WALL AND WINDOW LOUVRES





HOME OF OXYGEN

Duco Ventilation & Sun Control provides every building with a healthy supply of oxygen. With a comprehensive range of innovative natural and mechanical ventilation systems, either combined with external solar shading or otherwise, Duco offers the ultimate guarantee of a healthy and comfortable indoor climate. The occupant's health is,

therefore, central to Duco. A well-thought-out combination of basic ventilation, mechanical extraction, purge ventilation and solar shading ensures optimum air quality.

Duco provides an innovative solution for residential buildings, offices, schools or care centres where everyone feels at home.

Duco, Home of Oxygen



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DISCLAIMERIllustrations in this catalogue may differ from actual product. Printing errors and/or changes excepted. Duco reserves the right to amend this information at any time. The information stated is valid as at 24.11.2020 and may be subject to changes in legislation.

A SOLUTION FOR **EVERY SITUATION**

→ Any building situation

Duco has a wide range of natural air intake grilles for **both new buildings and refurbishment projects**. Depending on the type of louvre, Duco offers the following options:











Surfacemounted wall louvre

→ Finish

Each type of louvre grill is available in all colours: F1*, any RAL colour, textured paint, special paints/lacquers, etc. Each type

paints/lacquers, etc. Each type of louvre grille in this brochure complies with the Qualicoat or Qualanod quality specifications.

* Except DucoGrille Acoustic 150





→ Aesthetic

The many type of louvre blade (Z, S, V, etc.) ensure a suitable look in each project.







..

→ Vandalism and intrusion security

Solid louvre blades are very sturdy and 'vandal-proof'. The DucoGrille Solid++ is intrusion-resistant up to class

2, in accordance with the European standard.

→ Custom building

The height and width of each grille* can be determined to the mm.

Except DucoGrille Acoustic 150 and DucoGrille

→ Insect screen and vermin screen

With DucoGrille Solid louvre grilles with small punch slots (P1), the **perforated louvre blades** act as an insect screen. With all other types (Solid P2, Classic, Acoustic and Close), **2.3 x 2.3 mm stainless-steel mesh** is provided as standard. 6 x 6 mm or 20 x 20 mm mesh can be selected as an option.



P1



P2



Stainless-steel mesh

→ Ventilation capacity

Each louvre is extensively tested and optimised by Duco's R&D department. The 'High Performance' HP louvre blades in the DucoGrille Classic range ensure excellent airflow thanks to low resistance.

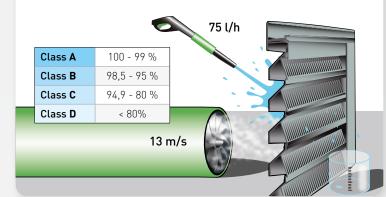




DucoGrille Classic G 50HP

→ Water resistance

All DucoGrille louvre grilles have been tested by **BSRIA** in accordance with watertightness tests developed in collaboration with HEVAC. The test simulates 75 litres per hour rainfall at a wind speed of 13 metres per second. Based on the air speed in the louvre and the % watertightness, the louvre is assigned a class.



→ Proof against penetration

DucoGrille Classic louvre grilles with **V-blades** are penetration-proof.

→ Sound absorption

DucoGrille Acoustic louvre blades are fitted on the inside with non-flammable mineral wool and are ideally suited for applications with high levels of noise intrusion.

→ Total solutions

DucoGrille louvres can be used in **residential and non-residential buildings**. Duco's total solutions for **WORK**, **SCHOOL** and **CARE** use **ventilative cooling** and **exterior solar shading** for a healthy, comfortable and energy-efficient indoor climate. Please consult the brochures on our website for more information.

The DucoGrille Close 105 and DucoGrille NightVent can also be integrated into Duco's fully automatic Tronic systems.

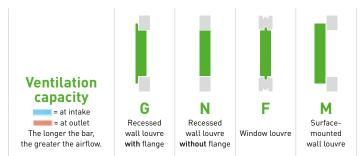






PRODUCTOVERVIEW

Duco has developed a wide range of ventilation grilles: burglar-resistant, penetration-proof, water-resistant, for large volume flows, sound-absorbing, etc. Duco can offer a tailored-made system in every case: **you name it, we have it!**



DUCOGRILLE SOLID								
Sturdy, vandal-proof / intrusion-res	sistant louvre	grilles with multiple	e, sleek dove	etailing Z-bl	ades.			
DucoGrille Solid 30Z			⊘	×	⊘	⊘	see p. 8	
DucoGrille Solid++ 30Z	₹ <mark>V</mark> RC2		⊘	×	×	⊘	see p. 10	
DucoGrille Solid ISO 30Z	₹ V RC2		×	×	⊘	x	see p. 11	

DUCOGRILLE CLASSIC							
Recessed wall or window louvres, wh	here the alun	ninium louvre blades	are clicked	d into place	on plastic b	lade holdei	rs.
DucoGrille Classic 20Z				×		×	see p. 12
DucoGrille Classic 20V			⊘	×	⊘	×	see p. 13
DucoGrille Classic 50Z			Ø	Ø	⊘	x	see p. 14
DucoGrille Classic 50S			⊘	⊘	⊘	x	see p. 15
DucoGrille Classic 50/75Z			Ø	Ø	⊘	×	see p. 16
DucoGrille Classic 50/75S			⊘	⊘	⊘	×	see p. 17
DucoGrille Classic 45HP	HP		Ø	Ø	⊘	x	see p. 18
DucoGrille Classic 50HP	HP		⊘		⊘	×	see p. 19
DucoGrille Classic 130HP	HP HP		Ø	Ø	×	×	see p. 20
DucoGrille Classic 70S			Ø	×	×	x	see p. 22
DucoGrille Classic 70V	;		•	x	x	x	see p. 23

Legend



vandal-proof.



resistant

class 2.

The grille is (optional-ly) burglar-resistant to







safety

The grille is pene

tration-proof.



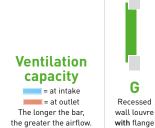


High Performance optimized for high





Can be used in projects with light or heavy (+) noise exposure









Surfacemounted wall louvre

DUCOGRILLE ACOUSTIC

Recessed wall louvres featuring sound-absorbing, non-flammable mineral wool

DucoGrille Acoustic 75Z			x	x	×	see p. 26
DucoGrille Acoustic 75L			x	x	x	see p. 26
DucoGrille Acoustic 150	∩ ⁺	⊘	⊘	×	×	see p. 27

DUCOGRILLE CLOSE

Adjustable ventilation grilles with manual or electronic operation

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DucoGrille Close 105	Ventilation capacity depending on internal and external louvre grille	x	×	x	x	see p. 28
DucoGrille Close 35Z		Ø	⊘		×	see p. 30
DucoGrille Close M 100		x	×	х	✓	see p. 31

DUCOGRILLE NIGHTVENT

Glass-replacing ventilation hatch with manual or electronic operation

DucoGrille NightVent















see p. 32

DUCOGRILLE TRANSFER

Supply grille for doors and walls

Installation in door or wall **DucoGrille Transfer** see p. 36 with/without counterframe

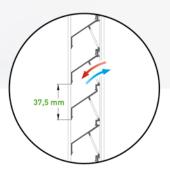
LOUVRE WALL SYSTEMS







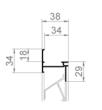
Vandal-proof



DucoGrille Solid 30Z

DucoGrille Solid 30Z louvre blades offer high ventilation capacity with relatively small louvre blades. The 'stackable' louvre blades form a single screen, making them extra strong and vandalproof.

The louvre blades are available with small slots (P1), large slots (P2) or as false louvres (NP) and provide a uniform façade design when combined in a single project.



