Difair

Serie L_TR



MOTORIZED LINEAR GRILLE

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www.difair.es

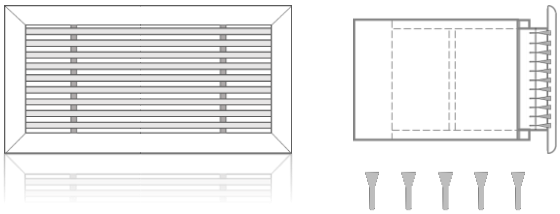
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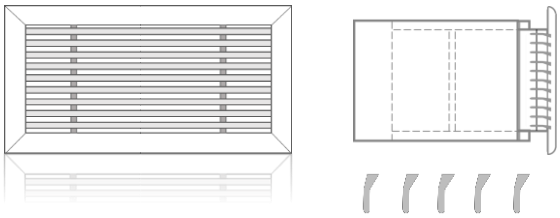
MOTORIZED LINEAR GRILLE
SERIES L_TR



MODELS

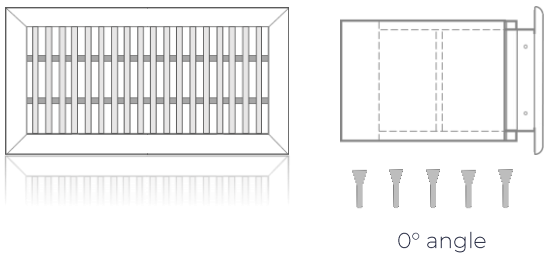


L100TR
Motorized linear grille with a 25-mm perimeter frame and horizontal blades at a 0° angle.

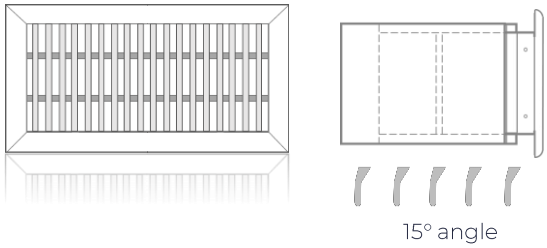


L1015TR
Motorized linear grille with a 25-mm perimeter frame and horizontal blades at a 15° angle.

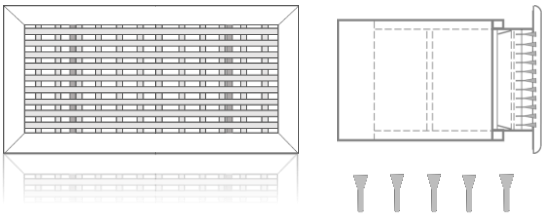
L110TR
Motorized linear grille with a 25-mm perimeter frame and vertical blades at a 0° angle.



L1115TR
Motorized linear grille with a 25-mm perimeter frame and vertical blades at a 15° angle.



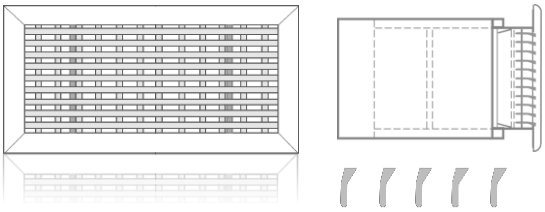
MODELOS



0° angle

L200TR

Motorized linear grille with a 25-mm perimeter frame, dual-deflection design, horizontal blades at 0° angle, and a second row of movable vertical blades.



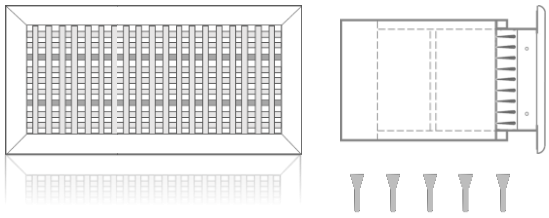
15° angle

L2015TR

Motorized linear grille with a 25-mm perimeter frame, dual-deflection design, horizontal blades at 15° angle, and a second row of movable vertical blades.

L210TR

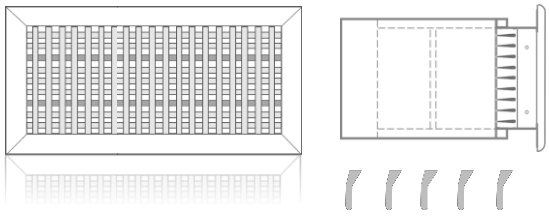
Motorized linear grille with a 25-mm perimeter frame, dual-deflection design, vertical blades at 0° angle, and a second row of movable horizontal blades.



