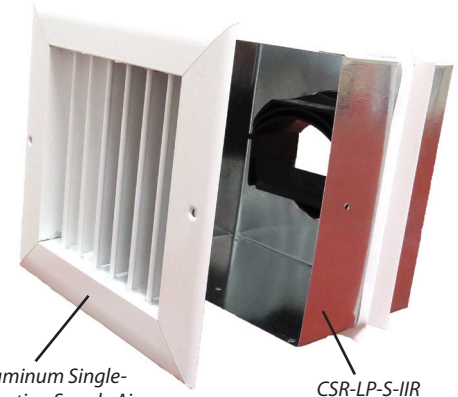
AIRFLOW & ZONE CONTROLS

CSR-LP-S-IIR

Low-Pressure Constant Supply Register for Square or Rectangular Ducting in Retrofit Applications

PRODUCT SPECIFICATIONS & TECHNICAL DATA



Aluminum Single-Deflection Supply Air Grille

CSR-LP-S-IIR Sleeve Assembly with Retrofit Gasket

GENERAL

Model CSR-LP-S-IIR Constant Supply Register incorporates a modulating orifice that automatically regulates airflows in duct systems to constant levels. The passive control element in the CSR-LP-S-IIR responds to duct pressure and requires no electric or pneumatic sensors or controls.

The CSR-LP-S-IIR compensates for changes in duct pressure caused by thermal stack effect, building pressure, dust-clogged filters, etc. The CSR-LP-S-IIR also eliminates the need for on-site balancing in supply air duct systems.

The active control element of the CSR-LP-S-IIR is a unique aerofoil (CAR-II-LP). Using Bernoulli's Principle, the aero-wing damper lifts in response to increasing static pressure. This operation regulates the free-area opening through the control, resulting in maintenance of velocity and specific airflow set points. Each CAR-II-LP is designed and produced for control of air in temperatures ranging from -25° to 140°F (-32° to 60°C.)

CONSTRUCTION

The CSR-LP-S-IIR single-deflection grille face is constructed of heavy-gauge extruded aluminum to prevent rusting in moist environments such as bathrooms, showers, etc. The CAR-II-LP regulating element is integral to the grille, and it is secured in an air-tight mounting plate with retroft gasket. The entire assembly is designed for installation in square or rectangular ducting or register boots.

PERFORMANCE

The CAR-II-LP controls 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-II-LP is factory tested and calibrated to the rated set point before shipping. Each CAR-II-LP is available in multiple factory-calibrated set points (see performance curves).

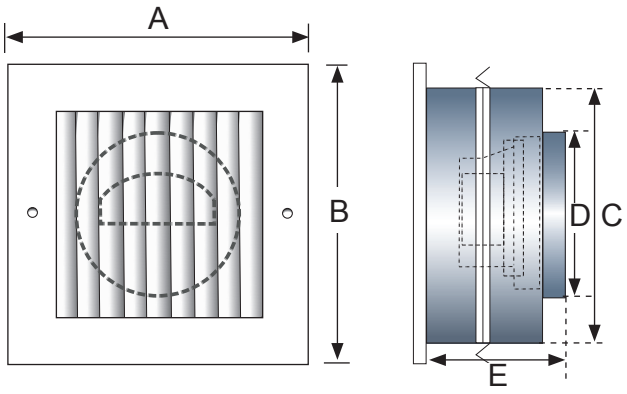
MAINTENANCE

The CAR-II-LP needs no maintenance when used in normal conditions. There is no risk of dust deposit or obstruction because the CAR-II-LP 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 five 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.

