

ISOLATED MURAX SHUTTERS

ISOLATED MURAX

ISOLATED SHUTTER

"Comfort and security"

- **GENERAL INFORMATION**

Description 3

Parts list 5

- **TECHNICAL INFORMATION**

Shutter installation layouts 7

Shutter 8

Guiding rails 9

Types of operation 11

Operators 12

Winding plates 14

Reservation areas 15

Operating modes 16

- **FURTHER INFORMATION**

Options 20

Some of our projects 21

- For industrial or commercial premises, or garages
- Simple, safe and effective closing mechanism
- Double-skin slat made of isolated galvanized steel
- Motorized operation
- Thermal isolation
- Sound isolation
- Full slats
- Slat pitch: 93.7 mm

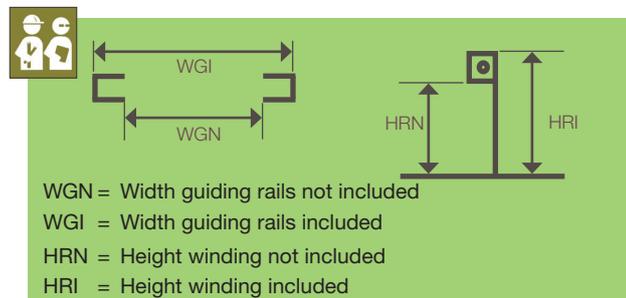




DESCRIPTION

Limits of use

	WIDTH (WGI) MM	HEIGHT (HRN) MM	WEIGHT (W) KG
MIN.	1,100	800	17
MAX.	8,220	8,000	810



Installation layouts

The Isolated Murax can be:

- wall-mounted

The Isolated Murax can be rolled:

- Inward: the shaft and the hollow part of the slats are facing the inside of the building.
- Outward: the shaft and the hollow part of the slats are facing the outside of the building.

Shutter

	SLATS	END SLAT
SLAT PITCH	93.7 mm	93 mm
STRUCTURE	<ul style="list-style-type: none"> • Double-skin slats made of galvanized steel 4/10th • Isolated with hard polyurethane foam 	Aluminum slat with seal
FINISH	<ul style="list-style-type: none"> • Galvanized, varnish • Prelacquered, similar to RAL: 3000 / 5010 / 7016 / 8014 / 9002 / 9006 / 9007 / 9016 	Raw finish, natural shade.
HEAT TRANSFER COEFFICIENT	$U = 3.6 \text{ W/m}^2\text{K}$	
SOUND INSULATION	$RW = -20 \text{ db}$	



Shutter sealed at header with brush seal.

Guiding rails

Standard:

- Guiding rails equipped with two PVC seals, riveted at the ends
- In galvanized steel
- Thickness 20/10th
- Dimensions: 85x85, 110x85
- Non-bored guiding rails (bored at the front upon request)

"Hurricane" guiding rails for shutters exposed to the wind:

- Guiding rails equipped with two PVC seals, riveted at the ends
- In galvanized steel
- Thickness 30/10th
- Dimensions: 110 x 85
- Shutter keyed into the guiding rails with plastic end-pieces
- Non-bored guiding rails (bored at the front upon request)



Types of operation

TYPES OF OPERATION	SHAFTS	
Axial operator (or central)	Spring-loaded	<ul style="list-style-type: none"> Galvanized steel carrier tube Ø 60 mm Galvanized steel spring spools Ø 220 mm Galvanized steel curved profiles to ensure better rigidity of the shaft and better distribution of forces "Antifall Guard"® depending on the shutter weight (EN 13241 + A2)
Tubular operator	Hollow	<ul style="list-style-type: none"> Steel tube of Ø 133 mm or Ø 168 mm depending on the width and weight of the shutter Direct drive operator (non-balanced shaft) Anti-fall guard on opposite side to operator
External operator	Hollow	<ul style="list-style-type: none"> Steel tube of Ø 133 mm or Ø 193 mm depending on the width and weight of the shutter Direct drive operator (non-balanced shaft) Anti-fall guard integrated into operator

© Patented system



If the weight of the shutter is less than or equal to 120 kg, balancing is carried out without "Antifall Guard". Standard EN 13241 + A2 allows an imbalance of less than or equal to 20 kg. Therefore, our shafts have been recalibrated with springs whose force is less than or equal to 20 kg.

Winding plates

- Made of **galvanized steel**: the plates support the shaft.
- Their **dimensions and thicknesses** vary according to the shutter characteristics.

Operating modes

- Hold to run operation:**
Control device that requires continuous manual operation to function, within sight of the door: open or close.
- Impulse operation for ascent and hold to run operation for descent:**
This operation corresponds to what was formerly known as combined operation under French standard NFP 25362; it relates to impulse operation under current standard EN 13241 + A2.
- Impulse operation:**
Control device that requires a brief manual action to initiate movement: open, stop or close.
- Automatic operation:**
The door can be operated without any manual effort (with a time delay system or a magnetic loop that triggers movement, for example).

Two additional factors must be taken into consideration:

- **The user:** trained or untrained.
- **The installation site:** whether it is in a public area or not.

The two above points determine the safety protocol to be followed.



