GRANDE

all-stainless exhaust hoods with lighting

Kitchen extractor hoods GRANDE provide efficient extraction and filtration of exhaust air above kitchen appliances of all sizes and layouts. They can be customized to include automatic control. The cooker hoods are supplied in standard sizes as per the tables; irregular sizes within the specified range and the same height of 435 mm are also available for an extra charge.

GRANDE-series cooker hoods are made of stainless steel sheet as per CSN 17240 (AISI 304). The filtration of extraction air is provided by high-efficiency cassette-type grease separators 400 × 400 mm in size. As standard the cooker hoods are fitted with slide-in grease collectors, power-saving LED lighting, a terminal block for connection and optionally a wireless lighting switch.

The extraction outlets are circular or rectangular, located on the top.

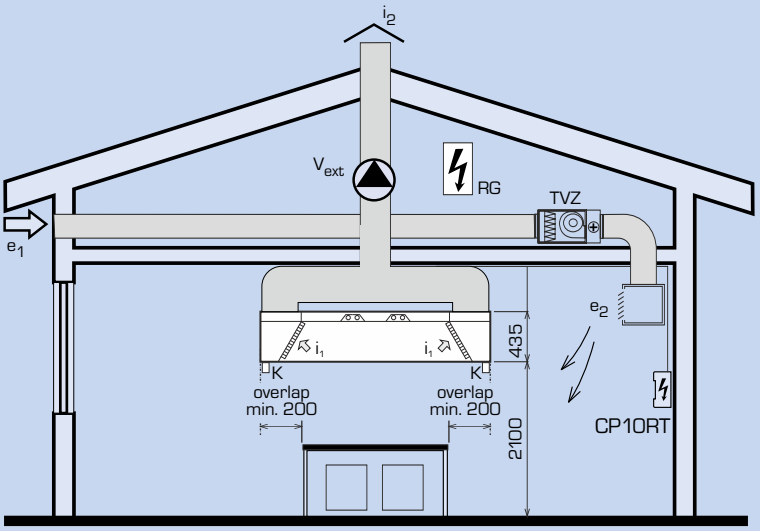
The centre-type hoods are suspended using suspension rods M8, anchored in the ceiling as specified by the drawing.

Automatic control system RD5

GRANDE cooker hoods can be customized to feature a digital control system, which provides for energy-saving ventilation related to immediate heat load generated by kitchen appliances to avoid the uneconomical operation of fans at times when there is no cooking going on or when heat load is reduced.

The automatic control system is fundamentally based on temperature detection above appliances and in the kitchen. If there is no temperature difference, fans are running at a minimum required speed for ensuring a basic rate of air change, with only gas appliances allowed to run. If the temperature difference between the sensors increases, the extraction and supply fans automatically switch to a higher performance level. If the difference continues to increase, the speed of both fans smoothly rises until it reaches the maximum level of performance. When the temperature difference drops, the fan power is automatically lowered or even switches to basic minimum air change mode.

SCHEMATIC DIAGRAM



LEGEND

e_1	...	fresh outdoor air supply
e_2	...	preheated fresh air inlet into the kitchen
i_1	...	air exhausted from hood
i_2	...	exhaust of effluent air from hood
TVZ	...	hot-air supply unit with filtration, heating and antifreeze control
K	...	condensate pan (slide-in)
	...	lighting
CP10RT		control panel (optional)
V_{ext}	...	extractor fan
RG5	...	RD5 control system switchboard (optional)

SELECTION SOFTWARE

A special selection software can also be used for designing the hoods, created in compliance with VDI 2052 directive (Germany).

You can find this program on our website www.atrea.eu.