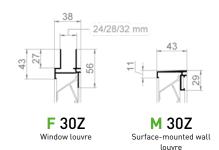


G 30Z Recessed wall louvre with flange

G 30Z Large Recessed wall louvre with extra large flange

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	G Large	F	M	
Louvre pitch	37,5				
Recess depth	34,4	31,9	-	-	
Frame rebate	18,2	40	-	-	
Frame depth	-	-	38	43	
Flange width	-	-	24/28/32	-	
Min. dimensions	min. W 200 x H 200				



VENTILATION VALUES

		P1	P2
Visual free passag	e	60 %	86 %
Physical free passage		34 %	48 %
Ce (higher is better)		0,24	0,28
Cd (higher is better)		0,23	0,28
K-FACTOR	INLET	17,70	12,85
(lower is better)	OUTLET	19,13	12,90

WATER RESISTANCE

WATER RESISTANCE					
Air velocity	Class				
Air velocity	P1	P2			
0 m/s	C (91,1%)	B (96,1%)			
0,5 m/s	C (83,5%)	B (95,9%)			
1 m/s	D (77,7%)	C (93,5%)			
1,5 m/s	D	C (87,6%)			
2 m/s	D	D (67,3%)			
2,5 m/s	D	D			

Slots

DucoGrille Solid 30Z is available with louvre blades with **small slots (P1)**, **large slots (P2)** or without slots as **false louvres (NP)**. Combining the two in the same project ensures a uniform appearance.

INSECT SCREEN

	Slots	P1	P2	NP
:			Stainless-steel mesh 2.3 x 2.3 mm STANDARD	
Resistant to		Perforated louvre blades as insect screen	Stainless-steel mesh 6 x 6 mm OPTIONAL	100 % false louvre
Re			Stainless-steel mesh 20 x 20 mm OPTIONAL	

Round version: MR 30Z

The **DucoGrille Solid MR 30Z** is a round surface-mounted wall louvre.

SIZES

	MR 30Z
Frame depth	35 mm
Min. / max. dimensions	min. dia. 300 mm max. Ø 1500 mm

Stainless-steel mesh is not available for round louvre grilles. All other dimensions and properties are the same as for the DucoGrille Solid M 30Z.







Burglar-resistant to class 2



DucoGrille Solid++ 30Z

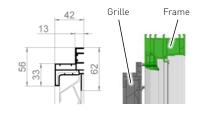
The DucoGrille Solid++ 30Z uses the same louvre blades as the Solid 30Z (P1 only), but with a reinforced frame section. This makes the louvre grilles intrusion resistant to Class 2, in accordance with the European standard.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	М	
Louvre pitch	37,5		
Recess depth	38,4	-	
Frame rebate	15 -		
Frame depth	- 42		
Min. dimensions	min. W 200 x H 200		



++ G 30Z Recessed wall louvre with flange



++ M 30Z Surface-mounted louvre grille for fitting on a frame

SPECIFICATIONS

The DucoGrille Solid++ 30Z is only available with P1 louvre blades. All specifications relating to ventilation capacity, water resistance and insect resistance are identical to the DucoGrille Solid 30Z P1 (see page 8).

DucoGrille Solid++ G 30Z has passed all the tests prescribed in the 'Burglar resistance Construction products' prEN 1627 to prEN 1630 draft standards for class 2 intrusion resistance.

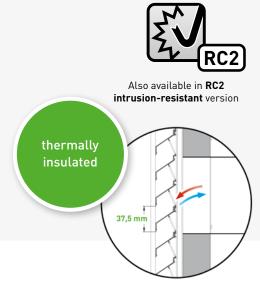
DucoGrille Solid++ M 30Z complies with standards EN 5096:2007 and EN 1627:2011

The complete test report is obtainable upon request: **G 30Z**: DE 651 XG 815 – CAR 8175 | **M 30Z**: SKG12.1036



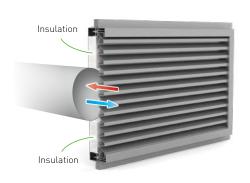






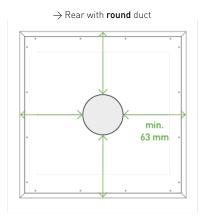
DucoGrille Solid ISO 30Z

The DucoGrille Solid ISO 30Z is an architectural and thermally insulated window louvre. The window louvre can be connected to both round and rectangular air ducts. Available as an option with reinforced frame section for intrusion resistance up to class 2.



DIMENSIONS AND SPECIFICATIONS

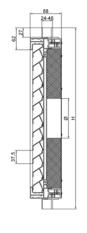
Frame depth	88 mm (with thermal break)		
Flange width	24 / 28 / 32 / 36 / 40 / 44 / 48 mm		
Duct connection	Round or rectangular, any dimension		
Grille dimensions	Louvre grille height = duct height + 2 x 63 mm min. Grille width = duct width + 2 x 63 mm min. Min. W 300 x H 300 mm Max. 2500 mm high / wide if other dimension < 1250 mm		
U-value	0.9 W/m²K		

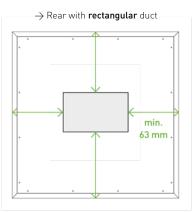


SPECIFICATIONS

The DucoGrille Solid ISO 30Z is available with P1 and P2 louvre blades. All

specifications relating to ventilation capacity and water resistance are identical to the corresponding DucoGrille Solid 30Z models (see page 8).











DucoGrille Classic 20Z

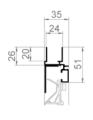
DucoGrille Classic 20Z consists of two different types: a recessed wall louvre (G) and an architectural window louvre (F). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The "Z"-shaped louvre blade produces a sleek design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	F
Louvre pitch	35	
Recess depth	30	-
Frame rebate	19	-
Flange width	- 24	
Frame depth	- 35	
Min. dimensions	min. W 200 x H 200	



G 20Z Recessed wall louvre



F 20Z

VENTILATION VALUES

Visual free passag	e	63 %
Physical free passage		41 %
Ce (higher is better)		0,21
Cd (higher is better)		0,18
K-FACTOR	INLET	22,73
(lower is better)	OUTLET	30,52

WATER RESISTANCE

Air velocity	Class
0 m/s	C (94,87%)
0,5 m/s	C (93,15%)
1 m/s	D
1,5 m/s	D (75,4%)
2 m/s	D
2,5 m/s	D

Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
OFTION	Stainless-steel mesh 20 x 20 mm

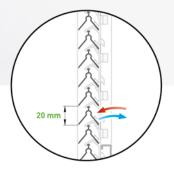








Good water resistance Penetration safety

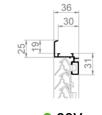


DucoGrille Classic 20V

DucoGrille Classic 20V consists of two different types: a recessed wall louvre (G) and an architectural window louvre (F). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The "V"-shaped louvre blade produces a sleek design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	F
Louvre pitch	20	
Recess depth	30	-
Frame rebate	19	-
Flange width	-	24
Frame depth	- 35	
Min. dimensions	min. W 200 x H 200	





G 20V Recessed wall louvre with flange

F 20V

VENTILATION VALUES

VERTILATION VALUES		
Visual free passage		95 %
Physical free passage		34 %
Ce (higher is better)		0,15
Cd (higher is better)		0,15
K-FACTOR	INLET	42,93
(lower is better)	OUTLET	47,1

WATER RESISTANCE

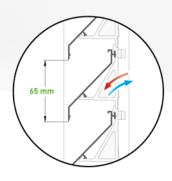
Air velocity	Class
0 m/s	A (99,0%)
0,5 m/s	В
1 m/s	C (91,5%)
1,5 m/s	С
2 m/s	С
2,5 m/s	D

Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
UPTION	Stainless-steel mesh 20 x 20 mm