A user is considered to have been "trained" if the installer has given them instructions on how to use the product. The European standard EN 13241 + A2 requires that a user guide and a maintenance logbook be provided with each installation.

- Standard:**
All our shutters have been checked by a certified body and are CE labeled (EN 13241 + A2).



PARTS LIST

Shutter with spring-loaded shaft



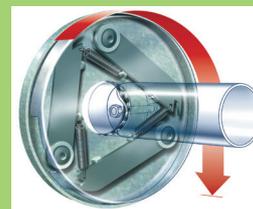
- 1. Shutter
- 2. Guiding rail with seal
- 3. Connecting lug
- 4. Square bracket to be pinned
- 5. Winding plate
- 6. Spring spool

- 7. Spring
- 8. Tube
- 9. Curved profile
- 10. Axial operator
- 11. "Antifall Guard"®
- 12. Shutter clip

- 13. Shaft support bracket
- 14. Stop on guiding rail
- 15. End slat with seal
- 16. Stop for end slat

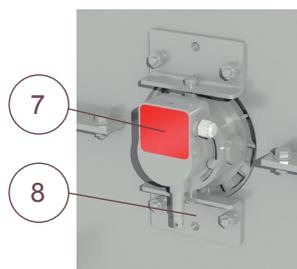


All our spring-loaded shafts for shutters over 120 kg are equipped with "Antifall Guard"® (EN 13241 + A2).

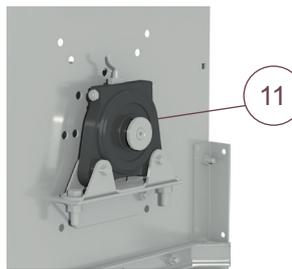




Shutter with hollow shaft



Tubular operator
(T15M / T20M / T25M / T30M / T35M / T45M)
Ringed tubular operator
(TB20M / TB25M / TB30M / TB35M / TB45M)

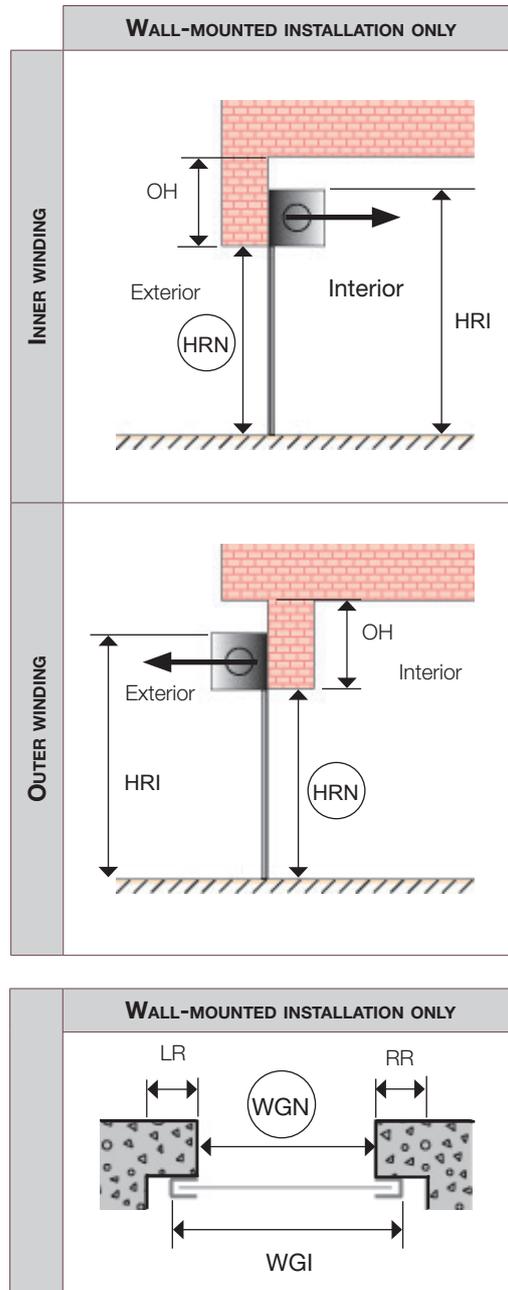


- 1. Shutter
- 2. Guiding rail with seals
- 3. Connecting lug
- 4. Lower half winding plate on operator side (OS)
- 5. Square bracket to be pinned
- 6. Upper half winding plate on operator side (OS)
- 7. Tubular operator
- 8. Tubular operator support

- 9. Hollow shaft
- 10. Shutter clip
- 11. Anti-fall guard with support for tubular operator
- 12. Bearing opposite side to gear operator
- 13. Winding plate opposite side to operator (OO)
- 14. End slat with seal
- 15. Gear operator support
- 16. Gear operator



SHUTTER INSTALLATION LAYOUTS



- WGN = Width guiding rails not included
- WGI = Width guiding rails included
- HRN = Height winding not included
- HRI = Height winding included
- OH = verhead height
- LR = Left reservation
- RR = Right reservation



The installation layouts are always provided from the interior view.



You must provide us with the encircled dimensions according to the layout.



