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SPECIALTY EXHAUST GRILLES

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CEG-II, CEG-II TWIN, HCG, AND OSG

SPECIALTY EXHAUST GRILLES

TECHNICAL DOCUMENTATION

CEG-II and CEG-II Twin

The CEG-II Series is the latest generation of constant exhaust grilles by ALDES. The CEG-II incorporates a modulating orifice that automatically regulates airflows in exhaust duct systems to constant levels. The passive control element responds to duct pressure and requires no electric or pneumatic sensors or controls.

The CEG-II compensates for changes in duct pressure caused by thermal stack effect, building pressure, dust-clogged filters, etc. The CEG-II also provides a low-cost solution to balancing airflows in multiple-point exhaust systems by eliminating the need for on-site damper adjustment.

The active control element of the CEG-II Series is housed in an aesthetically pleasing white molded cover that suits almost any architectural style. The cover and control element are easily removable for cleaning, if necessary. Each CEG-II and CEG-II Twin can be adjusted to three distinct, pre-calibrated airflow settings, making it easy for the contractor or end-user to make on-site adjustments if the ventilation demand changes.

Features

- Removable control element for simple maintenance.
- Constructed of UV-resistant ABS plastic.
- Exceptionally quiet performance across the specified pressure range.
- Airflow regulator ensures constant airflow control over pressure range of 0.2 to 0.65 in. w.g. (50 to 160 Pa).
- Fits 5" (125 mm) round ducting or mounts directly over duct opening (depending on model).
- Removable grille held in place by a friction fit for easy access to control element.

CEG-II



CEG-II MODELS						
PART NUMBER	DESCRIPTION	AIRFLOW SETTINGS				
19 451	CEG-II - 5" Collar	10/20 CFM (15/30 m³/h)				
19 452	CEG-II - 5" Collar	20/30/40 CFM (30/45/60 m³/h)				
19 453	CEG-II (Wall Mount)	10/20 CFM (15/30 m³/h)				
19 454	CEG-II (Wall Mount)	20/30/40 CFM (30/45/60 m ³ /h)				
19 455	CEG-II Twin - 5″ Collar	40/55/65 CFM (60/75/90 m³/h)				
19 456	CEG-II Twin - 5" Collar	75/85/95 CFM (100/120/150 m ³ /h)				
19 457	CEG-II Twin (Wall Mount)	40/55/65 CFM (60/75/90 m³/h)				
19 458	CEG-II Twin (Wall Mount)	75/85/95 CFM (100/120/150 m ³ /h)				
ACCESSORIES						
19 460	Wall Adapter Plate (CEG-II	or CEG-II Twin)				
19 429	Sound-Absorbing Ring Insert					

Dimensions

CEG-II



FRONT VIEW

CEG-II Twin



FRONT VIEW



SIDE VIEW (WITH COLLAR) P/N 19 451 & 19 452



SIDE VIEW (WITH COLLAR) P/N 19 455



SIDE VIEW (NO COLLAR) P/N 19 453 & 19 454





SIDE VIEW (WITH COLLAR) P/N 19 456



SIDE VIEW (NO COLLAR) P/N 19 457

Airflow Performance



ACOUSTIC PERFORMANCE								
MODEL	AIRFLOW	FREQUENCY (Hz)						OVERALL
	(CFM) *	125	250	500	1000	2000	4000	Lw (dB(A))
	10	24	25	19	24	16	26	32
GEC 11	20	25	27	20	23	22	16	31
CEG-II	30	28	35	25	28	27	22	38
	40	39	40	36	35	36	31	41
	40	43	43	41	41	31	28	43
	55	45	48	45	44	35	30	47
CEG-II	65	45	50	46	44	37	32	49
TWIN	75	47	47	47	43	38	32	48
	85	51	50	49	44	39	34	50
	95	53	52	50	44	41	35	51

* Airflow measured at 0.55 in. w.g. (136 Pa)

Wall Adapter Plate (P/N 19 460)

HCG

The HCG humidity-controlled grille is a variable airflow exhaust terminal that automatically adjusts the airflow rate according to the relative humidity of the space. Designed for mechanical exhaust systems in residential and institutional applications, this grille provides airflow directly proportionate to the presence of and activity level of occupants in the space.

This control of the airflow rate permits ventilation when and where it is necessary, responds to the health and comfort requirements of the occupants, reduces moisture damage, and reduces energy costs by avoiding unnecessary ventilation.

Fresh air in a complete humidity-controlled ventilation system is provided in each main living space, bedroom offices, etc., by fresh air inlets, or a separate supply ventilation system. Transfer grilles permit air circulation from the main living areas to the rooms with specific pollutants (bathrooms, kitchens, laundry rooms, etc.).

Stale air is exhausted from rooms with specific pollutants through the exhaust grilles (HCG) by means of a central exhaust fan.

Dimensions





HCG+ and HCGM+







Components

- Energy conservation by demandcontrolled ventilation.
- Comfort and quality of air.

Features

- Reduced moisture and condensation damage to the building.
- Extremely low sound levels.
- Simple maintenance because all functioning parts are easily removed and designed to permit cleaning in a dishwasher.
- Large pressure range for the design airflow rates: from 0.3 - 0.6 in. wg. (70-150 Pa).

The HCG is composed of:

- Face cover in white ABS plastic.
- White grille (yellow, dark gray, red, and green available by special order).
- Duct connection (for 3" or 5" duct), with a brush gasket to provide a tight seal.
- Humidity-sensitive activator, in nylon ribbon, that expands and contracts in response to the relative humidity of the space.
- Damper mechanism(s) connected to the nylon elements by a mechanical linkage, so as to operate the dampers in direct proportion to the humidity level of the space.
- Motorized actuator for timer models (requires 9V battery) opens the damper for 30 minutes of higher airflow (Timer models require a separate momentary contact switch).
- All mechanical control elements are located behind the face plate of the HCG.