 [→] Dimensions & order information: see page 41
 → Full specifications: see page 42





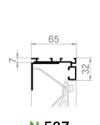
DucoGrille Classic 50Z

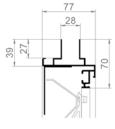
DucoGrille Classic 50Z consists of three different types: a recessed wall louvre (G with flange, N without flange) and an architectural window louvre (F). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The "Z"-shaped louvre blade produces a sleek design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N	F	
Louvre pitch	65			
Recess depth	62 65 -			
Frame rebate	48	0	-	
Flange width	28		28	
Frame depth	77		77	
Min. dimensions	min. W 300 x H 300			







N 50Z Recessed wall louvre without flange

F 50Z Window louvre

VENTILATION VALUES

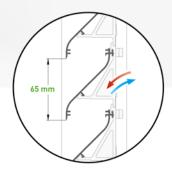
VENTILATION V	ALULJ	
Visual free passage		75 %
Physical free passage		47 %
Ce (higher is better)		0,23
Cd (higher is better)		0,20
K-FACTOR	INLET	19,00
(lower is better)	OUTLET	25,17

WATER RESISTANCE 🐪

Air velocity	Class
0 m/s	В
0,5 m/s	B (96,55%)
1 m/s	C (94,09%)
1,5 m/s	C (91,71%)
2 m/s	D
2,5 m/s	D

Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
UPTION	Stainless-steel mesh 20 x 20 mm



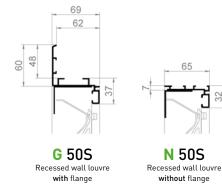


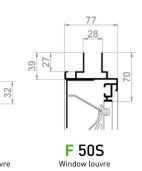
DucoGrille Classic 50S

DucoGrille Classic 50S consists of three different types: a recessed wall louvre (G with flange, N without flange) and an architectural window louvre (F). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The "S"-shaped louvre blade produces a stylish design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N	F
Louvre pitch	65		
Recess depth	62	65	-
Frame rebate	48	0	-
Flange width	-	-	28
Frame depth	-	-	77
Min. dimensions	min. W 300 x H 300		





VENTILATION VALUES

Visual free passage		75 %	
Physical free passage		47 %	
Ce (higher is better)		0,24	
Cd (higher is better)		0,21	
K-FACTOR INLET		17,38	
(lower is better)	OUTLET	23,48	

WATER RESISTANCE 🐪

Air velocity	Class
0 m/s	В
0,5 m/s	B (96,55%)
1 m/s	C (94,09%)
1,5 m/s	C (91,71%)
2 m/s	D
2,5 m/s	D

Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
OPTION	Stainless-steel mesh 20 x 20 mm





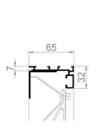
DucoGrille Classic 50/75Z

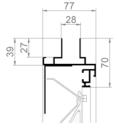
DucoGrille Classic 50/75Z consists of three different types: a recessed wall louvre (G with flange, N without flange) and an architectural window louvre (F). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The "Z"-shaped louvre blade produces a sleek design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N	F
Louvre pitch	75		
Recess depth	62	65	-
Frame rebate	48	0	-
Flange width	-	-	28
Frame depth	-	-	77
Min. dimensions	min. W 300 x H 300		







N 50/75Z Recessed wall louvre without flange

F 50/75Z Window louvre

VENTILATION VALUES

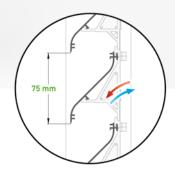
Visual free passage		80 %	
Physical free passage		49 %	
Ce (higher is better)		0,33	
Cd (higher is better)		0,27	
K-FACTOR	INLET	9,00	
(lower is better)	OUTLET	13,87	

WATER RESISTANCE

Air velocity	Class
0 m/s	B (98.6%)
0,5 m/s	С
1 m/s	C (94.7%)
1,5 m/s	С
2 m/s	C (82.2%)
2,5 m/s	D

STANDA Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
UPTION	Stainless-steel mesh 20 x 20 mm



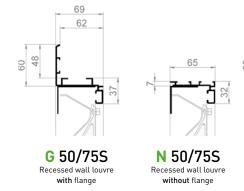


DucoGrille **Classic** 50/75S

DucoGrille Classic 50/75S consists of three different types: a recessed wall louvre (G with flange, N without flange) and an architectural window louvre (F). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The "S"-shaped louvre blade produces a stylish design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N	F
Louvre pitch		75	
Recess depth	62	65	-
Frame rebate	48	0	-
Flange width	-	-	28
Frame depth	-	-	77
Min. dimensions	min. W 300 x H 300		



WATER RESISTANCE 🐪

Visual free passage		80 %	
Physical free passage		49 %	
Ce (higher is better)		0,34	
Cd (higher is better)		0,27	
K-FACTOR	INLET	8,75	
(lower is better)	OUTLET	13,62	

VENTILATION VALUES

Air velocity	Class
0 m/s	B (98.6%)
0,5 m/s	С
1 m/s	C (94.7%)
1,5 m/s	С
2 m/s	C (82.2%)
2,5 m/s	D

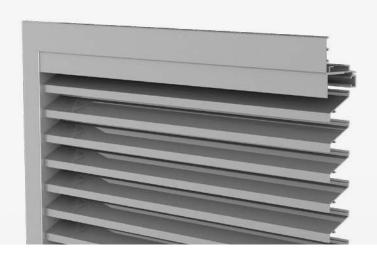
INSECT SCREEN



F 50/75S

Window louvre







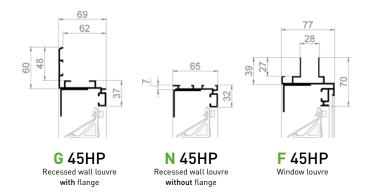


DucoGrille Classic 45HP

The DucoGrille Classic 45HP combines excellent airflow with a "Z"-shaped louvre blade for a sleek design. As a result, the DucoGrille Classic 45HP can be used for intensive ventilation in projects with specific aesthetic requirements. All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N	F
Louvre pitch		50	
Recess depth	62	65	-
Frame rebate	48	0	-
Flange width	-	-	28
Frame depth	-	-	77
Min. dimensions	min. W 250 x H 250		



VENTILATION VALUES

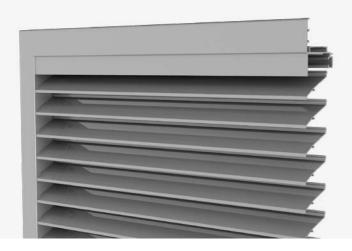
Visual free passage		70 %
Physical free passage		60 %
Ce (higher is better)		0,28
Cd (higher is better)		0,39
K-FACTOR INLET		12,66
(lower is better)	OUTLET	6,68

WATER RESISTANCE 🐪

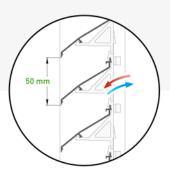
Air velocity	Class
0 m/s	В
0,5 m/s	В
1 m/s	С
1,5 m/s	С
2 m/s	С
2,5 m/s	D

STANDA Stainless mesh 2.3		
OPTION	Stainless-steel mesh 6 x 6 mm	
UPTION	Stainless-steel mesh 20 x 20 mm	







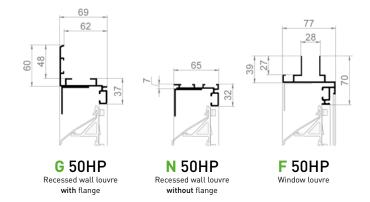


DucoGrille Classic 50HP

The DucoGrille Classic 50HP has been specially developed **for intensive ventilation**. The uniquely shaped 'High Performance' louvre blade with a low resistance factor ensures **excellent airflow**. All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N	F
Louvre pitch	50		
Recess depth	62	65	-
Frame rebate	48	0	-
Flange width	-	-	28
Frame depth	-	-	77
Min. dimensions	min. W 250 x H 250		



