

IR (INTEGRATED ROOM SOLUTION)



CHARACTERISTICS AND PERFORMANCE

Valve Connection	Slip fit w/ band clamps, dual plates, or sheet metal screws
Mounting Orientation	Universal, any orientation or axis
Commissioned Accuracy	±5 % (Pressure independent)
Input Power	24 VAC ±5 %, 50/60 Hz 106 to 116: 30 VA, 212 to 216: 60 VA
Speed of Response	High speed: ≤ 1 Second Standard speed: 30 seconds
Designed Max APD	0.25 inWC

ENVIRONMENTAL LIMITATIONS

Operating Temperature	-4 °F to 175 °F (-20 °C to 79 °C) 5 to 95 % RH non-condensing
Storage Temperature	-40 °F to 175 °F (-40 °C to 79 °C) 5 to 95 % RH non-condensing

VALVE CONSTRUCTION

Size	Type	Description	Construction			
			Non-Corrosive		Corrosive	
			Valve Body	Damper & Shaft	Valve Body	Damper & Shaft
106 - 112	Single Valve	Single Valve 6", 8", 10", 12"	E-Coated Galvanized Steel	Stainless Steel	Stainless Steel	Stainless Steel
114 - 116	Single Valve	Single Valve 14" & 16"	Aluminum	Stainless Steel	Stainless Steel	Stainless Steel
212 - 216	Dual valve	Dual Valve 2-12", 2-14", 2-16"	Aluminum	Stainless Steel	Stainless Steel	Stainless Steel

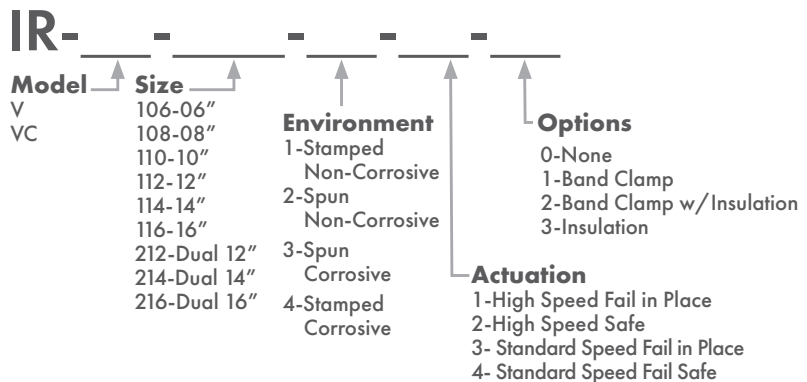
VALVE ACTUATION

Size	Type	Description	Actuation Table					
			High Speed ≤ 1 Second			Standard Speed		
			Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
106 - 112	Single Valve	Single Valve 6", 8", 10", 12"	Fail In Place	Fail Open	Fail Safe	Fail In Place	Fail Open	Fail Safe
114 - 216	Single Valve	Single Valve 14"& 16"	Fail In Place	Fail Open	Fail Safe	Fail In Place	Fail Open	Fail Safe
212 - 216	Dual valve	Dual Valve 2-12", 2-14", 2-16"	Fail In Place	Fail Open	Fail Safe	Fail In Place	Fail Open	Fail Safe