Airflow Characteristics System Design Considerations

Ducting, sizing and fan selection must be appropriate to provide a duct pressure behind the grille of 70 to 150 Pascals (0.3 to 0.6 in. wg). Rated airflows are based on 0.4" wg. (100 Pa) At 70 Pa, the airflow is 14% lower than rated. At 150 Pa, the airflow is 22% higher than rated. As a matter of effectiveness in removing humidity, a lower flow will cause the unit to remain open longer; at higher pressures, the humidity will be controlled earlier, and the damper will close sooner. On small systems, this may be achieved economically using fans with a flat pressure/airflow characteristic curve, and variable-speed motors or dampers adjusted for constant static pressure on large systems.

The duct system and fan must be selected to permit the maximum airflow likely to be obtained in actual use. This design airflow condition occurs in summer, the season in which the fresh outdoor air admitted to the building contains the highest level of absolute humidity, on the order of 60% to 65%, depending on climatic zone. This consideration is necessary so as to obtain the required duct pressures at the grilles when all are open to the maximum setting.

The HCG may be installed in a ceiling assembly, suspended ceiling, or on a partition wall. It may be connected to rigid duct or flexible duct with a metal sleeve in 3" (75 mm) or 5" (125 mm) diameter, depending on the model. Model HCG+ (P/N: 17 373) has a 5" round duct connector with a brush seal. All other models must be secured by screws to the mounting surface. A gasket provides a tight seal.



ACOUSTIC DATA

The levels of acoustic power (L_w) emitted by an exhaust grille at 65% relative humidity are shown in the table below. In the average airflow range in actual use, with lower humidity levels, these acoustic power levels are diminished by 3 dB(A).

HCG							
P in Pa	70	90	110	130	150		
L _w in dB(A)	24	27	27 30 31				
L _w w/acoustic ring in dB(A)	28	30	31	32	34		
HCG M+							
L _w in dB(A) 27 29 32 34					35		
L _w w/acoustic ring in dB(A)	29	31	34	36	37		

Note: The acoustic ring provides attenuation of duct-borne noise. As the table indicates, it slightly increases the self noise generated by the grille. It should only be used when the fan/duct-borne noise is too high and needs attenuation.

ORDERING INFORMATION								
PART NUMBER	DESCRIPTION OPERATING RH % AIRFLOW RANGE (CFM) @ 0.4 w.g. BOOST AIRFLOW (CFM) TIMER DURATION							
15 349	HCG (Automatic Control)	22-69	3-25		N/A			
15 352	HCGM (Battery Operated)	22-69	3-30	20	20 min.			
17 373	HCG+ (Automatic Control)	30-75	12-90		N/A			
15 376	HCG M+ (Battery Operated)	36-76	6-30	80	25 min.			
	ACCESSORIES							
15 275	15 275 12 VAC plug-in circuit board to convert 9V DC powered units (6 VA requirement, transformer provided by electrician)							
15 018	Flush-Mount Gasket for use when round collars are not used							
15 274	4" Duct Collar for round duct attachment							
15 017	5" Duct Collar for round duct attachment							
15 276	Retrofit Adapter Plate							
19 429	Sound Absorbing Ring Insert							

OSG

The OSG Occupancy-Sensing Grille is a stand-alone terminal that automatically boosts the exhaust airflow when a room is occupied. A lens detects movement and triggers circuit opening (instantaneous) and closing (after a 20-minute time out). During installation, the grille is manually set for a boost flow rate of 15, 30, 45, or 60 CFM. The minimum airflow rate is 3-5 CFM when the space is unoccupied.





Features

- Basic flow rate manually adjustable by the switch: 15, 30, 45 or 60 CFM.
- Flow rate automatically reduced to 3-5 CFM when the room is unoccupied.
- Airflow rates are based on 0.40 in. w.g. (100 Pa).
- The OSG operating range is from 0.28-0.52 in. w.g (70-130 Pa). Under these usage conditions, the relative variation of the flow at each ventilation orifice is limited to 15%.
- Manually adjustable maximum airflow setpoints based on the switch table.

Switch

A switch allows the user to set the basic airflow according to the standard occupancy level of the room.

5022	
233	
5	

Switch

Switch Position	Corresponding Flow Rate
•	15 CFM
••	30 CFM
•••	45 CFM
••••	60 CFM

ACOUSTIC PROPERTIES							
	Decibels (dB)						
Duct Pressure	Switch Position						
	•	••	•••	••••			
0.4" in.w.g (100 Pa)	30	30.3	32.2	33.3			

Dimensions





FIELD OF DETECTION

Ceiling Mounted





Wall Mounted





OSG MODELS							
Part Number	Model	Timer	Power Supply	Connection to Relay	Type of Relay (Not Included)		
17 105	OSG-9V	20-minute	Connector for standard 9V alkaline 6LR61 battery (battery supplied)				
17 106	OSG-12V	20-minute	12 VAC (black cable)				
17 126	OSG-12V+	20-minute	12 VAC (black cable)	Cable for relay (gray cable)	6V DC relay, coil cur- rent, 100mA max.		
17 107	OSG-F						
ACCESSORIES							
17 110	12 VAC Tran	sformer, 12 V	AC Fuse				



For more information, contact your Aldes sales advisor, visit aldes-na.com, or find us on