VENTILATION VALUES

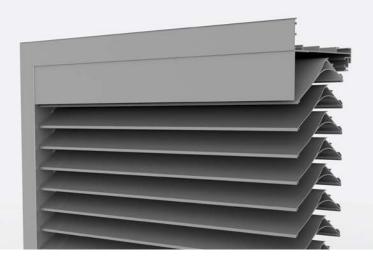
Visual free passage		88 %
Physical free passage		68 %
Ce (higher is better)		0,46
Cd (higher is better)		0,47
K-FACTOR INLET		4,7
(lower is better) OUTLET		4,55

WATER RESISTANCE 🐪

Air velocity	Class
0 m/s	C (92,3%)
0,5 m/s	C (89,8%)
1 m/s	C (86,5%)
1,5 m/s	D (79,7%)
2 m/s	D
2,5 m/s	D





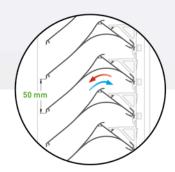




High Performance



Excellent water resistance



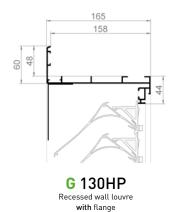
DucoGrille Classic 130HP

The DucoGrille Classic 130HP has been specially developed for intensive ventilation. The uniquely shaped 'High Performance' louvre blade with a low resistance factor provides a combination of very good airflow together with excellent water resistance (class A). All types are manufactured from extruded aluminium sections. Insect mesh is fitted as standard.



FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N
Louvre pitch	5	0
Recess depth	158	165
Frame rebate	48 0	
Min. dimensions	min. W 250 x H 250	



165

N 130HP Recessed wall louvre without flange

VENTILATION VALUES

Visual free passage		88 %
Physical free passage		70 %
Ce (higher is better)		0,34
Cd (higher is better)		0,27
K-FACTOR INLET		8,55
(lower is better)	OUTLET	13,42

WATER RESISTANCE

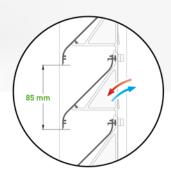
Air velocity	Class
0 m/s	Α
0,5 m/s	Α
1 m/s	Α
1,5 m/s	Α
2 m/s	Α
2,5 m/s	Α

Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
OFTION	Stainless-steel mesh 20 x 20 mm









DucoGrille Classic 70S

DucoGrille Classic G 70S is a recessed wall louvre manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The unique "S"-shaped louvre blade produces a stylish design.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G
Louvre pitch	85
Recess depth	82
Frame rebate	48
Min. dimensions	min. W 300 x H 300



VENTILATION VALUES

Visual free passage		79 %
Physical free passage		47 %
Ce (higher is better)		0,24
Cd (higher is better)		0,24
K-FACTOR INLET		16,80
(lower is better)	OUTLET	18,00

WATER RESISTANCE

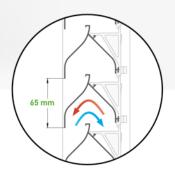
Air velocity	Class
0 m/s	В
0,5 m/s	С
1 m/s	C (94,27%)
1,5 m/s	С
2 m/s	C (84,90%)
2,5 m/s	D

Stainless mesh 2.3			
OPTION	Stainless-steel mesh 6 x 6 mm		
OPTION	Stainless-steel mesh 20 x 20 mm		









DucoGrille Classic 70V

DucoGrille Classic G 70V is a recessed wall louvre manufactured from extruded aluminium sections. Insect mesh is fitted as standard. The unique "V"-shaped blade ensures better water resistance and makes the louvre grille 'penetration-proof' and difficult to see through from the outside.

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G
Louvre pitch	65
Recess depth	82
Frame rebate	48
Min. dimensions	min. W 300 x H 300



VENTILATION VALUES

Visual free passage		65 %
Physical free passage		36 %
Ce (higher is better)		0,12
Cd (higher is better)		0,11
K-FACTOR	INLET	72,79
(lower is better)	OUTLET	83,88

WATER RESISTANCE 😯

Air velocity	Class
0 m/s	Α
0,5 m/s	B (98,98%)
1 m/s	B (95,53%)
1,5 m/s	C (80,43%)
2 m/s	D
2,5 m/s	D

Stainless mesh 2.3			
OPTION	Stainless-steel mesh 6 x 6 mm		
UPTION	Stainless-steel mesh 20 x 20 mm		



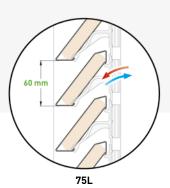






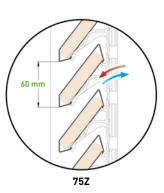


Suitable for moderate noise levels



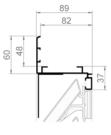
DucoGrille **Acoustic 75Z & 75L**

DucoGrille Acoustic G 75Z & G 75L are sound-absorbing recessed wall louvres manufactured from extruded aluminium sections. One type of louvre blade offers the option of two different looks: Z and L. The louvre blades have sound-absorbing, non-flammable mineral wool inside.



FRAME TYPES AND DIMENSIONS

Dimensions in mm	G
Louvre pitch	60
Recess depth	82
Frame rebate	48
Min. dimensions	min. W 250 x H 250



G 75Z **G** 75L Recessed wall louvre Recessed wall louvre with flange with flange

SOUND **ABSORPTION**

Attenuation value Rw (C;Ctr) in dB		
75Z	75L	
6 (0;-1)	6 (0;-2)	

VENTILATION VALUES

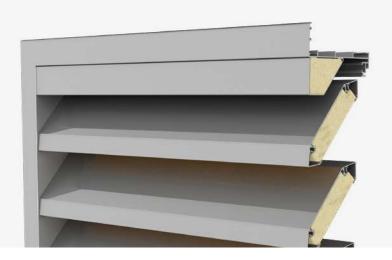
		75Z	75L
Visual free passage		76 %	95 %
Physical free passage		28 %	28 %
Ce (higher is better)		0,24	0,25
Cd (higher is better)		0,21	0,29
K-FACTOR	INLET	16,93	16,52
(lower is better)	OUTLET	21,83	12,14

WATER RESISTANCE

WATER RESISTANCE		
Air veloc-	Class	
ity	75Z	75L
0 m/s	B (97,8%)	B (97,2%)
0,5 m/s	B (95,1%)	C (93,9%)
1 m/s	C (89,4%)	C (88,2%)
1,5 m/s	D (77,3%)	D (75,0%)
2 m/s	D	D
2,5 m/s	D	D

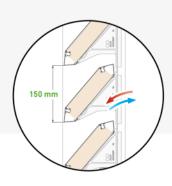








Suitable for high noise levels



DucoGrille Acoustic 150

The DucoGrille Acoustic G150 / N150 is a soundabsorbing built-in wall louvre manufactured from extruded aluminium sections. The louvre blades have sound-absorbing, non-flammable mineral wool inside. Thanks to its heavy-duty construction, the DucoGrille Acoustic G150 / N150 has a high attenuation value plus a low resistance factor (and consequently better flow rates).

The **Duco Acoustic Panel 300** enables Duco to provide special project systems. This tailor-made module with a double row of Acoustic 150 louvre blades achieves a very high

attenuation value Rw (C;Ctr) of 17 (-1;-4) dB.