SHUTTER

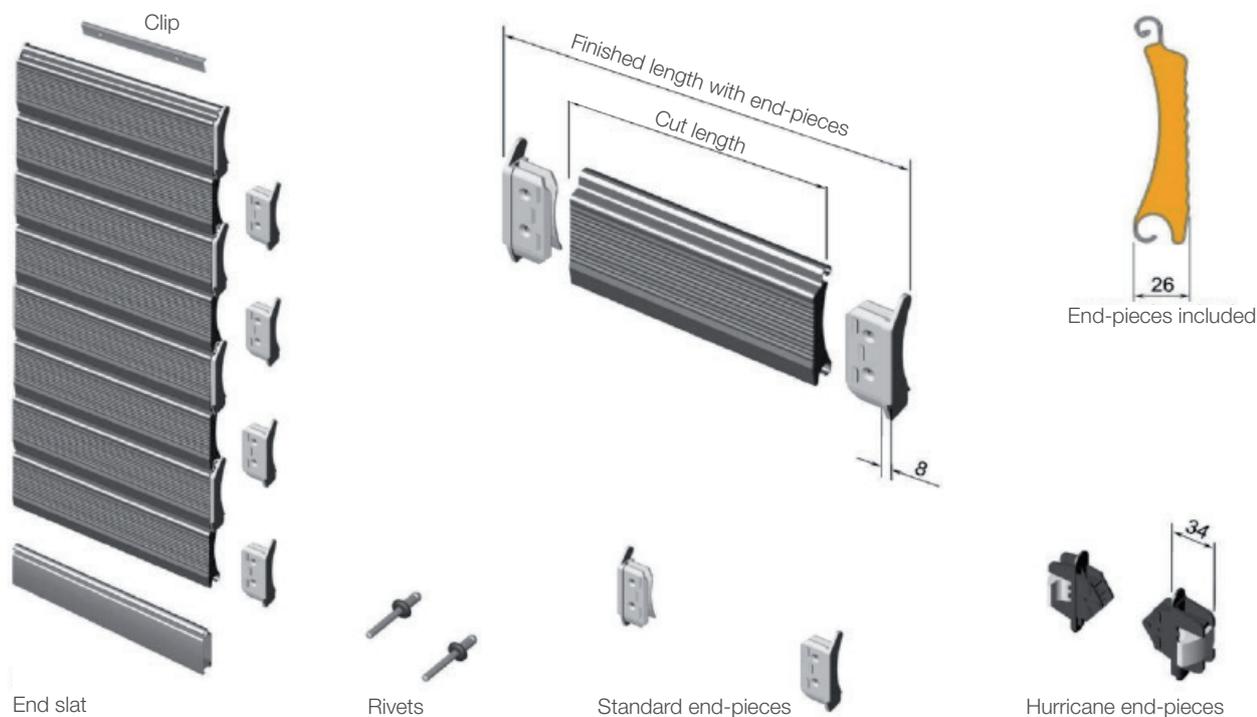
Characteristics

- The shutter is composed of slats with **PVC end-pieces riveted and clipped** onto each end.
- It can be equipped with slats with transparent **windows** or **ventilation grilles** (see options)
- Depending on the dimensions or upon request, the shutter can be equipped with **hurricane end-pieces**
- **Finishes:**

- **Galvanized, varnish**

- **3000** FLAME RED
- **5010** GENTIAN BLUE
- **7016** ANTHRACITE GRAY
- **8014** SEPIA BROWN
- **9002** GRAY WHITE
- **9006** WHITE ALUMINUM
- **9007** GRAY ALUMINUM
- **9016** TRAFFIC WHITE

- **End slat anodized** in a natural shade with a **seal** or **safety edge** without lock or latch.



Shutter weight

The shutter weight can be calculated approximately using the formula:

$$W \text{ (kg)} = WGI \text{ (m)} \times HRI \text{ (m)} \times 12.7 \text{ (kg/m}^2\text{)}$$



HRI = Height winding included
WGI = Width guiding rails included
W = Shutter weight



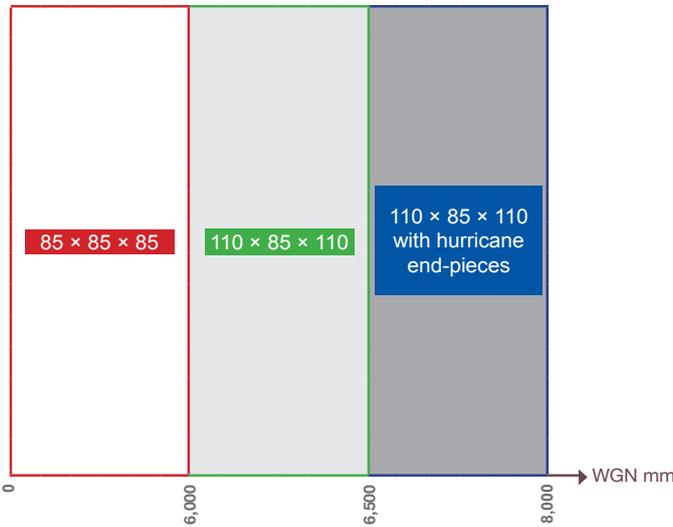
The formula must not be used for the operator. Contact our quotation service.