0° angle

L2115TR

Motorized linear grille with a 25-mm perimeter frame, dual-deflection design, vertical blades at 15° angle, and a second row of movable horizontal blades.



15° angle

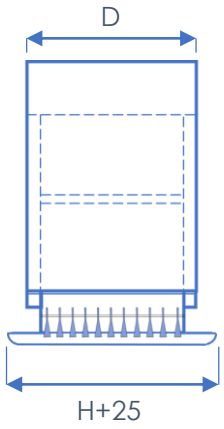
DESCRIPTION

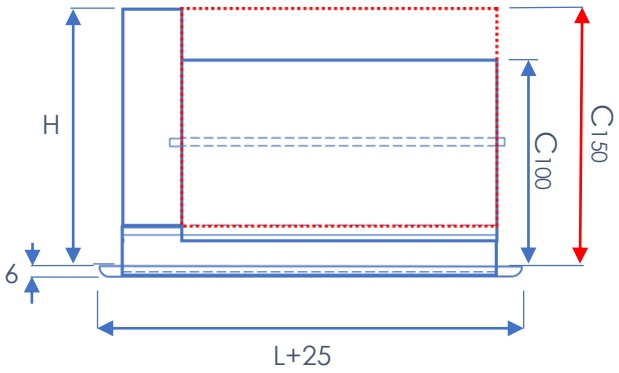
The new zone control and home automation systems allow for individualized temperature control of different zones using a single **HVAC** unit, thereby increasing comfort in each room. These systems reduce the unit's operating time, extending its service life and providing energy savings. The motor operates completely silently, promoting rest and comfort when the vents are installed in bedrooms or offices.

DIFAIR's exclusive **L1__TR** and **L2__TR** grilles can be integrated into any existing control system on the market, since all they require to operate is a **220 V** or **24 V** power supply to open them. This system can range from a simple switch to the most complex home automation system on the market.

DIMENSIONS

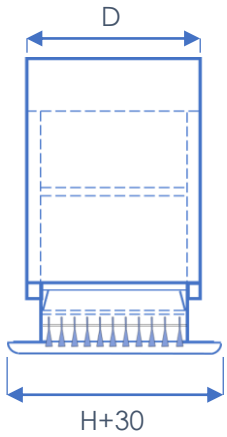
L100TR-L1015TR-L110TR-L1115TR

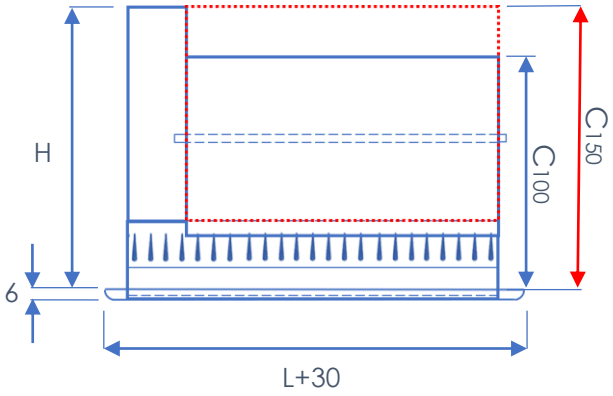




	Size	H (mm)	C (mm)	D (mm)
L100TR-L1015TR-L110TR-L1115TR	L x 100 L x 200	134	C100 = 106	C100 = 87
L100TR-L1015TR-L110TR-L1115TR	L x 150 L x 250 L x 300	154	C150 = 154	C150 = 135

L200TR-L2015TR-L210TR-L2115TR





	Size	H (mm)	C (mm)	D (mm)
L200TR-L2015TR-L210TR-L2115TR	L x 100 L x 200	156	C100 = 128	C100 = 87
L200TR-L2015TR-L210TR-L2115TR	L x 150 L x 250 L x 300	176	C150 = 176	C150 = 135

L X H → Nominal Size = Hole Size

Dimensions may be specified as L x H, with a maximum of 1,000 x 300 and a minimum of 200 x 100 (including the mounting frame). For the vertical models (L110TR, L1115TR, L210TR, and L2115TR), the minimum height is 200 mm.