Frequency (Hz)	Octave band value (dB)
63	6,1
125	5,7
250	5,8
500	13,8
1000	22,7
2000	22,8
4000	20,9

FRAME TYPES AND DIMENSIONS

Dimensions in mm	G	N
Louvre pitch	150	
Recess depth	158 165	
Frame rebate	48 0	
Min. dimensions	min. W 250 x H 250	



G 150 Recessed wall louvre with flange



N 150 Recessed wall louvre without flange

SOUND ABSORPTION



VENTILATION VALUES

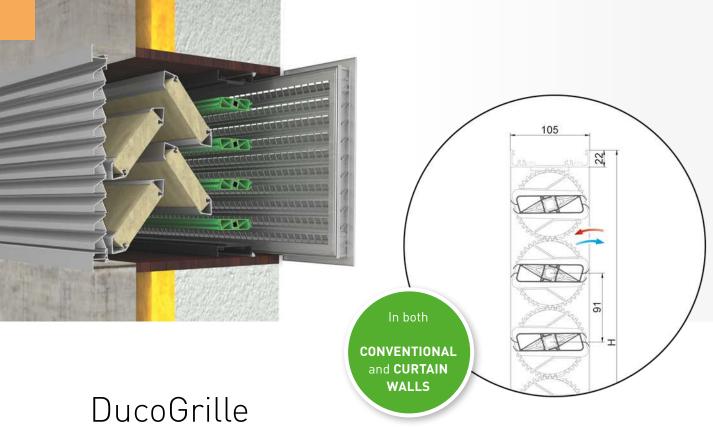
Visual free passag	е	74 %
Physical free passage		35 %
Ce (higher is better)		0,30
Cd (higher is better)		0,30
K-FACTOR	INLET	11,04
(lower is better)	OUTLET	10,96

WATER RESISTANCE

Air velocity	Class
0 m/s	В
0,5 m/s	С
1 m/s	С
1,5 m/s	С
2 m/s	D
2,5 m/s	D

Stainless mesh 2.3	
OPTION	Stainless-steel mesh 6 x 6 mm
UPTION	Stainless-steel mesh 20 x 20 mm





DucoGrille Close 105

The DucoGrille Close 105 is an actuator-controlled multileaf damper with a large airflow tailored to offices and schools. The multileaf damper can be used as both a supply and exhaust grille. The DucoGrille Close 105 can be built into a wall or curtain wall and a wall louvre on both sides, which may or may not be burglar-proof, ensures an aesthetic finish. With a limited depth of just 105 mm, the multileaf damper can easily be installed in smaller rooms, both horizontally and vertically.



→ DucoGrille Close 105 in curtain wall

What is more, the multileaf damper can also act as an **adjustable central extract unit**, combined for instance with Duco's roof cowls.

Thanks to the high flow rate, the DucoGrille Close 105 is also ideal for use in providing intensive ventilation or as part of the (night) cooling systems of a building.

The DucoGrille Close 105 can be configured **different types of motor** (including **Spring Return** motors as well).

VENTILATION VALUES

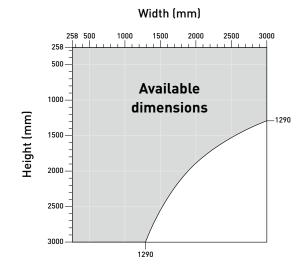
Visual free passage		74 %*
Physical free passage		74 %*
Ce (higher is better)		0,62*
Cd (higher is better)		0,62*
K-FACTOR	INLET	2,57*
(lower is better)	OUTLET	2,57*

^{*} Values measured without internal and external louvre grille.

PRE-ASSEMBLY The DucoGrille Close 105 is available 'pre-assembled' with the DucoGrille Solid 30Z external louvre grille in two types: 6 30Z (recessed wall louvre with flange) and F 30Z (window louvre). This pre-assembled external louvre grille with multileaf damper can be installed quickly and easily.

FRAME TYPES AND DIMENSIONS

Sizes	min. 258 mm up to max. of 3000 mm (incremental by 1 mm) Width and height interdependent, se graph opposite	
Depth	105 mm	
Louvre pitch	91 mm	
Ventilation	805 l/s/m² at 1 Pa 1200 l/s/m² at 2 Pa	
Air density (in closed position)	Qn50 = 0.79 m³/h/m	
Water-tightness (in closed position)	Watertight (EN 1027)	
Attenuation value 🞧	Rw (C;Ctr) = up to 13 (0,-3)*	
Insulation value	U < 1 W/m²K	
Motor noise	35 dB(A) - 45 dB(A)	
Operating temperature	-25 °C up to +60 °C	
Control	Actuator / BMS	
Motors	Different types, please refer to the technical data sheet at www.duco.eu	



* Value with Solid 30Z P1 + DucoGrille Close 105 + 2 x Duco Acoustic Module 150 + Solid 30Z P2





Ventilation grille

The DucoGrille Close 105 can be combined with DucoGrille Solid and DucoGrille Classic louvre grilles on the inside and outside.



Close 105 multileaf damper

The DucoGrille Close 105 can be fully automatic based on CO₂ and temperature measurements by connecting with Duco's Tronic (Plus) Systems or with a building management system (BMS).



Acoustic module

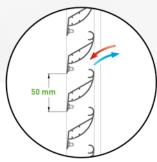
Louvre blades provided with sustainable acoustic sound-absorbing material (non-flammable mineral wool) can be fitted before or after the multileaf damper. This ensures that the acoustic value of the ventilation intake or exhaust can be increased. Depending on the requirements, a single row of louvre blades can be fitted or a double row for optimum sound absorbency.

Rw (C;C _{tr})
louvre	row of blades
	e row of

12 (0;-2) dB

Octave band values (dB)		
Frequency (Hz)	single row of louvre blades	double row of louvre blades
63	7,7	8
125	3,8	5,7
250	2,6	3,6
500	4,4	6,7
1000	8,2	13,3
2000	12,6	20,9
4000	11,4	19,2





DucoGrille Close 35Z

DucoGrille Close G 35Z and N 35Z are closable recessed wall louvres manufactured from extruded aluminium sections. The DucoGrille Close is also available as a closable window louvre (F 35Z), ideal when using Night Cooling. The unique "Z"-shaped louvre blades provide adjustable ventilation via manual or electric operation.



→ Manual stepless operation: left, centre or right of the grille, as preferred

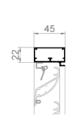
FRAME TYPES AND DIMENSIONS

	Dimensions in mm	G	N	F
Louvre pitch	1		50	
Recess dept	th	45	45	-
Frame rebate		20	0	-
Flange width		-	-	24/28
Frame dept	h	-	-	45
Minimum	MANUAL OPERATION	224*	224*	264*
height	ELECTRONIC OPERATION	524*	524*	564*

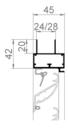
^{*} height to be determined in 50-mm steps



G 35Z Recessed wall louvre with flange



N 35Z Recessed wall louvre without flange



F 35Z

VENTILATION VALUES

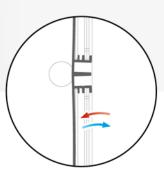
VENTILATION VA	ALULJ	
Visual free passage		51 %
Physical free passage		39 %
Ce (higher is better)		0,18
Cd (higher is better)		0,21
K-FACTOR	INLET	30,38
(lower is better)	OUTLET	23,67

WATER RESISTANCE 🐪

Air velocity	Class
0 m/s	B (98,25%)
0,5 m/s	B (96,52%)
1 m/s	C (88,82%)
1,5 m/s	D (39,83%)
2 m/s	D
2,5 m/s	D

STANDA Stainless mesh 2.3		
OPTION	Stainless-steel mesh 6 x 6 mm	
UPTION	Stainless-steel mesh 20 x 20 mm	





DucoGrille Close M 100

DucoGrille Close M 100 is a closable surface-mounted internal louvre manufactured from extruded aluminium sections. The plastic slides provide **adjustable ventilation**. The DucoGrille Close M 100 is available as standard with heights of 200 or 300 mm and the width can vary up to a maximum of 1,000 mm.