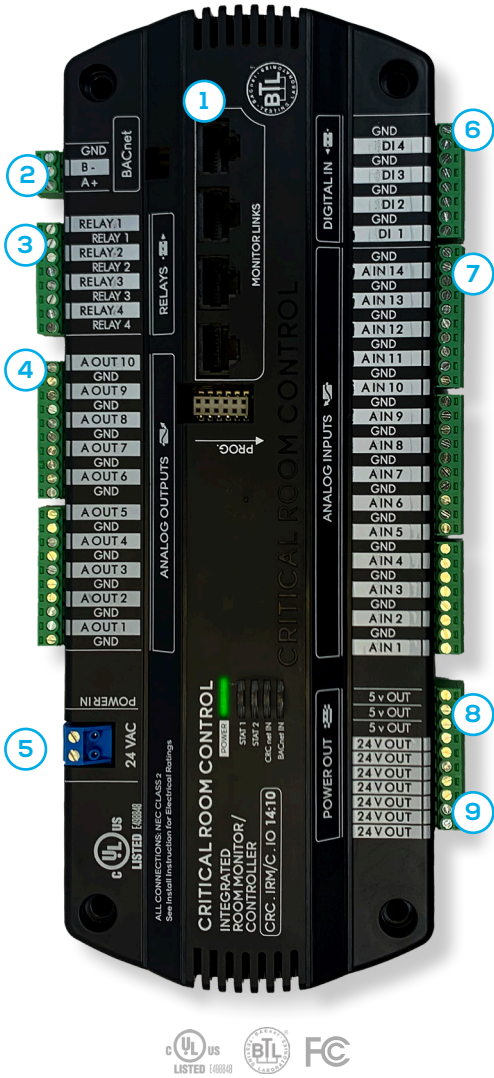
VALVE MODEL INFORMATION

Unit Size	K Factor	Flow Range (CFM)	Flow Range (LPS)
106	450	0-600	0-283
108	775	0-1050	0-495
110	1250	0-1700	0-802
112	2600	0-2600	0-1228
114	2275	0-3200	0-1510
116	2967	0-4200	0-1982
212	3377	0-4700	0-2218
214	4597	0-6400	0-3020
216	6000	0-8400	0-3964

NOMENCLATURE



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SPECIFICATIONS

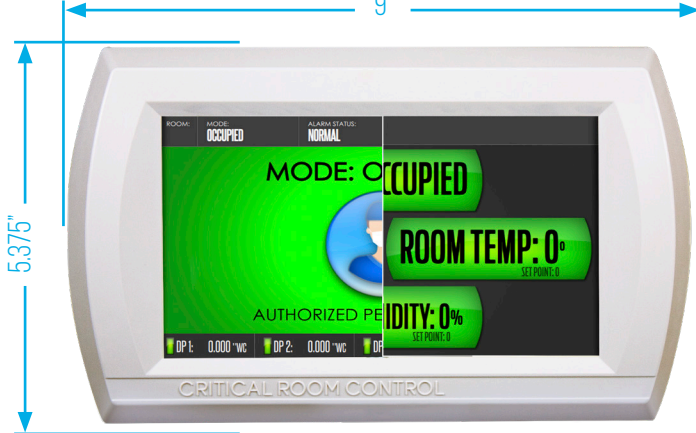
Dimensions	10.25 x 4 x 1.25 in
Input Power	24 VAC ± 10 %, 50/60 Hz, maximum 30 VA, Class 2
Onboard Power	5 @ 24 VDC (200 mA total max.) 3 @ 5 VDC (100 mA total max.)
Operating Temperature	32 to 158 °F (0 to 70 °C)
Storage Temperature	-40 to 158 °F (-40 to 70 °C)
Operating Humidity	10 to 70 % RH, non-condensing
Storage Humidity	10 to 70 % RH, non-condensing
Communication Protocol	BACnet® MS/TP (BTL - listed/tested)
Connectors	14 – 26 AWG wire
Listing	UL 916, C-UL, BTL
Manufactured Under	ISO 13485-2003

COMPONENTS

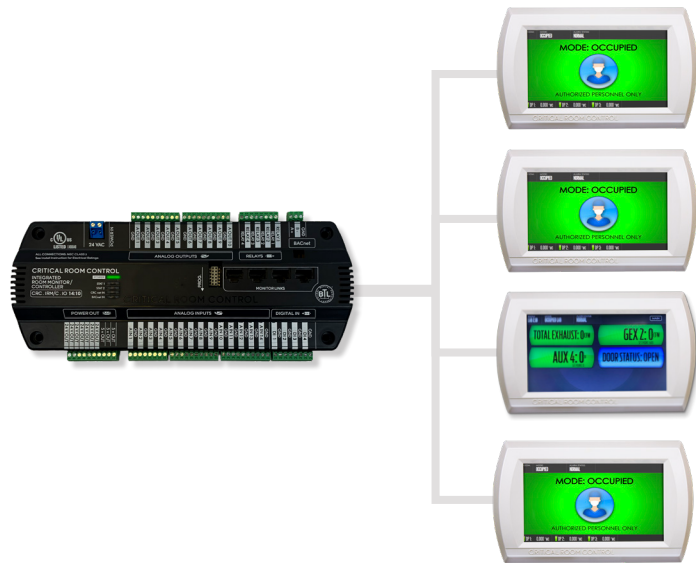
- 1 4 Display ports
- 2 BACnet® MS/TP
- 3 4 Relays (normally closed, 2 A @ 30 VDC)
- 4 10 Analog outputs (configurable 0 to 10 VDC)
- 5 24 VAC power in
- 6 4 Digital inputs (normally closed)
- 7 14 Analog inputs (configurable 0 to 10 VDC)
- 8 5 VDC power to sensors
- 9 24 VDC power to sensors