CSR-S-IIR Dimensions



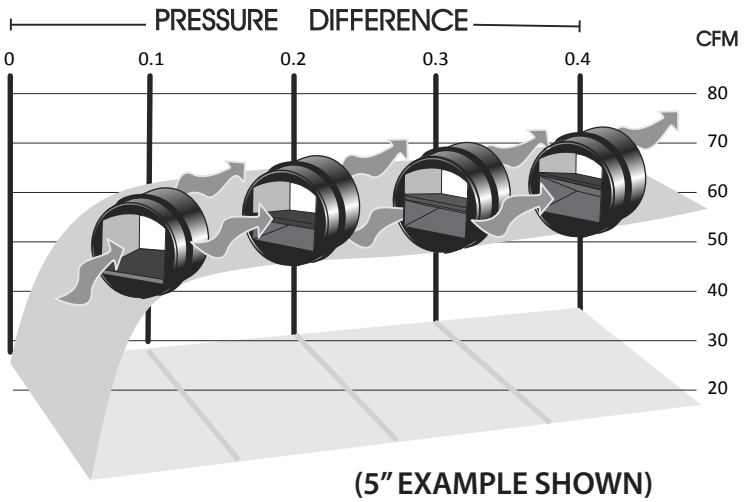
FRONT **SIDE**

PART NUMBER	SIZE* (NOMINAL)	REGULATOR (NOMINAL)	A	B	C	D	E
18 832LP	6″ x 6″	4″	7.5″	7.5″	5.6″	3.6″	3.3″
18 833LP	6″ x 6″	5″	7.5″	7.5″	5.6″	4.6″	4.5″
18 835LP	8″ x 8″	4″	9.5″	9.5″	7.6″	3.6″	3.3″
18 836LP	8″ x 8″	5″	9.5″	9.5″	7.6″	4.6″	4.5″
18 837LP	8″ x 8″	6″	9.5″	9.5″	7.6″	5.8″	4.5″
18 839LP	10″ x 10″	4″	11.5″	11.5″	9.6″	3.6″	3.3″
18 840LP	10″ x 10″	5″	11.5″	11.5″	9.6″	4.6″	4.5
18 841LP	10″ x 10″	6″	11.5″	11.5″	9.6″	5.8″	4.5″
18 842LP	10″ x 10″	8″	11.5″	11.5″	9.6″	7.6″	4.5″
18 844LP	12″ x 12″	4″	13.5″	13.5″	11.6″	3.6″	3.3″
18 845LP	12″ x 12″	5″	13.5″	13.5″	11.6″	4.6″	4.5″
18 846LP	12″ x 12″	6″	13.5″	13.5″	11.6″	5.8″	4.5″
18 847LP	12″ x 12″	8″	13.5″	13.5″	11.6″	7.6″	4.5″
18 848LP	12″ x 12″	10″	13.5″	13.5″	11.6″	9.6″	4.7″

*Standard grille sizes shown. Contact factory for custom sizes.

How the CAR-II-LP Works

Constant airflow is achieved by controlling the free area through the device. At minimum static pressure, the aero-wing is parallel to the air stream. As the static pressure increases, the aero-wing lifts, reducing the amount of free area through the regulator. At the same time, higher static pressure increases the air velocity resulting in CONSTANT AIRFLOW. This occurs regardless of pressure differences in the range of 0.1 to 0.42 in. w.g. (25 to 100 Pa).



(5" EXAMPLE SHOWN)

Typical CSR-LP-S-IIR Applications

- **Supply air systems.**
- **Balancing supply airflows in high-rise building duct risers.**
- **Regulated air supply in nursing homes, hotels, motels, dormitories, apartment buildings, offices, etc.**