CONSTRUCTION FEATURES

Linear grille made of anodized or painted aluminum, with motorized adjustment (damper) consisting of a frame made of aluminum or steel sheet painted with black epoxy paint. A single natural aluminum blade with built-in rubber gaskets to ensure optimal airtightness in this type of installation. Highly durable brass bushings.

It incorporates a low-power, thermosilicon-coated electrical device. This damper control mechanism is an exclusive **DIFAIR** design that makes no noise when activated (only the sound of air flowing through it can be heard).

CONSIDERATIONS:
To achieve zone-by-zone temperature control, any supply grille in an HVAC system may be replaced with one from this series (**L_TR**), provided that, if the grilles being replaced account for more than 60% of the system's total airflow, a weighted overpressure damper (RCSLP SERIES) must be installed to divert the excess airflow back to the unit's return duct, thereby preventing noise and/or potential duct damage caused by excess pressure.

ACCESSORIES

- **PLENUM BOX** (View the **PLENUM SERIES** technical data sheet).

FINISH

- Grille made of **ANODIZED ALUMINUM.**
- Grille made of **WHITE-PAINTED** aluminum **(RAL 9016).**
- On request, it can be manufactured in lacquered aluminum according to the **RAL** color chart.

TECH. SPECIFICATIONS OF THE THERMOACTUATOR MOTOR

Unless otherwise specified, the following characteristics must be verified at room temperature = **25 ± 5°C** and relative humidity = **45–75%**.

- **CORROSION RESISTANCE OF METAL PARTS**
  According to **UNE-EN-60335-1**, section **31**.

- **HUMIDITY RESISTANCE**
  Degree of protection against water ingress: **IP 00** (unprotected, per **IEC 60529**). Resistance to humid conditions: per **UNE-EN 60730-2-14**, Section **12.2** (Part **2-14** – Section **12.2**). Although the "silicone-molded" actuator does not have a higher IP rating, it can operate under severe environmental and relative humidity conditions (see **2.2** Operating Conditions).

- **HEAT AND FIRE RESISTANCE**
  According to **UNE-EN-60730-2-14**, Section **21** (Part **2-14** – Section **21**). The plastic materials of the thermoactuator that come into contact with the active parts are classified as **V0** self-extinguishing (**0.8 mm**) according to **UL94**. The thermoactuator also successfully passes the **140°C** ball test, **ref. UNE-EN-60335-1**, section **30.1** (Part **1** – Section **30.1**).

- **RESISTANCE TO SURFACE CURRENTS**
  According to **UNE-EN 60730-2-14**, section **21** (Part **2-14** – section **21**), the plastic materials of the thermoactuator that come into contact with live parts are guaranteed to have a **PTI 250** resistance to surface currents, in accordance with **IEC 60112**.

ELECTRICAL CHARACTERISTICS

- **POWER SUPPLY VOLTAGE**
  Available power ranges:
  -110/240 VAC at 50/60 Hz.
  -12/24 VAC at 50/60 Hz.
  -12/24 VDC.

- **ENERGY ABSORPTION:**
  Power absorption under steady-state conditions after 300 seconds of operation.

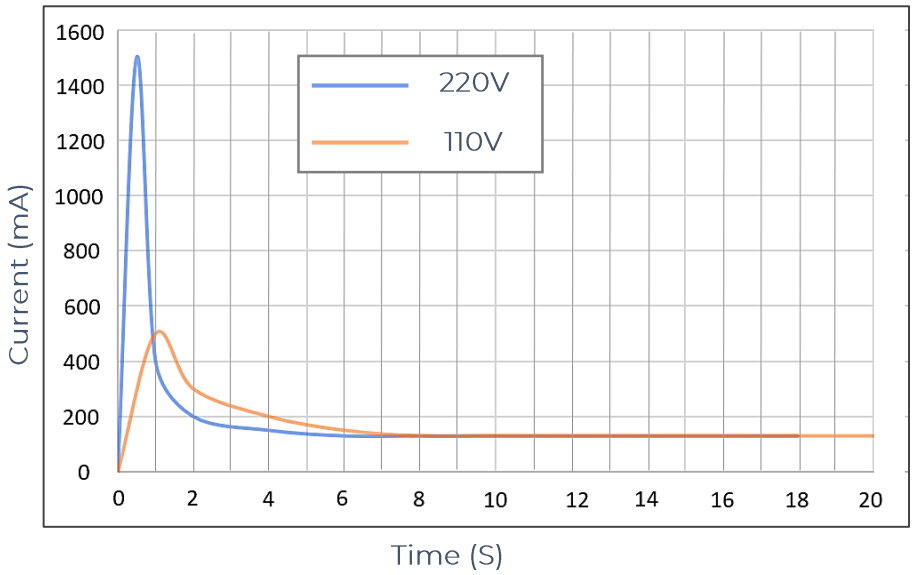
12/24 V	110V	220V
2.8 ± 1W	5.8 ± 1W	5.5 ± 1W