IR (INTEGRATED ROOM SOLUTION)

Performance



⚠ The displayed screen features a split view that can be configured as either a Pressure Monitor or Multiview.



⚠ Integrated Room supports up to four (4) screens, as illustrated.

SPECIFICATIONS

Dimensions	9 x 5.375 x 1.5 in.
Input Power	Supplied by I/O board via Cat6 cable
Cable Length	Up to 200 ft shielded Cat6 cable per display Up to 500 ft shielded Cat6 total for all connected displays
Operating Temperature	50 to 95 °F (10 to 35 °C)
Operating Humidity	0 to 95 % RH non-condensing
Resolution	WVGA RGB 480 x 800 px
Display Type	Resistive touch

The IRC Display is an intuitive user interface designed for initial setup, configuration, commissioning, and balancing of the IR system, while continuously monitoring critical room parameters and providing optional alarms.

Key Features:

- **Safety:** Clear, unambiguous indications with optional alarms to ensure critical environmental factors are maintained.
- **Display:** Full-color, intuitive touchscreen interface for ease of use.
- **Commissioning:** Built-in commissioning tools to stream line project startup and balancing.
- **I/O Diagnostics:** Visual indicators for real-time monitoring of IRC analog inputs, outputs, relays, and contacts for accurate troubleshooting.
- **Password Protection:** Multiple access levels for enhanced security.
- **Modes:** Supports up to five fully configurable operating modes.
- **Alarm Indicators:** Configurable audible and visual alarms for critical parameters.
- **Setpoint Adjustment:** Optional local adjustment of set points.
- **Room Status Display:** A dedicated screen provides clear visualization of room pressure status and usage.
- **Expandable Displays:** Supports up to three additional displays for broader monitoring capabilities.

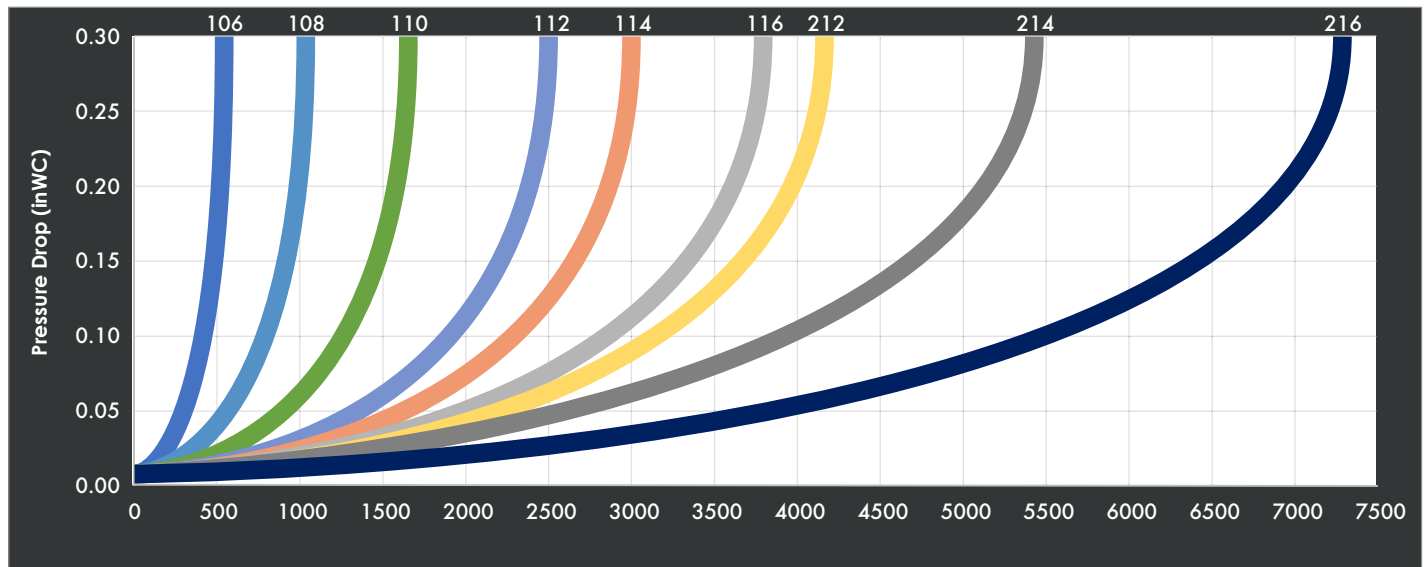
IR (INTEGRATED ROOM SOLUTION)