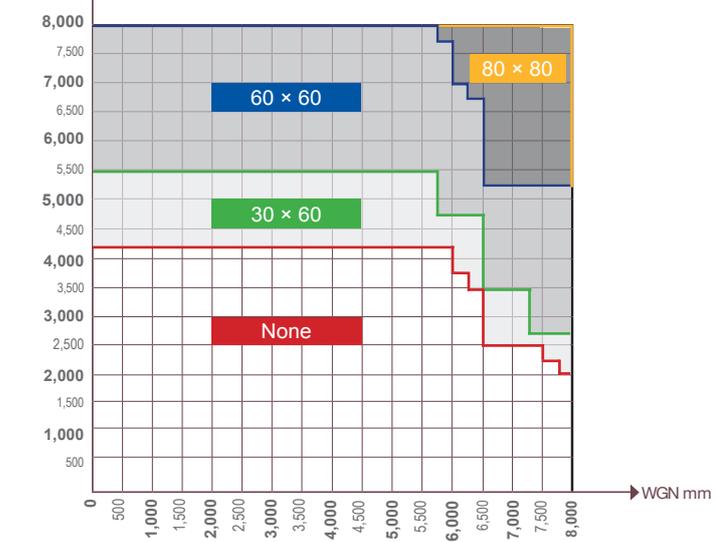
GUIDING RAILS

Types of guiding rail

Minimum guiding rail types according to width (WGN)



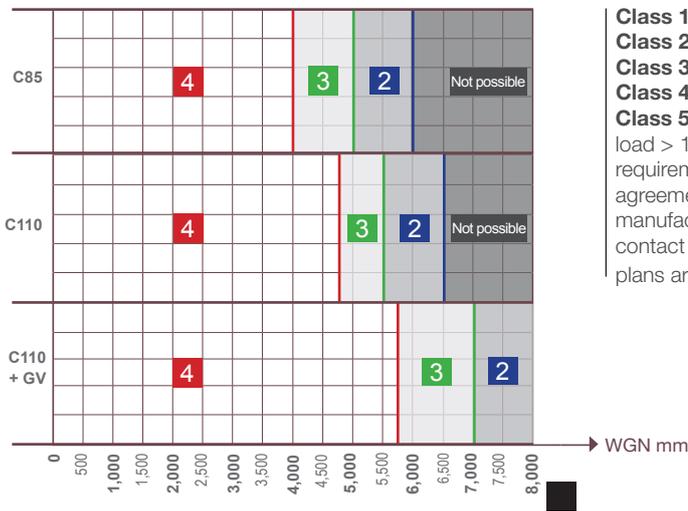
Offset post types according to height (HRN) and width (WGN)



WGN = Width guiding rails not included
HRN = Height winding not included

If the dimensions fall exactly on the limits provided, our quote will be based on the larger guiding rail dimensions.
Ex: Shutter WGN 6,000 mm
Guiding rails of 110 x 85 x 110

Resistance to wind load class



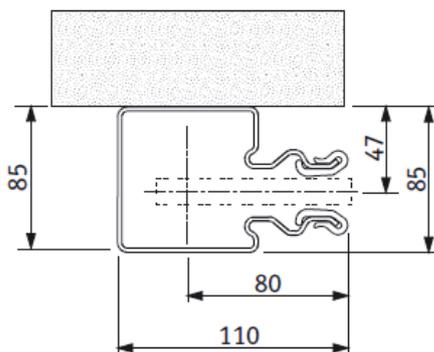
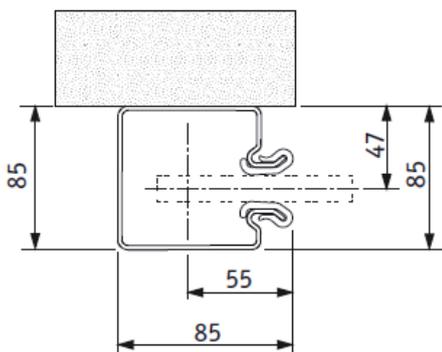
Class 1: 300 Pa max.
Class 2: 450 Pa max.
Class 3: 700 Pa max.
Class 4: 1,000 Pa max.
Class 5 (resistance to wind load > 1,000 Pa), special requirements subject to agreement between the manufacturer and the buyer: contact us to check if the plans are feasible.



85 x 85 x 85
Zinc-plated steel



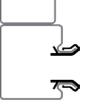
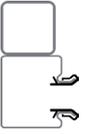
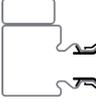
110 x 85 x 110
Zinc-plated steel



Guiding rail 85:
Only available for shutters without hurricane end-pieces.



Reservations

TYPES OF GUIDING RAIL		LATERAL DIMENSIONS (LGD) IN MM	BASE DIMENSIONS (GBD) IN MM
	Guiding rail 85x85	85	85
	Guiding rail 110x85x110	110	85
	Guiding rail 85x85 + offset post 30x60	85	115
	Guiding rail 85x85 + offset post 60x60	85	145
	Guiding rail 85x85 + offset post 80x80	85	165
	Guiding rail 110x85x110 + offset post 30x60	110	115
	Guiding rail 110x85x110 + offset post 60x60	110	145
	Guiding rail 110x85x110 + offset post 80x80	110	165



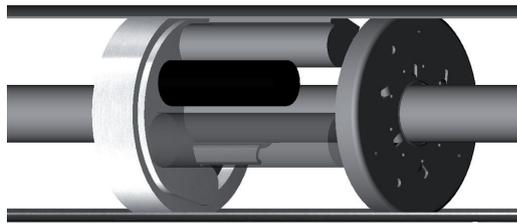
Depending on the space available and in accordance with the winding diameter that the height allows, the shutter may "sag" in the upper section (between the shaft and the header).