- **INTENSITY-TIME CURVE CHARACTERISTICS**

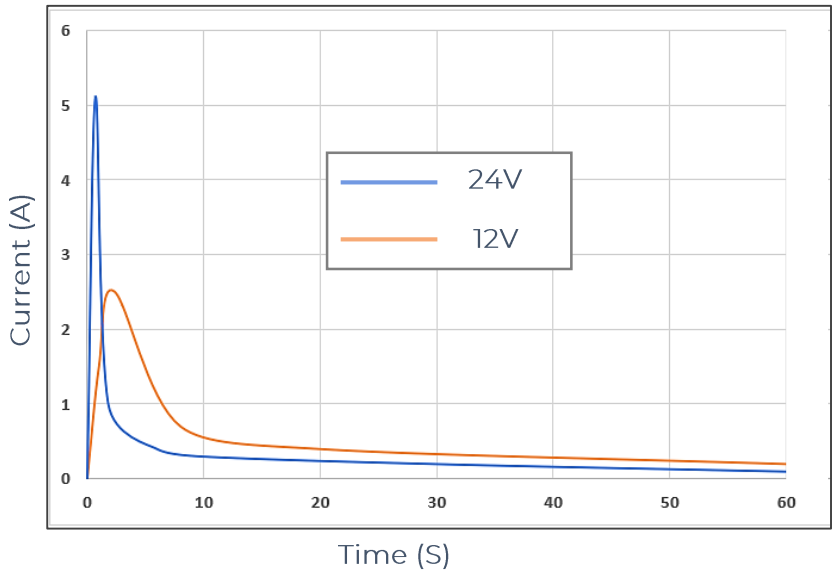
  A diagram illustrating the variation in current absorption over time. The curves are categorized by thermoactuator type and voltage.

  The diagram was obtained under the following conditions:
  - thermoactuators energized for more than 5 minutes;
  - no counteracting load;
  - ambient temperature of 25°C.

CURRENT ABSORPTION FOR 110-220V MOTOR



CURRENT ABSORPTION FOR 12-24 Vdc MOTOR



ENERGY CONSUMPTION PER MOTOR

MODEL	Consumption:			
	Peak consumption up to 120 s		Stable consumption starting at 120 s	
L100TR-L1015-L110TR-L1115TR-220V	110 V	0,5 A	110 V	0,05 A
L200TR-L2015-L210TR-L2115TR-220V	220 V	1,5 A	220 V	0,03 A
L100TR-L1015-L110TR-L1115TR-24V	12 VDC	2,4 A	12 VDC	0,25A
L200TR-L2015-L210TR-L2115TR-24V	24 VDC	5 A	24 VDC	0,15 A

MODEL	Available voltage supply range:
L100TR-L1015-L110TR-L1115TR-220V **L200TR-L2015-L210TR-L2115TR-220V**	110 ÷240 VAC a 50 ÷ 60 Hz.
L100TR-L1015-L110TR-L1115TR-24V **L200TR-L2015-L210TR-L2115TR-24V**	- 12 ÷ 24 VAC a 50 ÷ 60 Hz - 12 ÷ 24 VDC

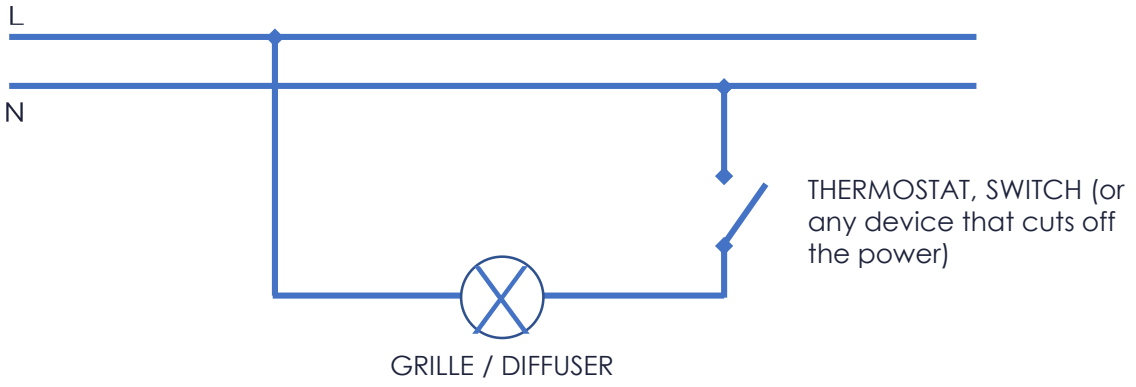
Note: The L_TR SERIES motorized grilles are manufactured in a standard 220V configuration; therefore, unless otherwise specified at the time of ordering, they will be supplied at this voltage.