Performance

IRV PERFORMANCE DATA

Valve Size	Eng. Units	±20%	≤15%	≤7%	Optimal Performance Design Range										Max CFM	Valve Size
					≤5%	≤3%	≤2%	≤1%	≤1%	≤1%	≤1%	≤1%	≤1%	≤1%		
106	CFM	0-30	30	40	60	100	120	220	300	380	440	480	540	600	106	
108	CFM	0-60	60	80	100	160	200	360	540	680	800	900	980	1050	108	
110	CFM	0-80	80	140	170	300	400	640	900	1140	1320	1440	1600	1700	110	
112	CFM	0-160	160	200	240	380	560	920	1420	1720	2000	2280	2500	2900	112	
114	CFM	0-180	180	240	310	540	800	1200	1720	2100	2420	2700	2960	3100	114	
116	CFM	0-210	210	315	420	700	1000	1580	2210	2730	3125	3520	3850	4200	116	
212	CFM	0-230	230	350	460	660	1100	1760	2520	3040	3520	3800	4100	4600	212	
214	CFM	0-360	360	480	600	1080	1600	2400	3240	4200	4840	5200	5400	6000	214	
216	CFM	0-420	420	630	780	1400	2000	3160	4420	5460	6250	6800	7200	7800	216	
ΔPS	inWC	≤0.005	≤0.005	≤0.005	≤0.005	0.01	0.02	0.05	0.10	0.15	0.20	0.25	0.30	inWC	ΔPS	

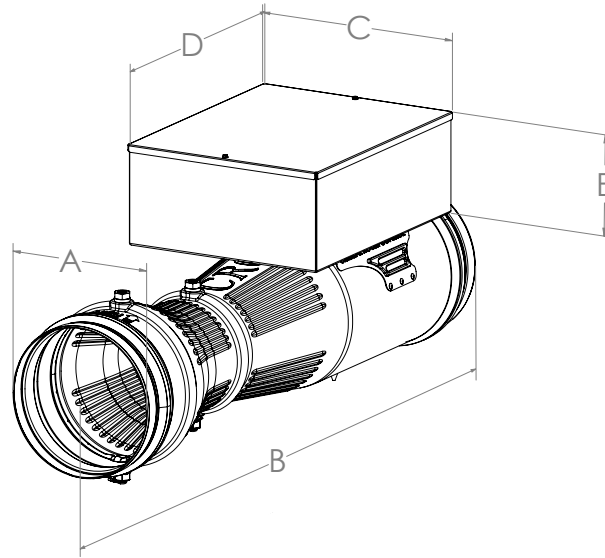
IRV PERFORMANCE CHART



⚠ To achieve optimal energy-efficient performance, choose a valve size that maintains a maximum pressure drop of 0.25" at the design airflow rate.