Typical Specification

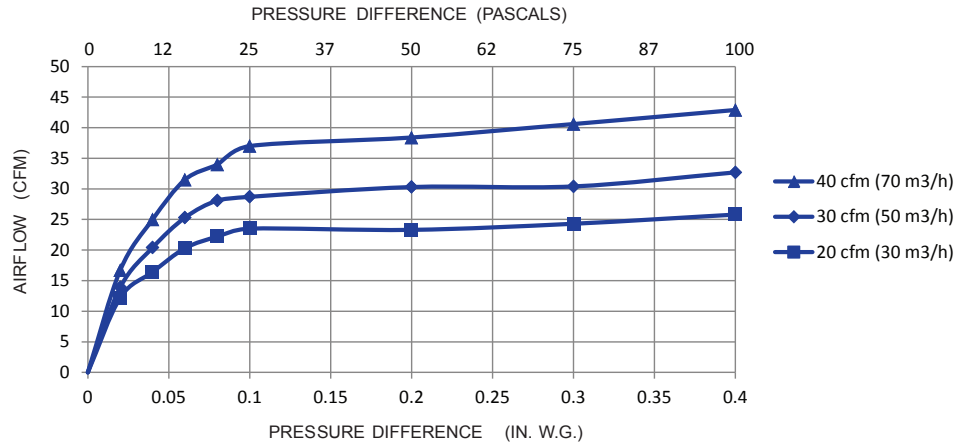
Model CSR-LP-S-IIR Constant Supply Registers by American ALDES Ventilation Corporation, Bradenton, Florida, shall solely operate on duct pressure and require no external power supply. Each register shall be pre-set and factory calibrated, requiring no field adjustment to the airflows as indicated on the schedule, and shall be rated for use in air temperatures ranging from -25° to 140°F (-32° to 60°C.)

Constant Supply Registers 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 0.1 to 0.42 in. w.g. differential pressure, or 0.2 to 0.8 in. w.g. on standard-pressure models (CSR-S-IIR). Registers shall be provided as an assembly consisting of an all-aluminum single-deflection grille, retrofit gasket, and UL2043 classified and labeled airflow regulator. All Constant Supply Registers will require no maintenance and must be warranted for a period of no less than five years. Constant Supply Registers shall be installed in tight ducting systems in accordance with all applicable codes and manufacturer's instructions.

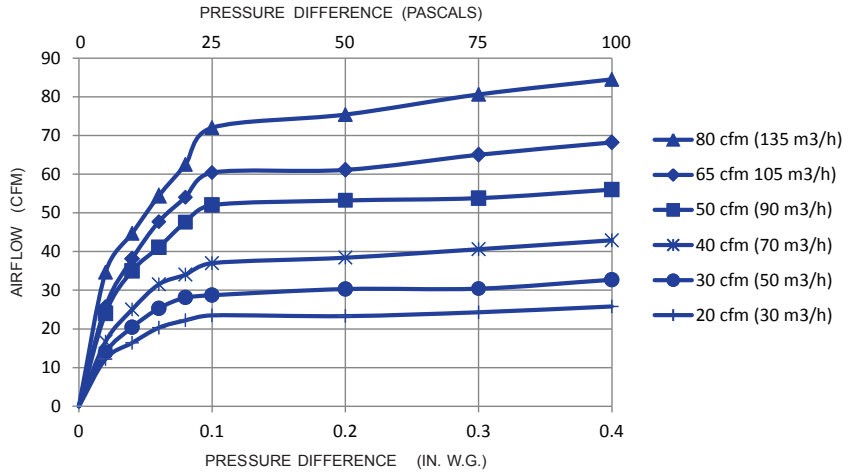
CSR-LP-S-IIR Airflow Performance Data

Performance charts reflect airflow measurements taken at 68°F (20°C) at 1 atmosphere pressure. The CSR-LP-S-IIR is designed for system pressures between 0.1 and 0.42 in. w.g. Models are also available for applications with system pressures between 0.2 and 0.8 in. w.g (CSR-S-IIR).

