

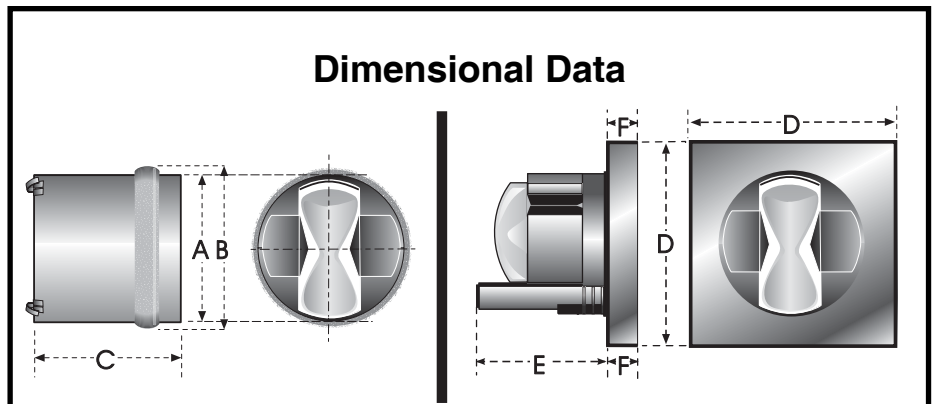
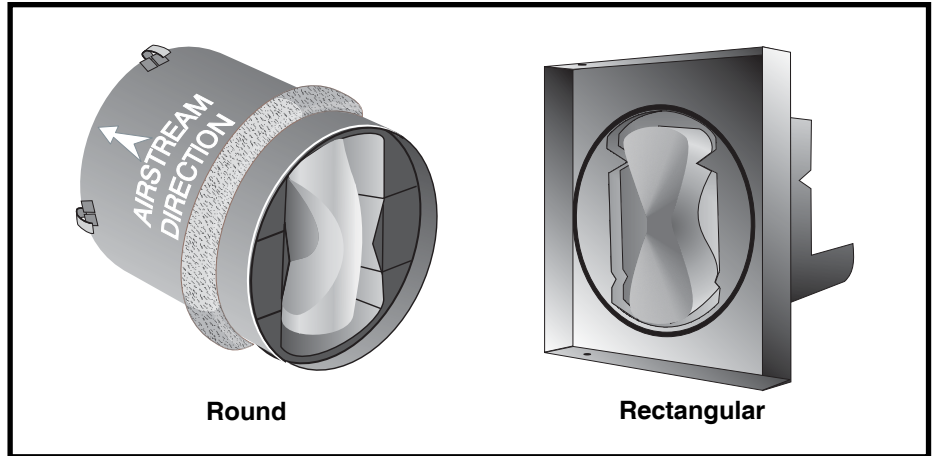
General: The model CAR Constant Airflow Regulator is a modulating orifice that automatically regulates airflows in duct systems to constant levels. The passive control element responds to duct pressure, and requires no electric or pneumatic sensors or controls.

The CAR compensates for changes in duct pressure caused by thermal stack effect, building pressure, dust clogging of filters, etc. The CAR also provides a low cost solution to balancing forced air systems for heating, air conditioning and ventilation, eliminating the need for on-site balancing. The CAR will regulate airflow in supply, return or exhaust duct systems.

The active control element of the CAR is a flexible bulb, which inflates and deflates in response to the static pressure difference across the control. This operation regulates the free-area opening through the control, resulting in maintenance of velocity and specific airflow set points. Each CAR is designed and produced for control of air in temperatures ranging from -25° to 140° F (-32° to 60° C.)

Construction (Round): The round CAR regulating element is housed in a heavy gauge rolled galvanized steel sleeve. Each sleeve is seam welded to prevent leakage. The assembly is sized to fit inside standard rigid round ducting, as well as fittings such as take-offs, tees, etc. A brush or flex-type ring seal gasket around the circumference ensures a tight, no-leak fit. Spring action metal clips on the housing grip the interior of the duct or fitting to secure the control firmly in place with minimal installation effort.