DIMENSIONS

Frame depth	13 mm
Height of the grille	200 or 300 mm
Width of the grille	max.: 1000 mm



VENTILATION VALUES

Visual free passag	28 %	
Physical free pass	28 %	
Ce (higher is better)	0,11	
Cd (higher is better)	0,11	
K-FACTOR	INLET	88,43
(lower is better)	OUTLET	89,43

AIRFLOW

Dimension	200 x 200	300 x 300		
Airflow at 1 Pa (m³/h)	19,76	44,48		
Airflow at 2 Pa (m³/h)	27,96	62,90		







DucoGrille **NightVent**

The DucoGrille NightVent is a **glass-replacing ventilation hatch** that provides efficient cooling of any building thanks to the supply of **large ventilation flow rates**.

The ventilation hatch consists of **a single module**, although it contains two essential components. From outside, the DucoGrille NightVent is protected by a window louvre with perforated louvre blades (**DucoGrille Solid 30Z P1**) that act as an insect screen. On the inside, **an insulated opening panel** with a flat-finished inner panel makes for easy integration into the interior. In addition, the **acoustic attenuation** ensures that the thermal value of the ventilation hatch is comparable to that of a closed window.

The ventilation hatch can be **hinged horizontally or vertically**. The inner and outer panels can be finished in various colours. DucoGrille NightVent is available in **motorised and manual versions**.

The DucoGrille NightVent has been tested under the applicable European regulations by means of intensive tests covering wind and water resistance. In addition, the external louvre grille is also available in a vandal-proof or intrusion-resistant version **up to RC2 class**.

VENTILATION VALUES

Visual free passag	60 %		
Physical free pass	34 %		
Ce (higher is better)	0,2		
Cd (higher is better)	0,2		
K-FACTOR	INLET	24,51	
(lower is better)	OUTLET	24,51	

WATER RESISTANCE

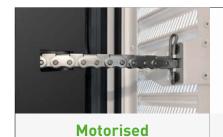
Air velocity	Class
0 m/s	Α
0,5 m/s	В
1 m/s	С
1,5 m/s	D
2 m/s	D
2,5 m/s	D

INSECT SCREEN

Fine punching keeps insects out. Stainless steel mesh can be fitted as an option.



DIMENSIONS AND SPECIFICATIONS





Manual

Louvre pitch	37,5 mm					
Flange width	24 / 28 / 32 / 36 / 40 / 44 / 48					
Frame depth	115	mm				
Ventilation	369 l/s/n	n² at 2 Pa				
Air density (when closed)	Qn50 = 4,5 m ³ /h/m ²					
Water resistance (when closed)	Class 9a (EN 12208-EN1027)					
Attenuation value	Rw open position (C;Ctr) = 10 (0,-1) dB Rw closed position (C;Ctr) = 33 (-1,-4) dB					
Insulation value	U = 1.5	W/m²K				
Motor noise	< 35 dB (A)	n/a				
Operating temperature	-25 °C up to +60 °C	n/a				
Min. / max. dimensions	see tables on p. 34					
Operation	^	^				

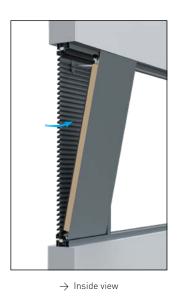
If a motorised system is chosen, an actuator can open/ close the ventilation hatch via a wired or wireless User controller, or fully automatically based on CO, and temperature measurements (if used in a Duco Tronic (Plus) System). The ventilation hatch can therefore be opened at any time, even if no one is in. In addition, the DucoGrille NightVent can be linked to the



With the manual version, the ventilation hatch is fitted with one or two handles.



building management system [BMS].









INTRUSION RESISTANT

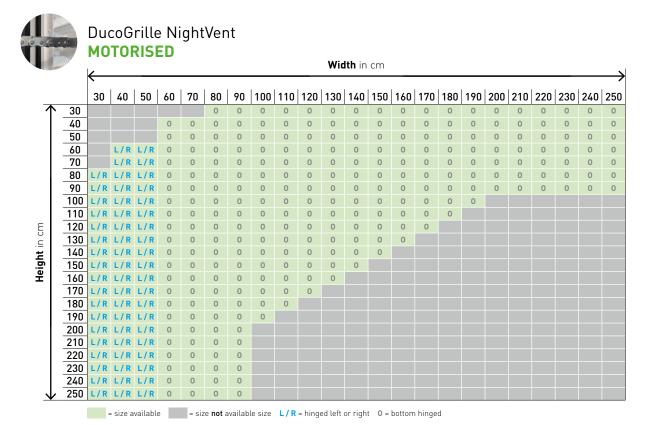
The DucoGrille NightVent is vandal-proof and can be specified as an option in an intrusion-resistant version to class RC2 (to EN 5096:2007 & EN 1627:2011).

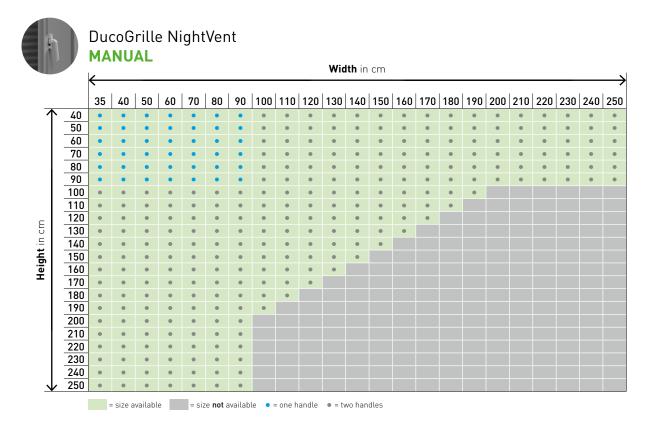


 [→] Dimensions & order information: see page 41
 → Full specifications: see page 42

Available dimensions

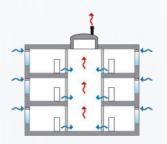
The minimum and maximum dimensions of the DucoGrille NightVent are dependent on the version.





VENTILATIVE COOLING

'Free cooling' by means of intensive ventilation

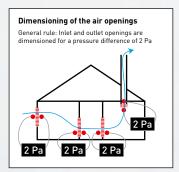


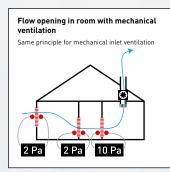
Airtight construction and good insulation not only result in lower heat demand, they also increase the demand for **cooling in a building**. Certainly during the warmer (summer) months, the indoor temperature can soar. **Summer comfort** is

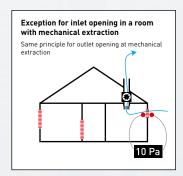
therefore increasingly being included in the design requirements of buildings.

This is because by using **high flow rates** of outside air (intensive ventilation), a building can achieve optimum cooling using ventilative cooling (free cooling). That means **without air conditioning** or other artificial means, provided one or two guidelines are followed:

- A Always use ventilative cooling combined with good exterior solar shading.
- B When designing the building, allow for sufficient thermal mass in the building to store the cooling effects of the outside air.
- C Use the correct pressure drop when sizing the inlet grilles.