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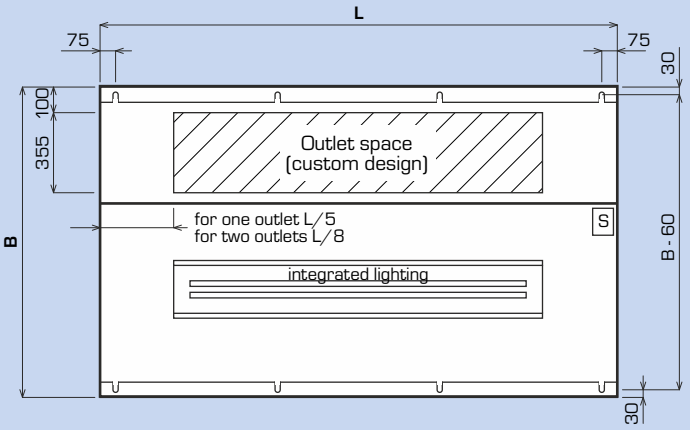
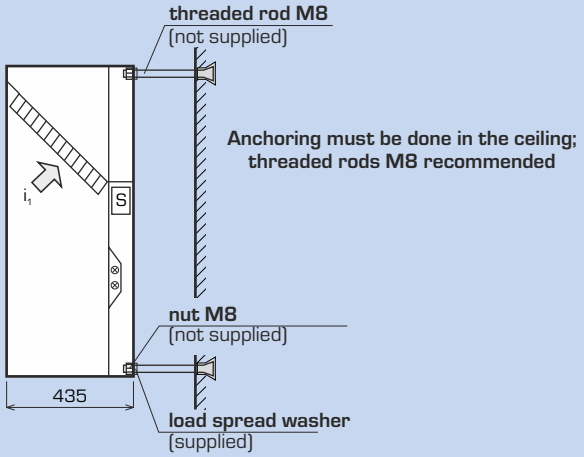
DESIGN GRANDE

GRANDE-1R (SINGLE ROW)

SINGLE ROW B = 1 000 to 1 500 mm



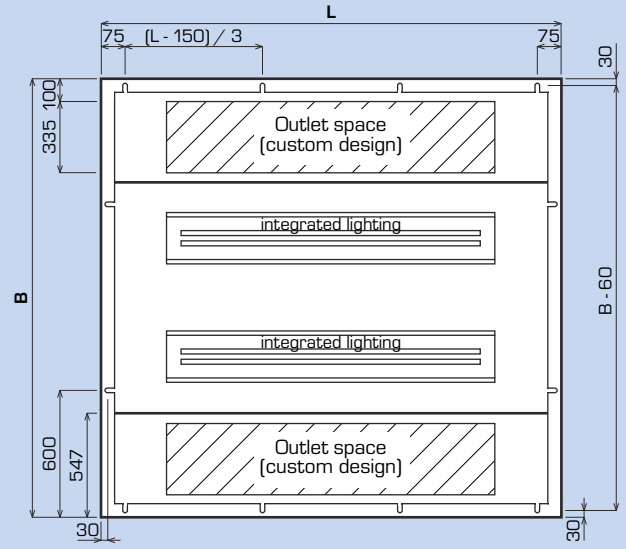


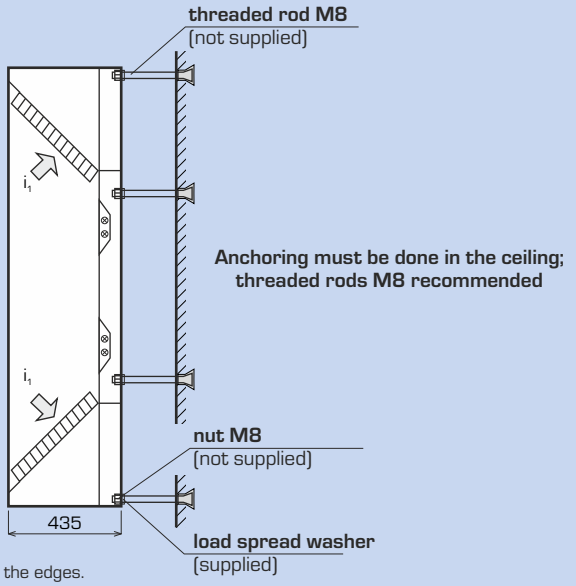
DIMENSIONS AND SIZING

cooker hood dimensions (mm)					maximum number of separators	maximum flow rate (m^3/h)	maximum pressure drop (Pa)	lighting power input	number of suspensions
lenght L	width B								
1 000	1 000	1 200	1 400	1 500	2	1 160	49	2x 14 W / 22 W	4
1 250	1 000	1 200	1 400	1 500	2	1 160	49	2x 14 W / 22 W	4
1 500	1 000	1 200	1 400	1 500	3	1 740	64	2x 28 W / 44 W	4
1 750	1 000	1 200	1 400	1 500	3	1 740	64	2x 28 W / 44 W	4
2 000	1 000	1 200	1 400	1 500	4	2 320	78	2x 49 W / 65 W	8
2 250	1 000	1 200	1 400	1 500	5	2 900	93	2x 49 W / 65 W	8
2 500	1 000	1 200	1 400	1 500	5	2 900	93	2x 49 W / 65 W	8
2 750	1 000	1 200	1 400	1 500	6	3 480	107	2x 49 W / 65 W	8

GRANDE-2R (DOUBLE ROW)

DOUBLE ROW B = 1 600 to 2 500 mm





Cooker hoods L > 3,000 mm are always supplied with two outlets located in 1/4 of length from the edges.