NUMBER OF MOTORS PER GRILLE BASED ON SIZE

	200	250	300	350	400	450	500	600	700	800	900	1000
100	1	1	1	1	1	1	1	2	2	2	2	2
150	1	1	1	1	1	1	1	2	2	2	2	2
200	2	2	2	2	2	2	2	4	4	4	4	4
250	2	2	2	2	2	2	2	4	4	4	4	4
300	2	2	2	2	2	2	2	4	4	4	4	4

Note: When calculating electricity consumption, take into account the number of motors per grille

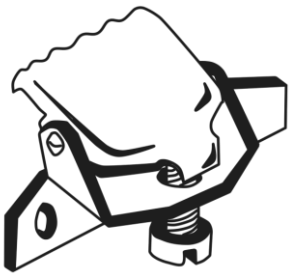
CONNECTION DIAGRAM

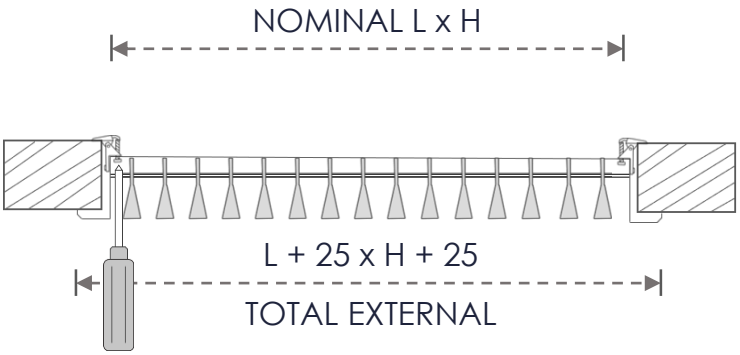


FIXING SYSTEM

GRILLE ASSEMBLY WITH CONCEALED FIXING (Compatible only with double deflection models: L200TR, L2015TR, L210TR y L2115TR)

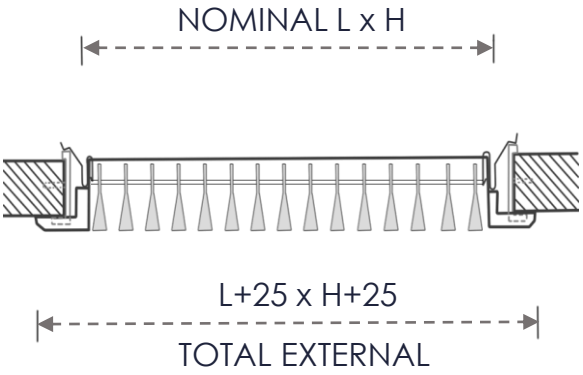
This type of fixing is the standard system for this series. Using a screwdriver to drive the indicated screw, the tongue is pressed onto the mounting frame, thus holding the grille firmly in place. To remove the grille, simply loosen the screw and the steel spring returns the claw to its horizontal position.

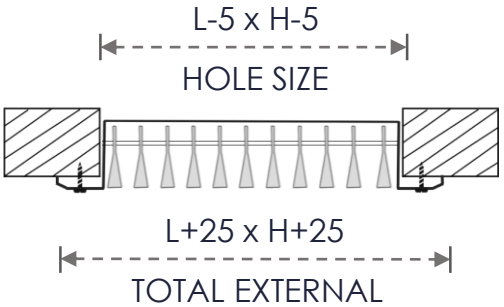




FIXING BY MEANS OF PRESSURE CLIPS

Once the mounting frame has been received, place the grille in the resulting recess and press until the grille is attached to the wall. The pressure that the clips exert on the mounting frame prevents the grille from slipping out of the mounting frame.





