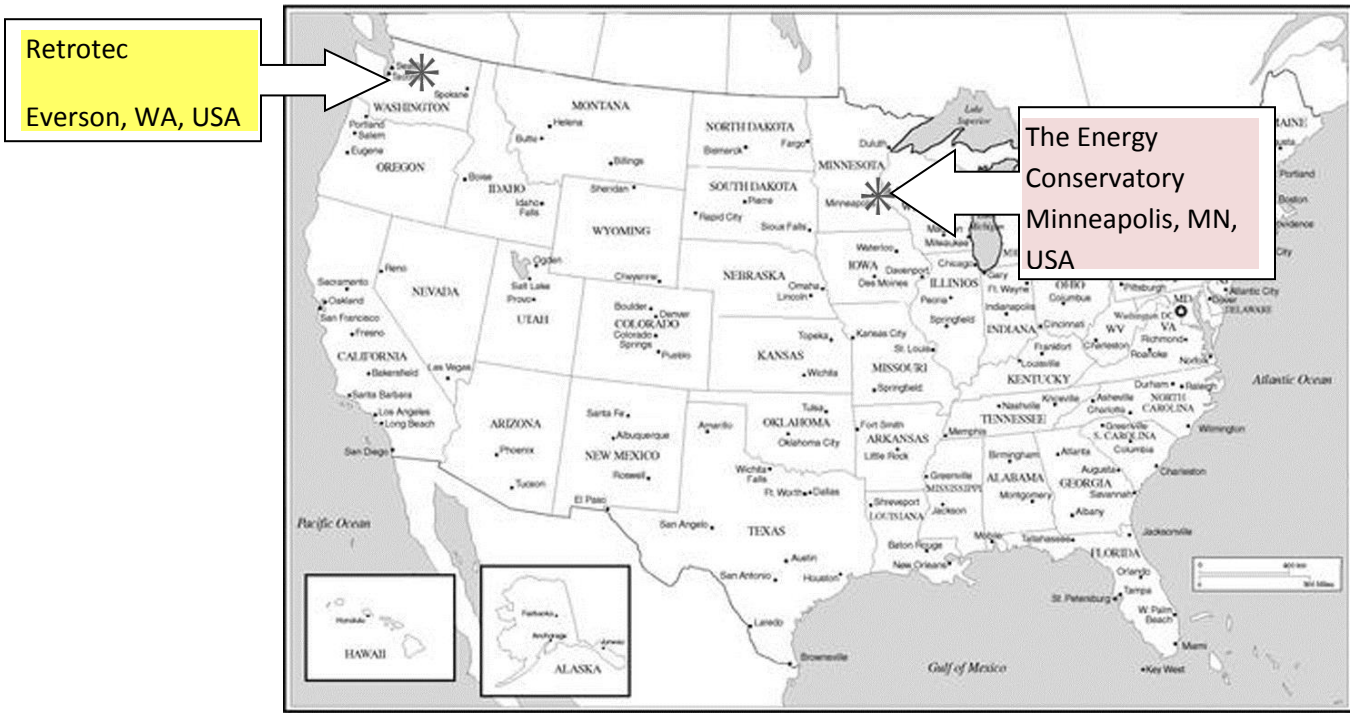
Residential air leakage measurement system comparison:
Retrotec Blower Door & Minneapolis Blower Door

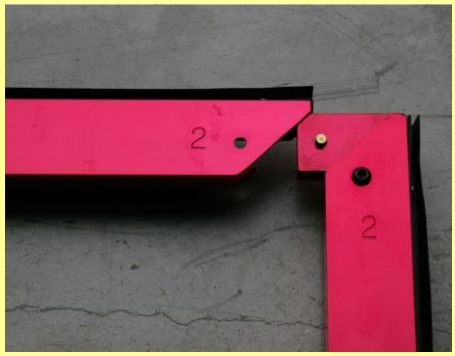
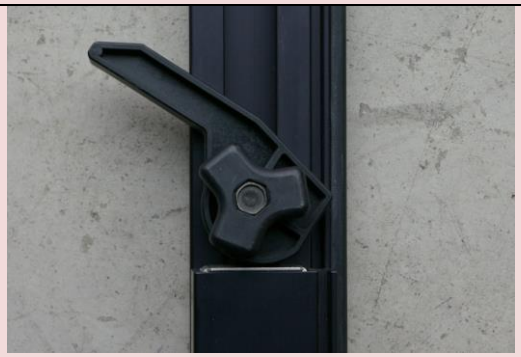
Use this guide to compare features of the two top US manufacturers.