Construction (Rectangular): The CAR regulating element is available in a rectangular duct mounting plate. The assembly is sized to fit inside standard square or rectangular ducting, as well as register boots, return grille collars, etc. Each mounting plate is designed to specifically accommodate the control element, and prevent unwanted air leakage.



Duct	CAR	A	B	C	D*	E	F
Round							
4"	4	3.9	4.1	3.1	-	-	-
5"	5	4.8	5.0	5.4	-	-	-
6"	6	5.7	6.3	5.4	-	-	-
8"	8	7.7	8.1	6.1	-	-	-
10"	10	9.7	10.0	7.5	-	-	-
Rectangular							
6"x6"	4	-	-	-	5.9	2.3	1.0
6"x6"	5	-	-	-	5.9	3.7	1.0
8"x8"	5	-	-	-	7.9	3.7	1.0
8"x8"	6	-	-	-	7.9	4.0	1.0
10"x10"	5	-	-	-	9.9	3.7	1.0
10"x10"	6	-	-	-	9.9	4.0	1.0
10"x106"	8	-	-	-	9.9	4.8	1.0
12"x12"	8	-	-	-	11.9	4.8	1.0
12"x12"	10	-	-	-	11.9	6.1	1.0
14"x14"	10	-	-	-	13.9	6.1	1.0

*Standard sizes shown.
Mounting plates are also available to accommodate any rectangular duct size.

All sizes shown are in inches.

Performance: The CAR airflow regulators control airflow accurately to within 10% of rated flow (*15% for units 50 cfm or less*), throughout the target operating pressure range of 0.2 to 0.8 in. w.g. (*50 to 200 Pa*). Each CAR is factory tested and calibrated to the rated set point before shipping. On-site field adjustment of airflow set points can be made for supply air applications (*contact factory*). Each diameter of CAR regulator is available in multiple factory calibrated set points (*see performance curves*).

Maintenance: The CAR needs no maintenance when used in normal conditions. There is no risk of dust deposit or obstruction because the CAR has no airways subject to clogging. If the intended application includes air heavily loaded with grease or dust, a fitting with an access panel or door, such as that used for flame dampers, should be provided.

Warranty: Guaranteed for 5 years, from date of shipment, against all defects in material or workmanship, provided that the material has been installed and utilized under normal conditions. This warranty is limited to the repair or replacement of the material.

The CAR is a patented ALDES product. We reserve the right to change specifications without notice.