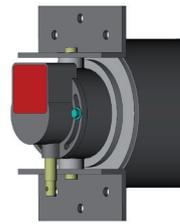
This "sagging" can be reduced at the header by lifting the shaft by a minimum of 500 mm if the overhead height allows.



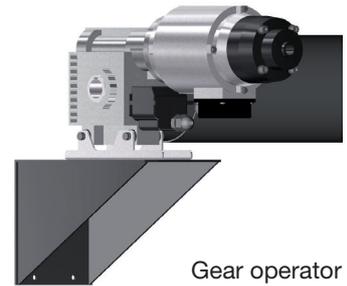
TYPES OF OPERATION



Axial operator + "Antifall Guard"®



Tubular operator



Gear operator

	TYPES OF OPERATION	RECOMMENDED OPERATORS	TYPES OF SHAFT	LIMITS OF USE
CLASSIC OPERATORS	AXIAL OPERATOR (OR CENTRAL)	<ul style="list-style-type: none"> Positioned in the center of the shaft Emergency operation using the release mechanism handle and direct pull operation 	Spring-loaded with curved support profiles and "Antifall Guard"® if necessary	WGI ≤ 6,000 mm HRN ≤ 4,260 mm W ≤ 240 Kg Emergency operation difficult using direct pull for W ≥ 120 Kg
	TUBULAR OPERATOR	<ul style="list-style-type: none"> Positioned at the end of the shaft Direct drive Emergency operation operated by detachable oscillating rod (width 3,000 mm max.) Anti-fall guard on opposite side to operator 	Hollow Ø 133 mm or Ø 168 mm	WGN ≤ 8,000 mm (Ø133) WGN ≤ 10,000 mm (Ø168) WGI ≥ 1,500 mm HRN ≤ 6,000 W ≤ 450 Kg
	GEAR OPERATOR E400	<ul style="list-style-type: none"> Positioned at the end of the shaft Direct drive Emergency operation: <ul style="list-style-type: none"> operated using short crank optional hoist Anti-fall guard integrated into operator 	Hollow 133 mm ≤ Ø ≤ 193 mm	WGI ≥ 1,000 mm W ≤ 530 Kg
	GEAR OPERATOR E750		Hollow 168 mm ≤ Ø ≤ 193 mm	WGI ≥ 1,000 mm W ≤ 670 Kg
GEAR OPERATOR S100 AND S140			WGI ≥ 1,000 mm W ≤ 1,200 Kg	
MOTEURS RAPIDES (>0.5 m.s⁻¹)	GEAR OPERATOR R400	<ul style="list-style-type: none"> Positioned at the end of the shaft Direct drive Emergency operation: <ul style="list-style-type: none"> operated using short crank optional hoist Anti-fall guard integrated into operator 	Hollow Ø 168 mm	1,100 ≤ WGI ≤ 6,220 mm 2,500 ≤ HRN ≤ 8,000 mm W ≤ 220 Kg
	GEAR OPERATOR R750			1,100 ≤ WGI ≤ 6,220 mm 2,500 ≤ HRN ≤ 8,000 mm W ≤ 415 Kg
	GEAR OPERATOR R1250			1,100 ≤ WGI ≤ 6,220 mm 2,500 ≤ HRN ≤ 8,000 mm W ≤ 695 Kg



OPERATORS

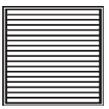
Types of operator

As all of our products are custom-made, our quotation team will determine the most suitable operator according to the shutter characteristics, the layout and the types of operation.

- Technical characteristics of operators

TYPE OF OPERATOR	VOLTAGE (V)	POWER (W)	CURRENT (A)	POWER SUPPLY	PROTECTION CLASS	ROTATIONAL SPEED (No. RT/MIN)	NO. OF CYCLES* PER DAY	TORQUE (Nm)
Axial II	230 mono	300	1.3	3 x 2.5	IPX4	10	15	75
Axial III yellow	230 mono	360	1.6	3 x 2.5	IPX4	10	15	100
Axial III gray	230 mono	450	2	3 x 2.5	IPX4	10	15	140
T15M	230 mono	450	2	3 x 2.5	IP44	8	25	150
T20M, TB20M	230 mono	550	2.4	3 x 2.5	IP44	8	25	200
T25M, TB25M	230 mono	710	3.2	3 x 2.5	IP44	8	25	250
T30M, TB30M	230 mono	855	3.9	3 x 2.5	IP44	8	25	300
T35M, TB35M	230 mono	990	4.4	3 x 2.5	IP44	8	25	350
T45M, TB45M	230 mono	1,200	5.3	3 x 2.5	IP44	8	25	450
E400	230 tri	1,100	8.83	5 x 2.5	IP54 ***	12	100	400
	400 tri **	1,100	5.1	5 x 2.5	IP54 ***	12	100	400
E750	400 tri **	1,400	3.9	5 x 2.5	IP54 ***	10	50	750
S100	400 tri	1,300	6.5	5 x 2.5	IP54	10	100	1,000
S140	400 tri	1,100	4.1	5 x 2.5	IP54	7	100	1,400
R400	400 tri + N	1,700	4.2	5 x 2.5	IP54	24	20 / H	400
R750	400 tri + N	3,000	7	5 x 2.5	IP54	24	20 / H	750
R1250	400 tri + N	4,000	10	5 x 2.5	IP54	24	20 / H	1,250