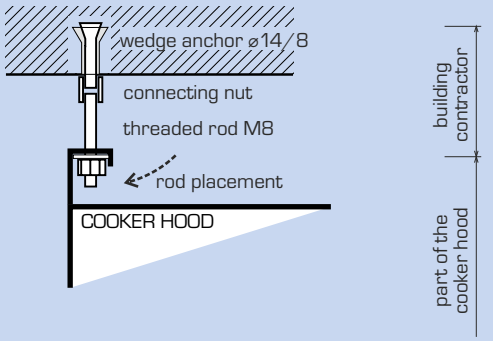
DIMENSIONS AND SIZING

cooker hood dimension (mm)							maximum number of separators	maximum flow rate (m^3/h)	maximum pressure drop (Pa)	lighting power input (W)		number of suspen-sions
lenght L	widht B									B = 1500–1950	B = 2000–2500	
1 000	1 600	1 800	2 000	2 200	2 400	2 500	4	2 320	78	22 W	2× 22 W	8
1 250	1 600	1 800	2 000	2 200	2 400	2 500	4	2 320	78	22 W	2× 22 W	8
1 500	1 600	1 800	2 000	2 200	2 400	2 500	6	3 480	107	44 W	2× 44 W	8
1 750	1 600	1 800	2 000	2 200	2 400	2 500	6	3 480	136	44 W	2× 44 W	8
2 000	1 600	1 800	2 000	2 200	2 400	2 500	8	4 640	136	65 W	2× 65 W	12
2 250	1 600	1 800	2 000	2 200	2 400	2 500	10	5 800	165	65 W	2× 65 W	12
2 500	1 600	1 800	2 000	2 200	2 400	2 500	10	5 800	165	65 W	2× 65 W	12
2 750	1 600	1 800	2 000	2 200	2 400	2 500	12	6 960	194	65 W	2× 65 W	12

ANCHORING

GRANDE
anchoring to the ceiling

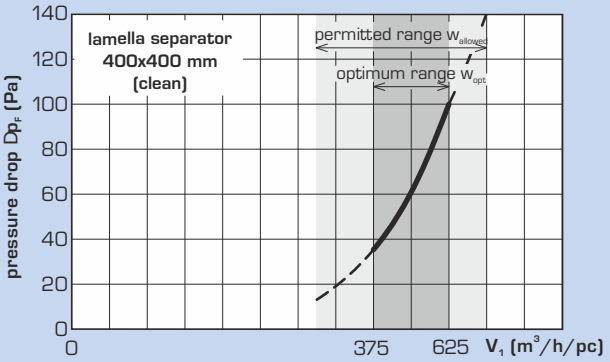
GRANDE cooker hoods are fitted with special fixtures for suspension using M8 threaded rods, anchored in the ceiling with 14 / 8 mm wedge anchors (not supplied). The fixtures are provided with cut-outs to facilitate the pushing of the suspension rods with nut into place and the height adjustment of the hood. For the number and type of suspensions see the drawings.



LAMELLA SEPARATORS

As standard the cooker hoods are fitted with lamella separators 400×400 mm.

The number of filters is always determined according to the assumed flow rate through the cooked hood as shown in the graph in such a way so as to ensure for the flow rate through one filter to be always in the optimum range. It is then necessary to check whether the calculated number of filters can be physically fitted in the cooker hood.