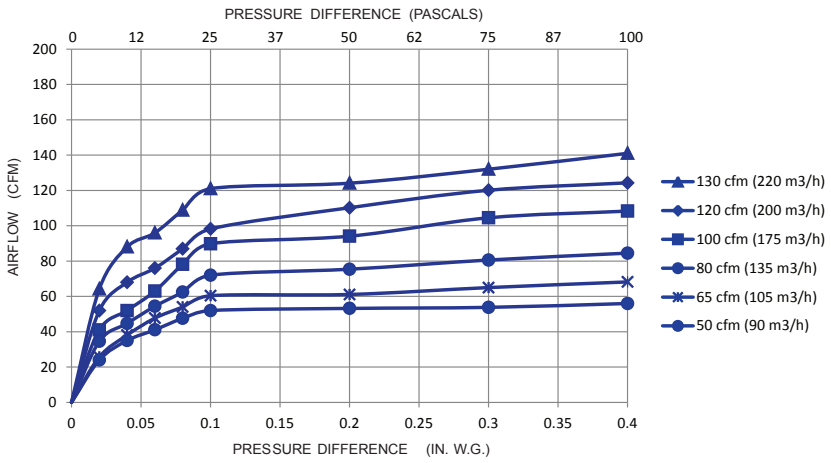
4" DIAMETER (100 mm) REGULATING ELEMENT



5" DIAMETER (125 mm) REGULATING ELEMENT



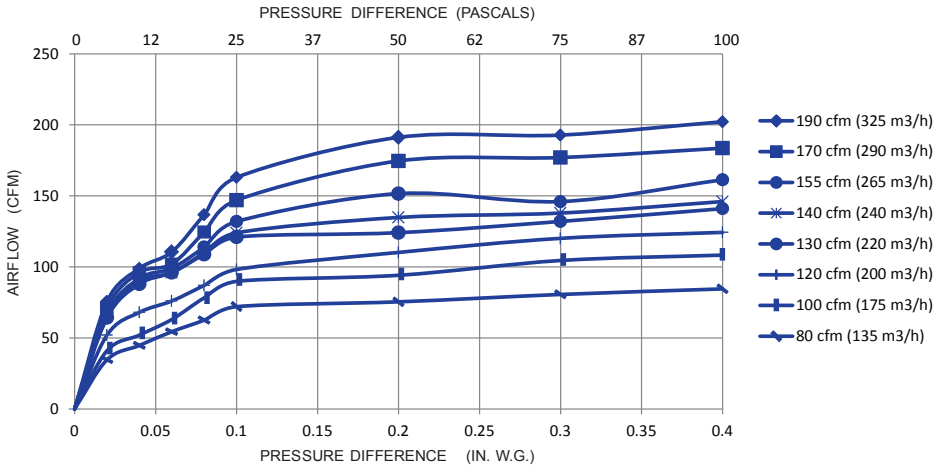
6" DIAMETER (150 mm) REGULATING ELEMENT



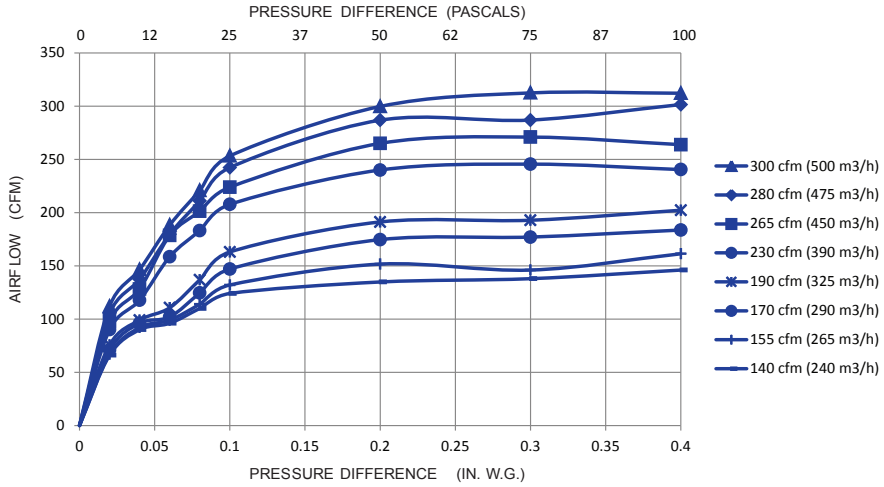
CSR-LP-S-IIR Airflow Performance Data

Performance charts reflect airflow measurements taken at 68°F (20°C) at 1 atmosphere pressure. The CSR-LP-S-IIR is designed for system pressures between 0.1 and 0.42 in. w.g. Models are also available for applications with system pressures between 0.2 and 0.8 in. w.g (CSR-S-IIR).

8" DIAMETER (200 mm) REGULATING ELEMENT



10" DIAMETER (250 mm) REGULATING ELEMENT



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