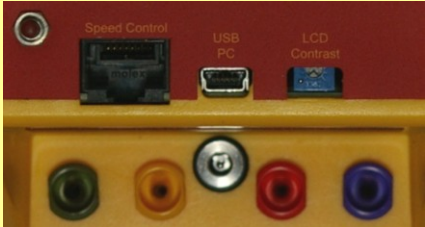






- Molded plastic cam lever and knob

The Digital Gauges




	Retrotec DM-2 digital gauge	Minneapolis DG-700 digital gauge
<p>The Retrotec DM-2 design has been around since 2006. Its firmware can be easily updated to take on new improvements.</p> <p>The Minneapolis DG-700 gauge has been around since 2000 and is widely used. Its screen display is fixed.</p>		
Gauge to distance:	20 feet standard. Unlimited using Ethernet cable or umbilical extensions.	1 foot
Accuracy:	1% of pressure reading or 0.15 Pa, whichever is greater.	1% of pressure reading or 0.15 Pa, whichever is greater.
Result modes:	<p>Channel A:</p> <ul style="list-style-type: none"> Pressure in Pascals, inches H₂O, lb/ft² <p>Channel B:</p> <ul style="list-style-type: none"> Pressure in Pascals, inches H₂O, lb/ft² Flow in cfm, l/s, m³/s, m³/h Flow @ (any pressure) calculates flow at ANY desired pressure configured in Setup menu. Leakage Area – EqLA (Canadian) EFLA (US) in cm², in², ft² Leakage Area @ (any pressure) calculates EqLA at ANY desired pressure configured in Setup menu 	<p>Channel A:</p> <ul style="list-style-type: none"> Pressure in Pascals, inches H₂O <p>Channel B:</p> <ul style="list-style-type: none"> Pressure in Pascals, inches H₂O Flow in cfm, l/s, m³/h Flow @ (25 and 50 Pa) calculates flow at two pressures. Leakage Area – EqLA (Canadian) in cm², in² Leakage Area @ (25 and 50 Pa) calculates EqLA at two pressures.







Courtesy of the Energy Conservatory, Minneapolis, MN

<p>Result modes (continued):</p>	<ul style="list-style-type: none"> • Air-changes per hour according to volume entered on keypad • Permeability, flow per unit area in CFM/ft², liters/s/m², CFM/100 ft², m³/h/m² according to area entered on keypad • EqLA and EfLA per unit area in, in²/100ft², cm²/m² according to area entered on keypad • Velocity in m/s, km/h, ft/s, ft/min, mph • Velocity-Flow in cfm, l/s, m³/s, m³/h according to cross-sectional area entered on keypad. 	<ul style="list-style-type: none"> • Velocity in m/s, ft/s
<p>Compatible Devices:</p>	<ul style="list-style-type: none"> • Retrotec: DU-100 & DU-200 Duc-Tester fans • Retrotec: 600, 700, 800, 900, 2000, 3000 & 3000 SR fans • Minneapolis: Duct-Blaster • Minneapolis: Model 3(120V), Model 3(240V) and Model 4(240V) fans • Infiltec: Model E3 • Pitot tube 	<ul style="list-style-type: none"> • Minneapolis: Duct-Blaster • Minneapolis: Model 3(120V), Model 3(240V) and Model 4(240V) fans • Minneapolis: Tru-Flow Grid • Minneapolis: Fan Flow Meter • Pitot tube
<p>Remembers settings:</p>	<p>Yes, goes back to last settings.</p>	<p>No, goes to default settings</p>
<p>Display:</p>		
<p>Batteries:</p>	<ul style="list-style-type: none"> • 4-NiMH AA rechargeable batteries, supplied • AC power adapter included • Batteries rated for two years and can be recharged weekly or from the fan top. 	<ul style="list-style-type: none"> • 6 - AA alkaline batteries, supplied • AC power adapter optional • Batteries rates for over 100 hours continuous use

Time averaging:	Off, 1, 2, 4, 8, 10, 20, 60, 120 seconds, rolling average	1, 5, 10 seconds, and Long-Term, block average
Auto zero:	Every 8 seconds	Every 10 seconds
Backlight:	On with key press or continuous on	Manual on
Auto shut down:	Adjustable from menu	Two hours
Connections:	<ul style="list-style-type: none"> • Color coded pressure ports • Mini USB to computer • Reset switch • AC Power 	<ul style="list-style-type: none"> • Brass connections • Serial and mini USB port to computer • Fan Control port 
Speed control:	<ul style="list-style-type: none"> • Manual with knob  <ul style="list-style-type: none"> • Control by computer • Set to % • TV remote style jog keys 	<ul style="list-style-type: none"> • Manual with knob  <ul style="list-style-type: none"> • Control by computer
Cruise control:	<ul style="list-style-type: none"> • Set to 0 or any pressure • Set to zero control, automatic 	<ul style="list-style-type: none"> • Set to 0, 25, 50 or 75 • set to zero control, one direction
Extrapolation pressure:	<ul style="list-style-type: none"> • Adjustable to any pressure for any result in set up menu • To any Set Pressure • Adjustable slope, $n=0.5$ to 1 	<ul style="list-style-type: none"> • To 25 and 50 Pa • Fixed Slope, $n=0.65$
Laptop stand:	 <ul style="list-style-type: none"> • Included case can be used as laptop stand. 	 <ul style="list-style-type: none"> • Optional laptop stand

The Fans

	Model 2200	Model 3
Fan shell:		
Flow at 50Hz, Europe:	<ul style="list-style-type: none"> 4800 CFM at 50Pa 	<ul style="list-style-type: none"> 4600 CFM at 50Pa
Flow at 60Hz, USA	<ul style="list-style-type: none"> 5600 CFM at 50Pa <p>Actual flows can vary</p>	<ul style="list-style-type: none"> 5300 CFM at 50Pa <p>Actual flows can vary</p>
Weight:	<ul style="list-style-type: none"> 34 lb with 11 flow ranges 	<ul style="list-style-type: none"> 33 lb with 3 flow ranges
Fan blades:	<ul style="list-style-type: none"> 8 	<ul style="list-style-type: none"> 6
GE Motor:	<ul style="list-style-type: none"> 3/4hp, 1625 RPM @60Hz 	<ul style="list-style-type: none"> 3/4hp, 1625 RPM @60Hz
Motor mount:	<ul style="list-style-type: none"> 8 bolts 	<ul style="list-style-type: none"> 4 bolts
Flow ranges:	<ul style="list-style-type: none"> 11 flow ranges, included <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> 3 flow ranges included 3 additional ranges optional <div style="text-align: center;">  </div>

Fan cross-section:		
	Double layer, foam filled	Single layer
Fan top:	 <p data-bbox="418 772 956 852">Status lights confirms power and DM-2 connection.</p>	 <p data-bbox="979 772 1502 852">Reversing switch.</p>
Flow connections:	Color coded to match tubes	Brass
Fan control:	Power (120 or 240V) using computer style power plug. Ethernet cable supplies speed signal to on-board speed controller.	Variable power (120 or 240V) using computer style power plug from remote speed controller attached to gauge.
Gauge to fan distance:	Unlimited. Use Ethernet style connections or optional umbilical extensions.	Limited by (120 or 240V) extension cord from gauge to fan.
Speed control design:	 <p data-bbox="418 1276 956 1375">Regulated Triac circuit for steady speed control</p>	 <p data-bbox="979 1318 1502 1375">Triac circuit for speed control.</p>