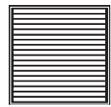
*1 cycle= 1 ascent + 1 descent - Non-consecutive cycles / ** 400 tri + N if using flashing or illumination lights / *** Protection class 65 on request



Types of operator

TYPES OF OPERATOR	OPERATOR SIDE DIMENSIONS (OSD)	OPPOSITE SIDE TO OPERATOR DIMENSIONS (OOD)	OPERATOR DEPTH (OD)	UPPER DIMENSIONS OF OPERATOR (UDO)	LOWER DIMENSIONS OF OPERATOR (IDO)		
					WITHOUT SUPPORT	WITH SUPPORT	
Axial	40	40	0	0	0		
Tubular	100	70	0	0	0		
E400	alone	180	100	1/2 plate + 390	160	145	470
	crank	390	100	1/2 plate + 600	380	220	470
	hoist	210	100	1/2 plate + 480	190	145	470
E750	alone	180	100	1/2 plate + 420	190	145	460
	crank	390	100	1/2 plate + 630	380	220	460
	hoist	240	100	1/2 plate + 500	190	145	460
S100	alone	210	100	1/2 plate + 500	210	135	590
	crank	410	100	1/2 plate + 760	420	190	590
	hoist	210	100	1/2 plate + 590	210	135	590
S140	alone	210	100	1/2 plate + 570	250	135	590
	crank	410	100	1/2 plate + 840	480	135	590
	hoist	210	100	1/2 plate + 660	250	135	590
R400	alone	190	100	1/2 plate + 410	200	145	460
	crank	390	100	1/2 plate + 625	360	145	460
	hoist	230	100	1/2 plate + 500	200	145	460
R750	alone	205	100	1/2 plate + 490	245	135	440
	crank	390	100	1/2 plate + 705	380	135	440
	hoist	250	100	1/2 plate + 550	245	135	440
R1250	alone	215	100	1/2 plate + 570	265	200	505
	crank	390	100	1/2 plate + 785	410	200	505
	hoist	265	100	1/2 plate + 675	285	200	505

Note: Reservations provided in mm.



WINDING PLATES

DIAMETER (MM)		WINDING PLATE DIMENSIONS (MM)					
Ø 220	MAX. HRN (MM)	1,920	3,044	4,260			
	WINDING PLATES	400	440	480			
Ø 133	MAX. HRN (MM)	2,014	2,951	3,981	5,293	6,324	7,354
	WINDING PLATES	370	400	440	480	520	550
Ø 168	MAX. HRN (MM)	2,201	3,232	4,262	5,293	6,886	8,000
	WINDING PLATES	370	400	440	480	520	550
Ø 193	MAX. HRN (MM)	1,920	2,951	4,169	5,480	6,886	8,000
	WINDING PLATES	370	400	440	480	520	580