Retrotec Model 1000 Blower Door

Minneapolis Model 3 Blower Door

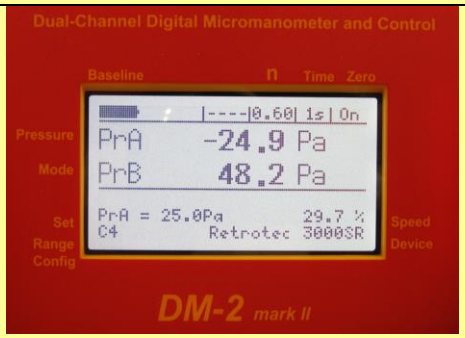
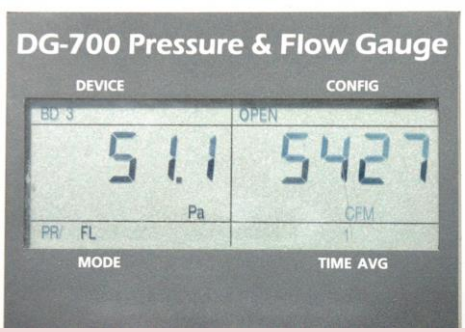
The Companies		
	Retrotec Inc	The Energy Conservatory
Company founded:	1980	1981
CEO:	Colin Genge	Gary Nelson
Manufactured in:	Everson, WA, USA	Minneapolis, MN, USA
US employees	About 60	About 30
Primary applications:	• Residential audits and inspections • Residential marketing • Commercial • Industrial • Fire-suppressant containment • Smoke containment	• Residential audits and inspections
Large notable customers:	• Industrial such as Siemens & Tyco • Community Action Programs	• Community Action Programs • Low Income weatherization agencies in most States.
Warranty	• Two years on system • 10 years on shell	• Two years on system • 5 years on shell



The Door Panels		
Both have: * extruded aluminum frame * nylon cloth * Velcro tabs * rubber gaskets	  • Numbered frame pieces • Red anodized	  • Black anodized
Doorway Widths: Large frame:	29.5 – 43 in (75 – 109 cm) 32 – 50 in (81 – 127 cm)	28 in. to 40 in. (61 cm to 101 cm)
Doorway Heights: Large frame:	53 – 97 in (135 – 246 cm) 60 – 109 in (152 – 278 cm)	52 – 96 in (131 – 242 cm)
Cam lever and knobs:	 • Molded plastic cam lever and rubber covered knob	 • Molded plastic cam lever and knob

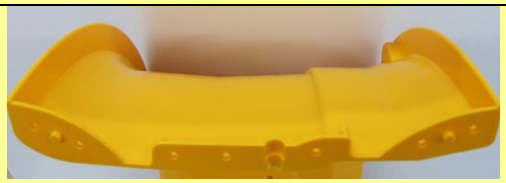
The Digital Gauges

	Retrotec DM-2 digital gauge	Minneapolis DG-700 digital gauge
The Retrotec DM-2A design has been around since 2006 with a built in automatic controller. Its firmware can be easily updated over the Internet to take on new improvements like the larger display shown. The Minneapolis DG-700 gauge has been around since 2000 and is widely used. Its display size and content is fixed. A built in automatic controller was added in 2010.	 Speed control built into fan top. TV clicker style control in gauge will adjust fan speed by Jogging up or down, setting speed or setting pressure. Courtesy of the Retrotec Inc. Everson, WA, USA	 Speed control knob in separate box. Gauge will adjust fan speed by setting pressure. Courtesy of the Energy Conservatory, Minneapolis, MN, USA
Gauge to fan distance:	6 feet standard. Unlimited using Ethernet cable or optional umbilical extensions.	1 foot from gauge to control. Control to fan limited by (120 or 240V) power cord.
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:	
Channel A:	• Pressure in: Pa, in.wc., PSF	• Pressure in: Pa, in.wc.
Channel B: Flow in:	• Pressure in: Pa, in.wc., PSF • Flow in: cfm, l/s, m^3/s, m^3/h • Flow @ (any pressure) Calculates flow at ANY desired pressure configured in Setup menu or from the Set Pressure	• Pressure in: Pa, in.wc. • Flow in: cfm, l/s, m^3/h • Flow at 25 and 50 Pa Calculates flow at two pressures.
Channel B: Leakage Area:	• EqLA (Canadian), EfLA (US) in: cm^2, in^2, ft^2 • Leakage Area @ (any pressure) calculates EqLA at ANY desired pressure configured in Setup Menu	• Leakage Area – EqLA (Canadian) in cm^2, in^2 • Leakage Area @ (25 and 50 Pa) calculates EqLA at two pressures.