DUCO'S SOLUTIONS





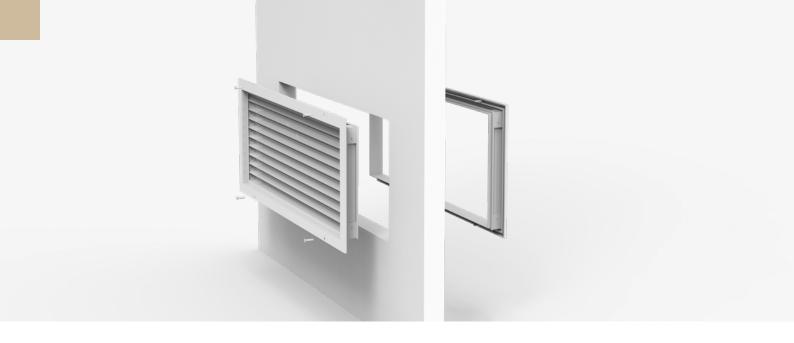
Duco's extensive range of (controlled) wall and window louvres, louvre walls and

DucoGrille NightVent

DucoGrille Close 105

exterior solar shading are excellent aids within the overall ventilative cooling strategy. Contact your Duco adviser for more information.

We will gladly provide you with tailored advice!



DucoGrille **Transfer**

This supply grille with 20V louvre blades can easily be installed in **doors and walls**. The **frame depth can be adjusted**. The grille can be fitted **with or without a counterframe**. The DucoGrille Transfer is ideally suited for **larger airflows** between interior spaces, but can also be used between interior and exterior spaces (e.g. exterior doors).

The DucoGrille Transfer will also shortly be available in an acoustic variant.

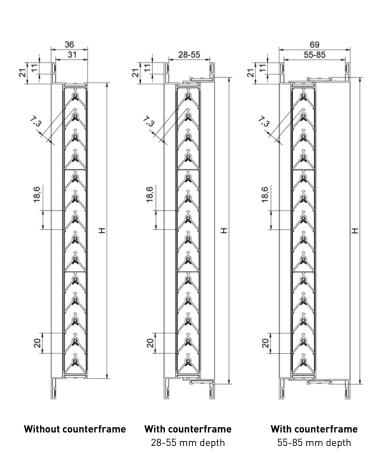
FRAME TYPES AND DIMENSIONS

Dimensions in mm

Louvre pitch	20
Recess depth (with counterframe)	28 - 84 mm
Frame rebate	21 mm

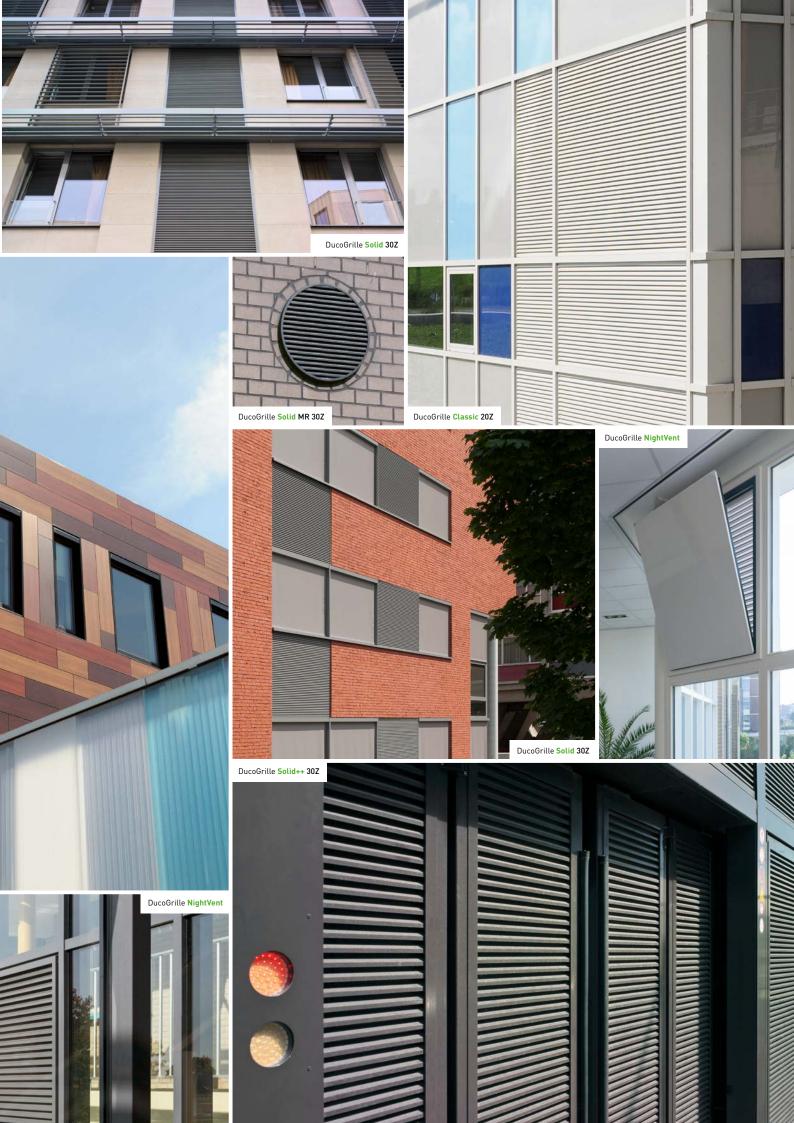
VENTILATION VALUES

Visual free passag	95 %	
Physical free passa	34 %	
Ce (higher is better)	0,15	
Cd (higher is better)	0,15	
K-FACTOR	INLET	42,93
(lower is better)	OUTLET	47,10









SERVICE PLEASE!

To provide the best support for your project, you will find sectional drawings, technical data sheets, specification texts and assembly instructions on our website: www.duco.eu.

Find out what Duco can do for you.



$\textbf{Calculating airflow} \rightarrow \underline{\text{airflowcalculation.duco.eu}}$

Calculate the required air flow rates, area or pressure differences for each type of louvre grille with this handy online tool.



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TAILORED ADVICE

Duco offers tailored expertise & services for specifiers, and has a dedicated unit to advise and support architects, engineering offices and consultancies. Duco works with reputable organisations such as the WTCB, the von Karman Institute, etc. Duco's knowledge and years of experience enable an appropriate solution to be offered for each of your projects.

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DIMENSIONS AND ORDERING INFORMATION

Grille type	Grille size = ORDER SIZE	Mounting
G Recessed wall louvres with flange	Dimension of louvre without flange (installation dimension) = (Width - 10 mm) × (Height - 10 mm) of the wall opening	Fixing dowels included as standard. Allow 5 mm clearance
N Recessed wall louvre without flange	Dimension of louvre (installation dimension) = (Width - 10 mm) × (Height - 10 mm) of the wall opening	(all round) between opening in wall and frame for fixing.
M Surface-mounted wall louvres	Total Width × total Height of the louvre grille (overall dimension) (MR: diameter of the louvre)	Screws and plugs included as standard
F Window louvres + DucoGrille NightVent	Total Width × total Height of the louvre grille (overall dimension)	Recessed mounting in window section
DucoGrille Close 105	Total Width x total Height of the louvre grille (overall dimension)	To be provided by customer
DucoGrille Transfer	Dimension of louvre without flange (installation dimension) = (Width — 10 mm)× (Height — 10 mm) of the wall/door opening	To be provided by customer