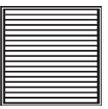


$$\text{HRI} = \text{HRN} + 20 + 50 + \text{Plate} + 100$$

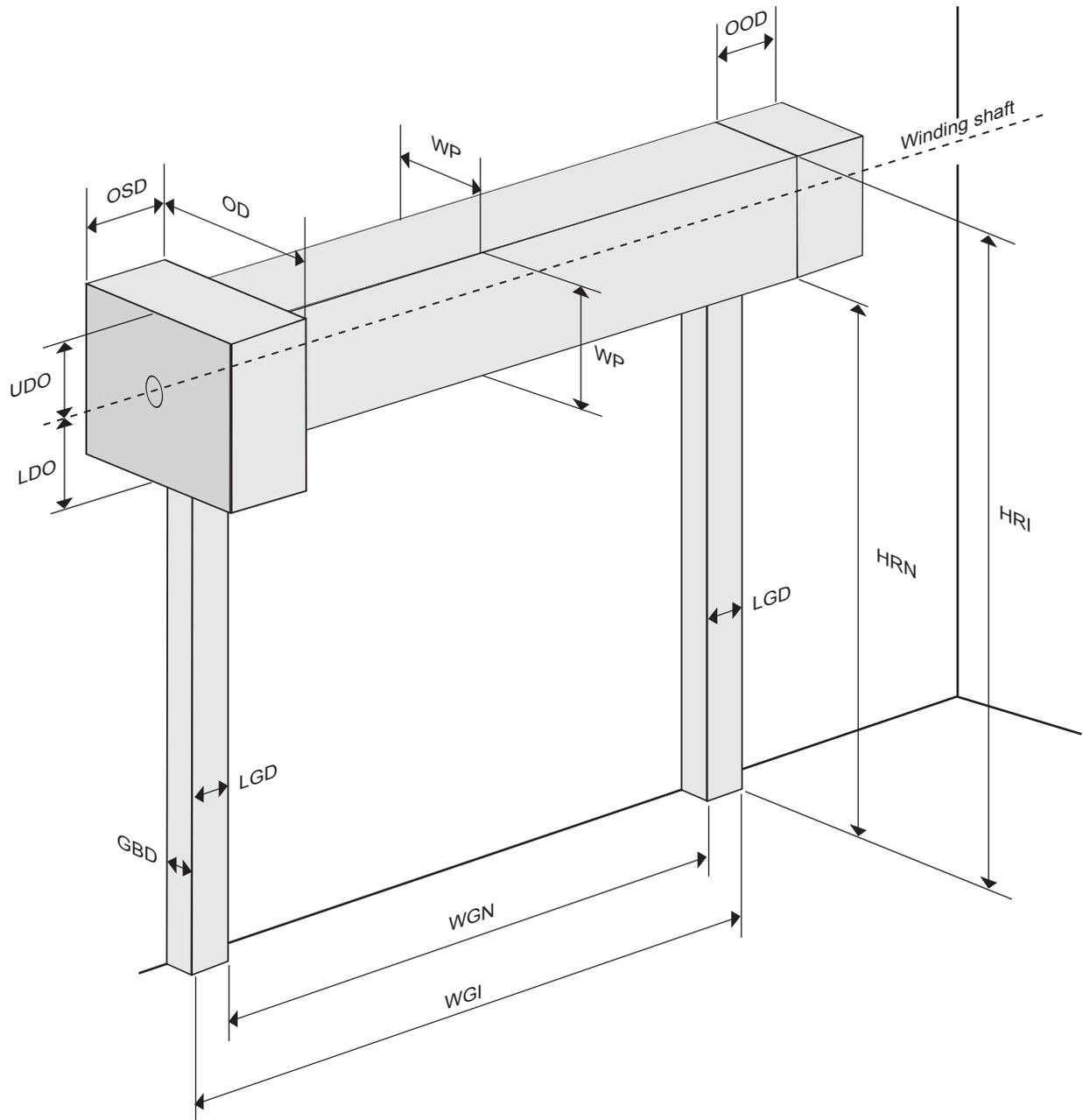
20 = Guiding rail extension

50 = Winding plates, guiding rails, connecting lug

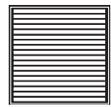
10 = Winding plate installation kit



RESERVATION AREAS



- WGN** : Width guiding rails not included
- WGI** : Width guiding rails included
- HRN** : Height winding not included
- HRI** : Height winding included
- LGD** : Lateral guiding rail dimensions
- GBD** : Guiding rail base dimensions
- OSD** : Operator side dimensions
- OD** : Operator depth
- UDO** : Upper dimensions of operator
- LDO** : Lower dimensions of operator
- OOD** : Opposite side to operator dimensions
- WP** : Winding plate dimensions



OPERATING MODES

Hold to run (trained users)

This operating mode can be used for all shutter locations. It requires a controller that allows constant user control (continuous action on the control device and within sight of closing).



Caution: In public areas, the controller must be personalized, e.g. a key switch box.

- Safety devices required

	OUTSIDE PUBLIC AREA / IN PUBLIC AREA WITHIN SIGHT OF DOOR
INDUSTRIAL OR COMMERCIAL PREMISES, OR GARAGES	<ul style="list-style-type: none"> • No safety device required

CONTROLLER		IN AREA	OUTSIDE AREA
BBA1	Wall-mounted toggle-switch box		x
BBE1	Flush-mounted toggle-switch box		x
BBA2	Wall-mounted 2-button box		x
Transmitter	Remote control (for the "Easy" control box)	x	x
Key pad	Wall-mounted, wireless key pad (for the "Easy" control box)	x	x
BCA	Wall-mounted key switch box	x	x
BCE	Flush-mounted key switch box	x	x
BCDA	Wall-mounted key switch and release box	x	x
BCDE	Flush-mounted key switch and release box	x	x
BCBA	Wall-mounted bipolar key switch box	x	x
BCBE	Flush-mounted bipolar key switch box	x	x
Sécurinox	Sécurinox release box with tubular cylinder	x	x
	Sécurinox release box with European cylinder		
BDD	Junction box with double release mechanism	x	x
BBAR	Wall-mounted 2-button radio box (for the "Easy" control box)		x



For more technical information, refer to the "Operators & Accessories" chapter and the "Control Accessories" section.



Impulse operation for ascent / Hold to run for descent (trained users)

This operating mode allows opening by impulse operation and closing by hold to run (previously combined operation under French Standard NFP 25362). This operating mode is related to impulse operation in the Standard EN 13241 + A2.



Caution: In public areas, the controller must be personalized, e.g. a key switch box.