Channel B: Air-changes per hour Permeability, normalized flow. Normalized Leakage Area Velocity	• Calculated according to volume entered on keypad • Flow per unit area in CFM/ft^2, liters/s/m^2, CFM/100 ft^2, m^3/h/m^2 according to area entered on keypad • EqLA and EfLA per unit area in, in^2/100ft^2, cm^2/m^2 according to area entered on keypad • m/s, km/h, ft/s, ft/min, mph • Velocity-Flow in cfm, l/s, m^3/s, m^3/h according to cross-sectional area entered on keypad.	• Not available • Not available • Not available • m/s, ft/s • Not available
Flow Devices that can also be calculated by the gauge:	• Retrotec: DU-100 & DU-200 Duc-Tester fans • Retrotec: 600, 700, 800, 900, 2000, 3000 & 3000 SR fans • Minneapolis: Duct-Blaster, Model 3(120V), Model 3(240V) and Model 4(240V) fans, Tru-Flow Grid, Fan Flow Meter • Infiltec: Model E3 • Pitot tube	• Not available • Not available • Minneapolis: Duct-Blaster, Model 3(120V), Model 3(240V) and Model 4(240V) fans, Tru-Flow Grid, Fan Flow Meter • Not available • Pitot tube
Remembers settings?:	Yes, goes back to last settings.	No, goes to default settings
Display:		
Batteries:	• 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.	• 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:	yes	yes
Auto shut down:	Adjustable from Menu	Two hours

Connections:	• Color coded tapered connections • Mini USB to computer • Fan control by Ethernet style cable. • Reset switch • AC Power 	• Brass connections • Serial and mini USB port to computer • Fan Control port 
Speed control from gauge:	• Set to any pressure from -1200 to 0 to +1200 Pa • Set to % • TV remote style jog keys 	• Set to a pressure of 0, 25, 50 or 75 Pa
Cruise control:	• Set to 0 or any pressure • Set to zero control, automatic	• Set to 0, 25, 50 or 75 • set to zero control, one direction
Extrapolation pressure:	• Adjustable to any pressure for any result in set up menu • To any Set Pressure • Adjustable slope, "*n*"=0.5 to 1	• To 25 and 50 Pa • Fixed Slope, "*n*"=0.65
Laptop stand:	 • Optional case can be used as laptop table.	 • Optional laptop stand

The Fans		
	Model 1000	Model 3
Fan shell:		
Flow at 50Hz:	• 5600 CFM in free air • 5100 CFM at 50Pa • 4800 CFM at 75Pa	• 5300 CFM in free air • 4350 CFM at 50Pa • 4000 CFM at 75Pa
Flow at 60Hz, USA Actual flows may vary	• 6700 CFM in free air • 6100 CFM at 50Pa • 5800 CFM at 75 Pa	• 6300 CFM in free air • 5350 CFM at 50Pa • 5000 CFM at 75 Pa
Weight:	• 34 lb with Ring A&B • 35 lb with 7 flow ranges	• 33 lb with Ring A&B
Dimensions:	• Fan Height: 25 in (66 cm) • Fan Inlet Diameter: 22 in (56 cm) • Fan Depth: 10 in (24 cm)	• Fan Height: 24 in (61 cm) • Fan Inlet Diameter: 20 in (50 cm) • Fan Depth: 10.25 in (26 cm)
Fan blades:	• 8	• 6
GE Motor:	• 3/4hp, 1625 RPM @60Hz	• 3/4hp, 1625 RPM @60Hz
Input power:	• 110 V 50Hz, 120V 60 Hz, 240 V 50 Hz	• 110 V 50Hz, 120V 60 Hz, 240 V 50 Hz
Maximum current:	• 9.4 amps at 120 V 60Hz	• 10.5 amps at 120 V 60Hz

Flow ranges:	• 7 flow ranges, included 	• 3 flow ranges included • 3 additional ranges optional 
Fan cross-section:		
	Flexible homogenous 2 piece injection molding held together with 7 rivets on flange.	Fiber reinforced 2 piece injection molding held together with 4 rivets on flange.
Fan top:	 On board speed control allows speed to be controlled using a knob on the fan top or use the 6 ft umbilical to connect to the digital gauge. An optional remote will control the fan up to 100 ft away. Gauge connection status light. Power connection status light. Run up to 24 fans together with daisy chain Ethernet connectors.	 External speed control allows speed to be controlled using a knob on the control box up to 6 ft away or a computer. Reversing switch.
Flow connections:	Tapered fan pressure fitting, color coded to match tubes.	Barbed fan pressure fitting, 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.

Speed control design:	  Regulated Triac circuit for steady speed control in fan top. Remote optional will connect to any length of Ethernet cable to control fan from a distance. 	 Triac circuit for speed control on power cord. Manual speed control attached to power cord. 
Computer control:	Automatic, semi-automatic or manual control using a computer and Retrotec FanTestic software.	Automatic control using a computer and EC Tectite software.