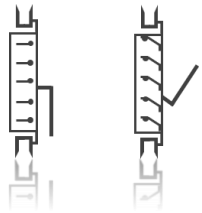
SCREWS FIXING

The grille is supplied with countersunk holes. Screws not included.

NOMINAL= L X H

FLOW MEASUREMENT

$m^3/h = m/s \times m^2 \times 3.600$



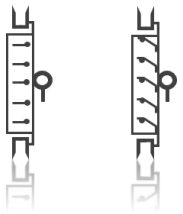
By Pitot tube:

Measurements must be taken at several points on the grille, the arithmetic measurement of all of them allows us to determine the effective suction velocity.

By anemometer:

The entire surface of the grille must be traversed with it to obtain the suction velocity.

$m^3/h = m/s \times m^2 \times 3.600$



EFFECTIVE SECTION (m^2)

MOD. L100TR-L1015TR-L110TR-L1115TR

H \ L	200	250	300	350	400	450	500	600	700	800	900	1.000
100	0.00443	0.00631	0.00819	0.01007	0.01195	0.01345	0.01533	0.01747	0.02123	0.02460	0.02836	0.03212
150	0.00909	0.01239	0.01569	0.01899	0.02229	0.02498	0.02828	0.03326	0.03986	0.04585	0.05245	0.05905
200	0.01212	0.01684	0.02156	0.02628	0.03100	0.03489	0.03961	0.04580	0.05524	0.06384	0.07328	0.08272
250	0.01678	0.02292	0.02906	0.03520	0.04134	0.04642	0.05256	0.06159	0.07387	0.08508	0.09736	0.10964
300	0.02144	0.02900	0.03656	0.04412	0.05168	0.05795	0.06551	0.07738	0.09250	0.10633	0.12145	0.13657

MOD. L200TR-L2015TR-L210TR-L2115TR

H \ L	200	250	300	350	400	450	500	600	700	800	900	1.000
100	0.00334	0.00484	0.00615	0.00765	0.00896	0.01026	0.01157	0.01271	0.01551	0.01813	0.02094	0.02375
150	0.00732	0.01001	0.01240	0.01509	0.01748	0.01986	0.02225	0.02566	0.03074	0.03551	0.04059	0.04567
200	0.00967	0.01355	0.01702	0.02090	0.02437	0.02784	0.03130	0.03536	0.04271	0.04964	0.05699	0.06435
250	0.01364	0.01872	0.02327	0.02834	0.03289	0.03744	0.04198	0.04831	0.05793	0.06702	0.07665	0.08627
300	0.01762	0.02389	0.02951	0.03578	0.04141	0.04704	0.05266	0.06126	0.07315	0.08440	0.09630	0.10820