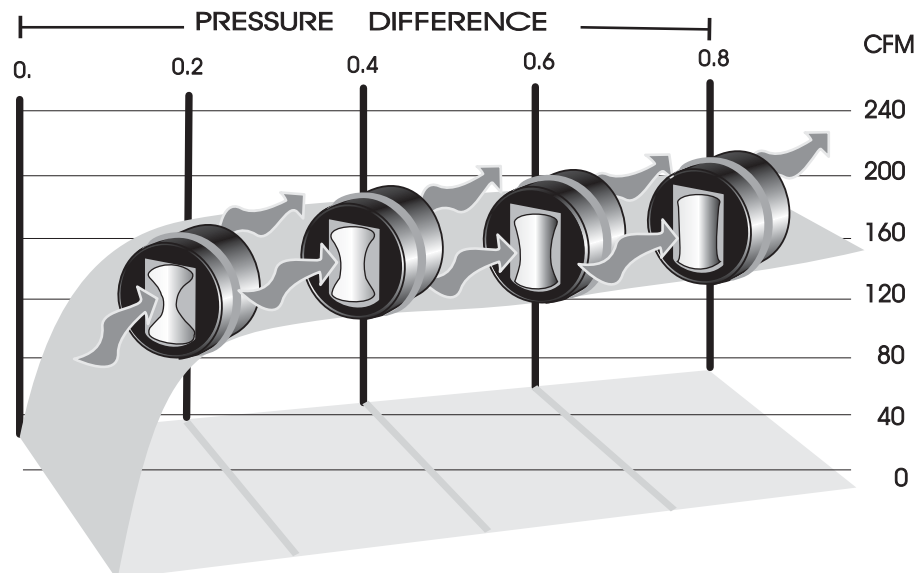
Typical Applications

- **Supply and exhaust air of offices.**
- **Balancing exhaust and supply airflows in high-rise building duct risers.**
- **Bathroom exhaust in nursing homes, hotels, motels, dormitories, apartment buildings, offices, etc.**
- **Clean room air supply balancing for ceiling filter modules. Maintains constant airflow even as filter resistance increases.**
- **Regulation of makeup air.**
- **Balancing supply airflow from packaged roof top A/C units.**
- **Balancing supply and exhaust of heat recovery ventilation systems**
- **Regulating outdoor air injection from central supply fan into individual room fan coil units, or heat pumps.**
- **Balancing airflows on series fan powered terminal unit systems.**
- **Supply air to sleeping quarters in military facilities, submarines, etc.**

Typical Specification

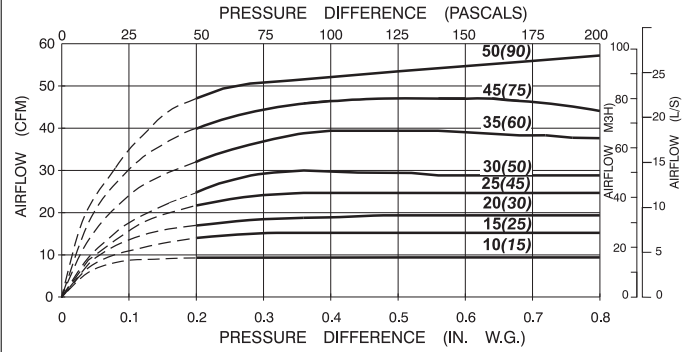
Model CAR Constant Airflow Regulators by **American ALDES Ventilation Corporation**, Sarasota, Florida, shall solely operate on duct pressure and require no external power supply. Each regulator shall be preset and factory calibrated requiring no field adjustment to the airflows as indicated on the schedule, and shall be rated for use in air temperatures ranging from -25° to 140° F (*-32° to 60° C.*) Constant airflow regulators shall be capable of maintaining constant airflow within +/- 10% of scheduled flow rates (*15% for units 50 cfm or less*), within the operating range of 0.2 to 0.8 in. w.g. differential pressure, or 0.6 to 2.4 in. w.g. on high-pressure models. Sound power levels shall not exceed those for each size and cfm rating as scheduled. Regulators shall be provided as an assembly consisting of a flame resistant plastic body with self-inflating silicon element housed within a .75mm galvanized steel sleeve or flanged plate for mounting in either round or rectangular duct. Each round sleeve must be fitted with a brush gasket to assure perimeter air tightness with the interior surface of the duct. All Constant Airflow Regulators will require no maintenance and must be warranted for a period of no less than five years. Constant Airflow Regulators shall be installed in tight ducting systems in accordance with all applicable codes and manufacturer's instructions.

How the CAR Works: Constant airflow is achieved by the inflating action of CAR's bulb. At minimum static air pressure, the bulb is deflated and has the shape similar to an hourglass. As the static pressure increases across the bulb, it inflates, thereby reducing the free area around the bulb. At the same time, the higher static pressure increases the air velocity resulting in **CONSTANT AIRFLOW**. This occurs regardless of pressure differences in the range of 0.2 to 0.8 in. w. g. (*50 to 200 Pa*). The air velocity in the duct is in the range of 60 to 700 ft/min. (*0.3 to 3.5 m/s*).



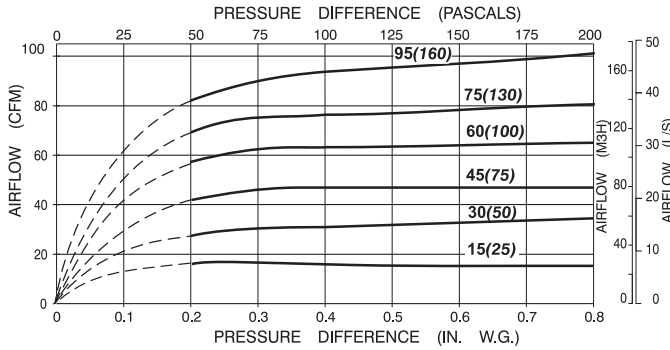
CAR Airflow Performance Data: Performance charts reflect airflow measurements taken at 68° (20° C) at 1 atmosphere pressure. CAR's designed for system pressures above 0.8 in. w.g. are also available. Consult the factory for information.