WEIGHT

$G_{cooker\ hood} \cong$ L x B x (35 to 45 kg / m^2 of plan)
$G_{separator} \cong$ 3,5 kg / piece

IMPORANT NOTICES

- maximum extraction air temperature is 60 °C
- class B gas appliances must be ducted into a chimney, not in the cooker hood in any event
- ensure the sufficient overlap of the cooker hood over the outlines of appliances

ORDERING INFORMATION

Cooker hood GRANDE – L × B (mm) – V (m^3/h) – ø D (mm), number of filters, – automatic control YES / NO – RD-K, CP TOUCH, CP1ORT, terminal block RG – type, extractor (and supply) fan power input and type

AUTOMATIC OPERATION CONTROL SYSTEM RD5

DIGITAL CONTROL SYSTEM RD5

System overview

The automatic control system consists of the following parts:
- **RG5** distribution board
- **RD-K** microprocessor module
- **CP 10 RT** or **CP Touch** control panel

RG5 distribution boards are supplied for wall mounting with an IP rating of 54. They are to be installed in places such as the HVAC plant room, corridors or warehouses, always outside the kitchen and close to the fans.
The **CP 10 RT** control panel is used for smooth ventilation performance and temperature control with LED operation indicator. The CP 10 RT control panels are supplied in a plastic box for wall mounting, with an IP rating of 43. They are to be installed in the kitchen.

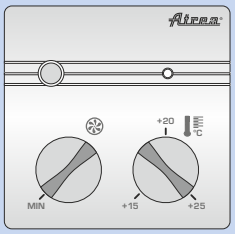
For touch-screen control is necessary to mount **CP Touch** control panel, which must not be mounted in the kitchen area.

Advantages of automatic controls

Automatic control systems are renowned for economical operation and a high ROI and significantly help in ensuring perfectly hygienic conditions in kitchens.

CP LINE CONTROL PANELS

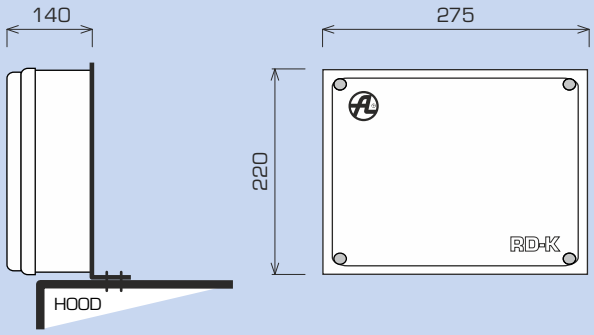
CP10RT



CP Touch

Location of CP10 RT: In the kitchen at a height of approximately 1,300–1,500 mm.
Location of CP Touch: E.g. Office space for the possibility of setting automatic modes.
Protection rating: IP 43

RD-K MICROPROCESSOR MODULE



Location: It is typically installed in the top edge or front of extractor hoods.

OPERATIONAL ECONOMY

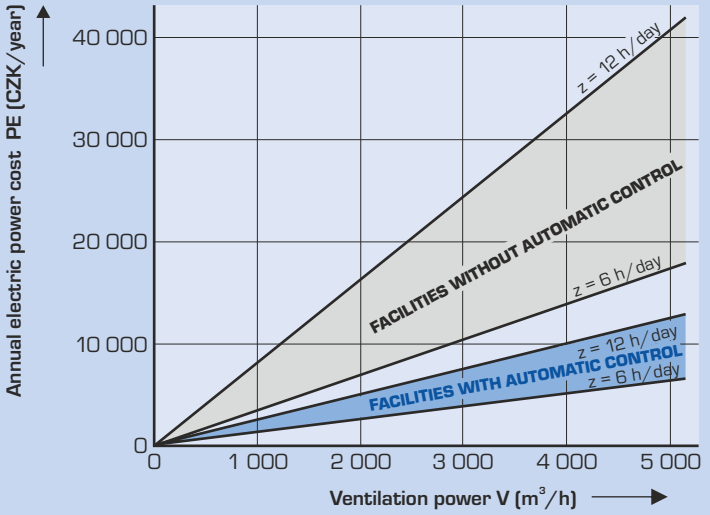
The primary goal of a properly designed automatic control system is to eliminate the human factor in order to lower the energy intensity of fan operation and ventilation air re-heating.
The graph compares the annual cost of fan operation with respect to ventilation power and daily operation (with a rate of 3.50 CZK/kWh of electric power). The graph does not include energy saving on air re-heating.

The calculation is performed for the parameters:

HVAC system parameters: Dp = 550 Pa, fan efficiency 0.55, operating time 300 days/year, automatic control system reduces performance in 70 % of operating time to 45 % N_{max}

Conclusion

The economic return on investment in ATREA automatic control system is normally up to 1 year.



WEB SERVER

Internet-based interface

A Web-based server integrated in the RD5 digital control system for remote control and monitoring of DUPLEX units via the Internet.
Its intuitive Web-based interface provides access to all user and service parameters, resulting in greatly simplified servicing as well as comfortable remote access for the user.