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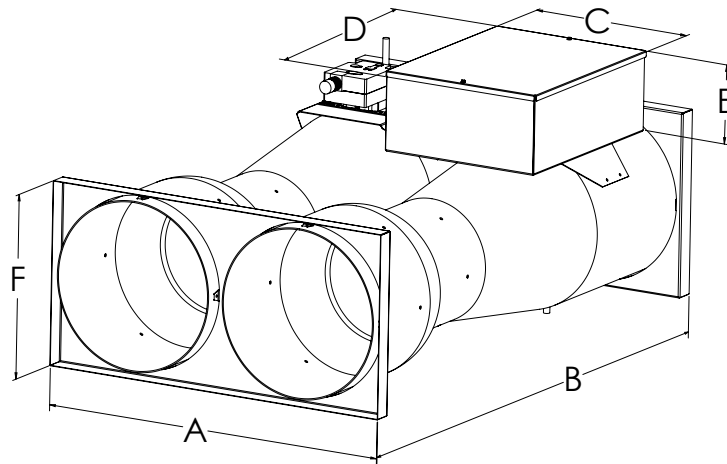
Dimensional Data



SINGLE IRV

Valve Size	A	B	C	D	E
	in [mm]	in [mm]	in [mm]	in [mm]	in [mm]
106	5.9 [149]	28.5 [724]*	13.6 [345]	17.1 [435]	6.5 [165]
108	7.9 [200]	34.8 [884]*	13.6 [345]	17.1 [435]	6.5 [165]
110	9.9 [251]	39.3 [998]*	13.6 [345]	17.1 [435]	6.5 [165]
112	11.9 [302]	40.5 [1029]*	13.6 [345]	17.1 [435]	6.5 [165]
114	13.9 [352]	48.0 [1220]	13.6 [345]	17.1 [435]	6.5 [165]
116	15.9 [381]	48.0 [1220]	13.6 [345]	17.1 [435]	6.5 [165]

* Length measurement is taken from gasket to gasket to account for the slip-fit connection.



DUAL IRV

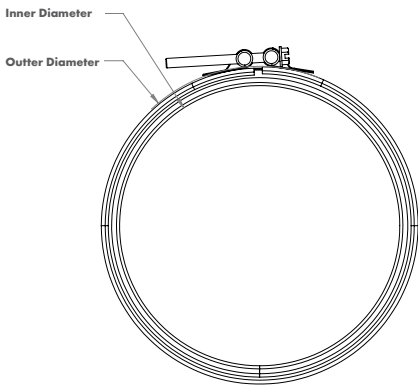
Valve Size	A	B	C	D	E	E
	in [mm]	in [mm]	in [mm]	in [mm]	in [mm]	in [mm]
212	26.0 [660]	48.0 [1220]	13.6 [345]	17.1 [435]	6.5 [165]	13.0 [165]
214	30.0 [762]	48.0 [1220]	13.6 [345]	17.1 [435]	6.5 [165]	15.0 [165]
216	34.0 [864]	48.0 [1220]	13.6 [345]	17.1 [435]	6.5 [165]	17.0 [165]

Optional Accessories

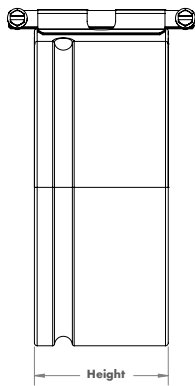
BAND CLAMPS



Top View



Side View



CHARACTERISTICS

Material of Construction	Galvanized Steel
Gasket	UL94 Neoprene
Design	Dual-Bolt
Torque	Not to exceed 40 in-lbs
Band Clamps provided in sets of (2)	

SIZE CHART

Part #	Inner Diameter	Outer Diameter	Height
BC-106	[136.65] 5.38	[159.93] 6.3	[89.33] 3.52
BC-108	[187.45] 7.38	[211.93] 8.34	[89.5] 3.52
BC-110	[238.25] 9.38	[262.73] 10.34	[89.5] 3.52
BC-112	[289.05] 11.38	[313.53] 12.34	[89.5] 3.52
BC-114	[339.85] 13.38	[364.33] 14.34	[89.5] 3.52
BC-116	[390.65] 15.38	[415.13] 16.34	[89.5] 3.52

INSULATION



CHARACTERISTICS

Material of Construction	Closed-cell elastomeric thermal insulation
Gasket	0.25" (6.4 mm)
Design	R-1.0

ENVIRONMENTAL LIMITATIONS

Upper Temperature Limit	220 °F (104 °C)
Lower Temperature Limit	-297 °F (-183 °C)
Flame Spread and Smoke Developed Index	25/50 rated

⚠ Valve insulation is factory installed

Key

- [BRACKETS] = MILLIMETERS (mm)
- NO BRACKETS = INCHES (in)