QUICK SELECTION TABLE

HEIGHT		LENGTH												
300									300	400	550	650	800	1000
250							250	300	400	500	650	800	950	
200					200	250	300	400	500	600	800	1000	1200	
150			150	200	300	350	450	550	650	800	1000			
100		100	200	300	400	500	600	800	1000	1200				
m³/h														
100	Alc dB(A) Δ P		2,2 6 0,7	1,8 3 0,1										
200	Alc DB(A) Δ P		4,2 23 2,2	3,5 17 0,9	3,1 15 0,5									
300	Alc dB(A) Δ P		6,5 33 6,5	5,2 26 1,7	4,7 21 1,2	4,0 17 0,7	3,5 15 0,4							
400	Alc dB(A) Δ P			7,5 35 3,3	6,0 30 1,9	5,5 25 1,0	4,7 20 0,9	4,2 15 0,4						
500	Alc dB(A) Δ P			8,5 38 5,3	7,8 33 3,3	6,7 29 1,7	6,3 25 1,2	5,5 22 0,7	4,5 14 0,3					
600	Alc dB(A) Δ P				9,5 41 4,4	8,3 34 2,1	7,5 29 1,8	6,2 26 1,0	5,7 20 0,7	5,1 15 0,4				
700	Alc dB(A) Δ P				10,3 45 5,5	9,8 42 4,4	9,5 38 3,2	7,5 30 1,2	6,5 24 0,7	6,2 20 0,6				
800	Alc dB(A) Δ P					10,2 42 3,9	9,7 37 2,9	8,5 35 1,8	8,0 27 1,0	7,0 23 0,9				
900	Alc dB(A) Δ P					11,9 45 5,0	10,5 40 3,7	9,5 36 1,9	8,5 30 1,2	8,0 26 1.0	7,2 22 0,7			
1.000	Alc dB(A) Δ P					13,3 47 5,7	12,5 43 4,5	10,2 39 2,5	9,5 33 1,7	9,0 28 1,2	8,3 23 1	7,6 19 0,7		
1.200	Alc dB(A) Δ P						13,8 50 5,8	12,9 44 3,9	11,0 37 2,1	10,2 34 1,7	9,0 28 0,9	8,2 25 0,6	7,6 21 0,3	
1.400	Alc dB(A) Δ P							14,5 48 5,3	13,3 42 3,3	12,4 37 2,1	10,2 33 1,3	9,4 28 0,7	8,6 23 0,5	7,9 18 0,3
1.600	Alc dB(A) Δ P								15,2 45 4,2	14,2 40 2,9	11,8 35 1,8	10,3 30 0,9	9,4 25 0,7	8,6 21 0,4
1.800	Alc dB(A) Δ P								17,0 47 5,2	15,7 43 3,4	13,4 39 2,1	11,2 32 1,2	11,0 28 1,0	9,7 22 0,4
2.000	Alc dB(A) Δ P									18,2 52 4,4	15,3 45 2,8	13,4 37 1,5	12,6 34 1,2	10,6 27 0,7
2.200	Alc dB(A) Δ P									19,5 49 5,2	16,5 45 3,3	14,2 35 1,7	13,4 33 1,5	11,9 28 0,9
2.400	Alc dB(A) Δ P										19,1 47 3,7	16,5 37 1,9	15,1 34 1,7	13,1 29 1,2
2.600	Alc dB(A) Δ P										21,3 49 4,4	18,2 39 2,1	16,6 35 1,9	14,1 31 1,2
2.800	Alc DB(A) Δ P										22,1 50 5,0	20,6 41 2,8	18,2 37 2,1	15,9 33 1,7
3.000	Alc dB(A) Δ P											21,4 43 3,1	19,0 39 2,5	17,3 35 1,8
3.500	Alc dB(A) Δ P											25,2 47 3,9	22,2 44 3,4	19,7 39 2,3

Alc = For a residual velocity of 0.5 m/s.

dB(A) = Noise level of open blades without flow regulation.

Δ P = Static pressure drop mm c.a.

CORRECTION FACTORS		
Angle of divergence	*45º*	*90º*
Δ P = Tables x	1,1	1,5
dB(A) = Tables +	2	3
Alc = Tables x	0,7	0,5

GRAPHIC DESCRIPTION

Series	Model		Size
	100	1015	
L_TR 24V	110	1115	L x H
L_TR	200	2015	
	210	2115	

-

Finish
ALU
LB
RAL

+

Accessories	Fixing system
PLENUM	FO
	MM
	Drills

L200TR-300X200-ALU + MM

SERIES

- L_TR: Motorized linear grille.

MODEL

- L200TR: Motorized linear grille, dual deflection at 0° angle.

SIZE (mm)

- LxH: 300 x 200 mm.

FINISH

- Alu: Anodized aluminum.

FIXING SYSTEM (optional)

- MM: 300 x 200 mm mounting frame with pressure clips.

Order example: L200TR 300x200 ALU + MM

- To order a 300x200 mm motorized linear grille with a 25-mm perimeter frame, dual-deflection design, horizontal blades at 0° angle, and a second row of movable vertical blades, made in anodized aluminim with mounting frame, you should request:

Order	Description
Grille L200TR 300x200 – Anodized aluminum	300x200 mm motorized linear grille (220V) with a 25-mm perimeter frame, dual-deflection design, horizontal blades at 0° angle, and a second row of movable vertical blades, made in anodized aluminim.
Mounting frame MM 300x200	300x200 mm mounting frame.

Note: 220V is the standard model.

Order example: L100TR 500x100 – 24V + LB + DRILL

- To order a 500x100 mm motorized linear grille (24V) with a 25-mm perimeter frame, single-deflection design, horizontal blades at 0° angle, white laquered, for installation with drill and screws (screws not included), you should request:

Order	Description
Grille L100TR 500x100 - 24V - white laquered	500x100 mm motorized linear grille (24V) with a 25-mm perimeter frame, single-deflection design, horizontal blades at 0° angle, white laquered.
Fixing System DRILL	For installation with drill and screws.



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