TECHNICAL VALUES TABLE

VALUES 1	ADLE	DUCOGRILLE SOLID						DUCOGRILLE CLASSIC						
	Solid 30Z			Solid++ 30Z see p. 10	Solid ISO 30Z see p. 11		Classic 20Z	Classic 20V	Classic 50Z	Classic 50S	Classic 50/75Z	Classic 50/75S		
→ Ventilation v			500		202 -			p. 12	p. 13	p. 14	p. 15	p. 16	p. 17	
Proper	rty	Unit	P1	P2	NP	P1	P1	P2						
Visual free passage		%	60	86	0	60	60	86	63	95	75	75	80	80
Physical free passage		%	34	48	0	34	34	48	41	34	47	47	49	49
K factor, intake (lower is better K factor, outlet (lower is better			17,7 19,13	12,85 12,9	n/a n/a	17,7 19,13	17,7 19,13	12,85 12,9	22,73 30,52	42,93 47,1	19 25,17	17,38 23,48	9 13,87	8,75 13,62
K factor, outlet (lower is better) Ce (higher is better)	-]		19,13 0,24	0,28	n/a n/a	19,13 0,24	19,13 0,24	0,28	30,52 0,21	47,1 0,15	0,23	0,24	0,33	0,34
Cd (higher is better)			0,23	0,28	n/a	0,23	0,23	0,28	0,18	0,15	0,2	0,21	0,27	0,27
→ Water resis (with insect screen)														
Prope		Unit	P1	P2	NP	P1	P1	P2						
Water resistance for v = 0 m/	/s	class	C (91,11)	B (96,09)	n/a	C (91,11)	C (91,11)	B (96,09)	C (94,87)	A (99,0)	В	В	B (98,6)	B (98,6)
Water resistance for v = 0.5 r	m/s	class	C [83,47]	B (95,90)	n/a	C (83,47)	C [83,47]	B (95,90)	C (93,15)	В	B (96,55)	B (96,55)	С	С
Water resistance for v = 1.0 r	m/s	class	D (77,65)	C (93,53)	n/a	D (77,65)	D (77,65)	C [93,53]	D	C (91,5)	C [94,09]	C [94,09]	C [94,7]	C [94,7]
Water resistance for v = 1.5 r	m/s	class	D	С	n/a	D	D	С	D (85.4)	(91,5) C	С	С	(94,7) C	(94,7) C
Water resistance for v = 2.0 r		class	D	(87,57) D	n/a	D	D	(87,57) D	(75,4) D	С	(91,71) D	(91,71) D	С	С
	-			(67,28)				[67,28]					[82,2]	[82,2]
Water resistance for v = 2.5 r	m/s	class	D	D	n/a	D	D	D	D	D	D	D	D	D
→ Sound redu	oction		P1	P2	NP	P1	P1	P2						
Rw	Jotanon	dB	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C _{tr}	1405.11		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Octave band values	at 125 Hz at 250 Hz	dB dB	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a
	at 500 Hz	dB	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	at 1000 Hz	dB	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	at 2000 Hz at 4000 Hz	dB dB	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a
→ Frame type:								II/a	II/d	II/a	II/d	II/d	II/d	
Proper	rty	Unit	P1	P2	NP	P1	P1	P2	05	00	45	45	85	85
Louvre pitch Recessed wall	Recess depth	mm	G: 34	37,5 ,4 / G Large	2: 31,9	37,5 38,4	37		35 30	20 30	65 62	65 62	75 62	75 62
G louvre with flange	Frame rebate	mm		8,2 / G Larg		15	3	c	19	19	48	48	48	48
N Recessed wall louvre without flange	Recess depth	mm		×		×	3	K	ж	x	65	65	65	65
	Frame rebate Flange width	mm						86/40/44/48	24	24	0 28	0 28	0 28	0 28
F Window louvre	Frame depth	mm		24/28/32 38		×		38	35	35	77	77	77	77
M Surface-mounted	Recess depth	mm		tangular (M)		42		K	×	×	×	×	×	×
wall louvre Minimum / maximum louvre (Width x Height)	Rect. mir	Round [MR]: 35 Rectangular (G, F, M): min. W 200 x H 200 Round [MR]: min. dia. 300 - max. dia. 1500		min. W 200 x H 200	min. 300 x max. 25 high / v	x 300 mm 500 mm wide if	min. W 200 x H 200	min. W 200 x H 200	min. W 300 x H 300	min. W 300 x H 300	min. W 300 x H 300	min. W 300 x H 300		

	DUCOGR ACOUS						DU	COGRIL CLOSE	DUCOGRILLE NIGHTVENT	DUCOGRILLE TRANSFER		
HP Classic 45HP	Classic 50HP	HP Classic 130HP	Classic 70S	Classic 70V	Acoustic 75Z	Acoustic 75L	Acoustic 150 see p. 27	Close 105	Close 35Z	Close M 100	NightVent	Transfer see p. 36
70	00	00	70	/5	2/	05	7.1	7/*	F1	20	(0	05
70 60	88 68	88 70	79 47	65 36	76 28	95 28	74 35	74* 74*	51 39	28	60	95 34
12,66	4,7	8,55	16,8	72,79	16,93	16,52	11,04	2,57*	30,38	88,43	24,51	42,93
6,68	4,55	13,42	18	83,88	21,83	12,14	10,96	2,57*	23,67	89,43	24,51	47,10
0,28	0,46	0,34	0,24	0,12	0,24	0,25	0,3	0,62*	0,18	0,11	0,2	0,15
0,39	0,47	0,27	0,24	0,11	0,21	0,29	0,3	* measured withou internal and external louvre grille	0,21	0,11	0,2	0,15
В	C (22.2)	A	В	A	B	B (97,2)	В	n/a	B (98,25)	n/a	A	n/a
В	(92,3) C	Α	С	B (20.00)	(97,8) B	С	С	n/a	В	n/a	В	n/a
С	(89,80) C	A	С	(98,98) B	(95,1) C	(93,9) C	С	n/a	(96,52) C	n/a	С	n/a
С	(86,5) D	A	(94,27) C	(95,53) C	(89,4) D	(88,2) D	С	n/a	(88,82) D	n/a	D	n/a
С	(79,7) D	A	С	(80,43) D	(77,3) D	(75) D	D	n/a	(39,83) D	n/a	D	n/a
D	D	Α	(84,90) D	D	D	D	D	n/a	D	n/a	D	n/a
-/-	-/-	-/-	- /-	-/-	,	,	11	Closed Open	-/-	- /-	Closed Open	-/-
n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	6	6	-1	21 3	n/a n/a	n/a n/a	33 10 -1 0	n/a n/a
n/a	n/a	n/a	n/a	n/a	-1	-2	-2	-2 -1	n/a	n/a	-4 -1	n/a
n/a	n/a	n/a	n/a	n/a	2,7	2,6	4,8	13,7 1,4	n/a	n/a	21,5 7,3	n/a
n/a	n/a	n/a	n/a	n/a	3,5	3	4	14,6 2,4	n/a	n/a	21,3 6,5	n/a
n/a	n/a	n/a	n/a	n/a	2,1	1,9	7,4	16,5 3,1	n/a	n/a	28,2 9,2	n/a
n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	4,8 10,1	4,4 9,7	11,4 12,4	20,9 2,2 2,6	n/a n/a	n/a n/a	37,1 8,9 45,2 11,5	n/a n/a
n/a n/a	n/a n/a	n/a n/a	n/a n/a	n/a n/a	12,4	11,5	13	29,8 2,7	n/a n/a	n/a n/a	53,7 12,4	n/a n/a
				·	·							
50	50	50	85	65	60	60	150	91	50	n/a	37,5	20
62	62	158	82	82	82	82	158	7.1	45			28 - 84
48	48	48	48	48	48	48	48		20	×	x	21
65	65	158	x	x	x	x	158		45	x	x	×
0 28	0 28	0					0	- see p. 28	0 24/28		24/28/32/36/40/44/48	
77	77	х	х	х	×	×	×	-	45	×	115	×
x	x	x	x	x	3 C	×	*		×	13	ж	Without counterframe:
min. W 250 x H 250	min. W 250 x H 250	min. W 250 x H 250	min. W 300 x H 300	min. W 300 x H 300	min. W 250 x H 250	min. W 250 x H 250	min. W 250 x H 250	see drawing on p. 29	see table on p. 30	200 or 300 max. width 1000 mm	see tables on p. 34	H 90 mm With counterframe: min. W 200 x H 100 mm