4" DIA. (100mm)



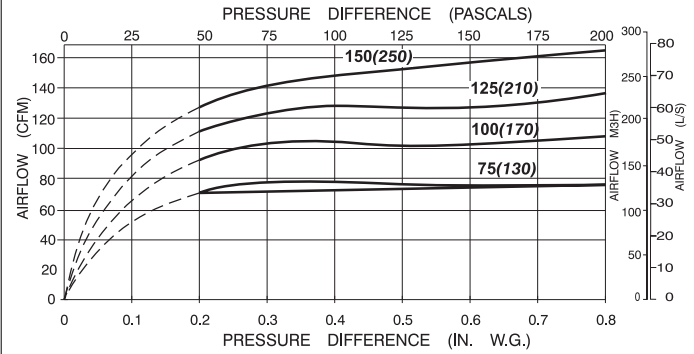
P/N #16 330	10 cfm (15 m3/h)	#16 337	30 cfm (50 m3/h)
#16 336	15 cfm (25 m3/h)	#16 333	35 cfm (60 m3/h)
#16 331	20 cfm (30 m3/h)	#16 334	45 cfm (75 m3/h)
#16 332	25 cfm (45 m3/h)	#16 335	50 cfm (90 m3/h)

5" DIA. (125mm)



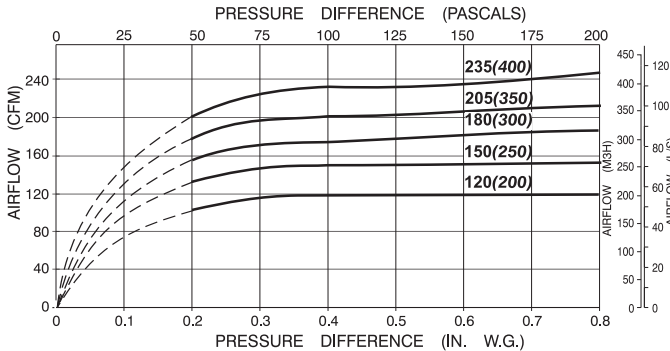
P/N #16 340	15 cfm (25 m3/h)	#16 343	60 cfm (100 m3/h)
#16 341	30 cfm (50 m3/h)	#16 344	75 cfm (130 m3/h)
#16 342	45 cfm (75 m3/h)	#16 345	95 cfm (160 m3/h)

6" DIA. (150mm)



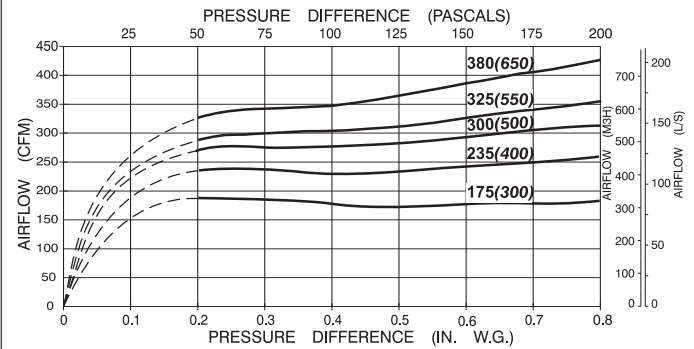
P/N #16 370	75 cfm (130 m3/h)	#16 372	125 cfm (210 m3/h)
#16 371	100 cfm (170 m3/h)	#16 373	150 cfm (250 m3/h)

8" DIA. (200mm)



P/N #16 360	120 cfm (200 m3/h)	#16 363	205 cfm (350 m3/h)
#16 361	150 cfm (250 m3/h)	#16 364	235 cfm (400 m3/h)
#16 362	180 cfm (300 m3/h)		

10" DIA. (250mm)



P/N #16 366	175 cfm (300 m3/h)	#16 368	325 cfm (550 m3/h)
#16 365	235 cfm (400 m3/h)	#16 369	380 cfm (650 m3/h)
#16 367	300 cfm (500 m3/h)		