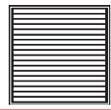
• Safety devices required

	OUTSIDE PUBLIC AREAS	IN PUBLIC AREAS
INDUSTRIAL OR COMMERCIAL, PREMISES, OR GARAGES	<ul style="list-style-type: none"> Control box adapted according to operator 	<ul style="list-style-type: none"> Control box adapted according to operator

CONTROLLER		IN AREA	OUTSIDE AREA
BBA3	Wall-mounted 3-button box		x
BBAS	Wall-mounted box with stop button	x	x
BCBA	Wall-mounted bipolar key switch box	x	x
BCBE	Flush-mounted bipolar key switch box	x	x
BCA	Wall-mounted key switch box	x	x
BCE	Flush-mounted key switch box	x	x
BCDA	Wall-mounted key switch and release box	x	x
BCDE	Flush-mounted key switch and release box	x	x
Key pad	Wall-mounted, wireless key pad (for the "Easy" control box)	x	x
Transmitter	Remote control	x	x
Sécurinox	Sécurinox release box with tubular cylinder	x	x
	Sécurinox release box with European cylinder		
BDD	Junction box with double release mechanism	x	x
BBAR	Wall-mounted 2-button radio box (for the "Easy" control box)		x



For more technical information, refer to the "Operators & Accessories" chapter and the "Control Accessories" section.



Impulse operation (trained users)

In impulse operation mode, the user is required to perform a brief action on the controller which triggers the movement of the shutter: open, stop or close.



Caution in the workplace: 2 flashing spots + markings on the ground are now legally required according to the decree of 21 December 1993.

• Safety devices required

	OUTSIDE PUBLIC AREAS WITHIN OR OUT OF SIGHT OF DOOR	IN PUBLIC AREAS	
		WITHIN SIGHT OF DOOR	OUT OF SIGHT OF DOOR
INDUSTRIAL OR COMMERCIAL PREMISES, OR GARAGES	<ul style="list-style-type: none"> Control box adapted according to operator Bottom safety edge 	<ul style="list-style-type: none"> Control box adapted according to operator Bottom safety edge 	<ul style="list-style-type: none"> Control box adapted according to operator Bottom safety edge 2 sets of bottom cells
RESIDENTIAL PLACE OF RESIDENCE WITH HRN ≤ 3,500 AND WGN ≤ 7,000 AND SURFACE AREA ≤ 12M ²	<ul style="list-style-type: none"> Murax VILLA box Bottom safety edge 		

CONTROLLER		IN AREA	OUTSIDE AREA
BBAI	Wall-mounted impulse button box		x
BCBA	Wall-mounted bipolar key switch box		x
BCBE	Flush-mounted bipolar key switch box		x
BCA	Wall-mounted key switch box		x
BCE	Flush-mounted key switch box		x
BCDA	Wall-mounted key switch and release box		x
BCDE	Flush-mounted key switch and release box		x
CCA	Wall-mounted radio code key pad		x
Receiver	Separate 2-function receiver		x
Murax transmitter	Murax Villa 2-function transmitter		x
Transmitter	4-function transmitter (Commerce and Industry)		x
Sécurinox	Sécurinox release box with tubular cylinder		x
	Sécurinox release box with European cylinder		
BDD	Junction box with double release mechanism		x



For more technical information, refer to the "Operators & Accessories" chapter and the "Control Accessories" section.



Automatic operation (trained or untrained users)

In automatic operation, the shutter moves without the need for manual operation by the user (for example, closing with time delay, opening by magnetic loop, etc.). This operating mode can be used for commercial and industrial premises and garages but it is not suitable for houses.



Caution in the workplace: 2 flashing spots + markings on the ground are now legally required according to the decree of 21 December 1993.



Caution should be taken if installing automatically operated shutters in places of residence: Collective residential buildings must meet specific requirements (acoustics/traffic, etc.) not covered by the European Standard EN 13241 + A2. These specific requirements are not included in our quotes. In the case of a collective residence, signage and lighting (area lighting + flashing lights with 2-second warning + ground marking) are legally required (Decree of 09 August 2006 relating to the application of Article R.125-3-1 of the Construction and Housing Code)

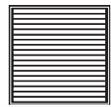
• Safety devices required

	OUTSIDE PUBLIC AREAS	IN PUBLIC AREAS WITHIN OR OUT OF SIGHT OF DOOR
INDUSTRIAL OR COMMERCIAL PREMISES, OR GARAGES	<ul style="list-style-type: none"> Control box adapted according to operator Bottom safety edge 2 sets of bottom cells 	<ul style="list-style-type: none"> Control box adapted according to operator Bottom safety edge 2 sets of bottom cells

CONTROLLER		IN AREA	OUTSIDE AREA
BBAI	Wall-mounted impulse button box		x
BCBA	Wall-mounted bipolar key switch box		x
BCBE	Flush-mounted bipolar key switch box		x
BCA	Wall-mounted key switch box		x
BCE	Flush-mounted key switch box		x
BCDA	Wall-mounted key switch and release box		x
BCDE	Flush-mounted key switch and release box		x
CCA	Wall-mounted radio code key pad		x
TR	Road tube		x
BM	Magnetic Loop		x
Receiver	Separate 2-function receiver		x
Transmitter	4-function transmitter (Commerce and Industry)		x
Sécurinox	Sécurinox release box with tubular cylinder		x
	Sécurinox release box with European cylinder		
BDD	Junction box with double release mechanism		x

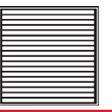


For more technical information, refer to the "Operators & Accessories" chapter and the "Control Accessories" section.



OPTIONS

OPTIONS	
<ul style="list-style-type: none"> • "Hurricane" end-pieces (see table MI- 9) 	
<ul style="list-style-type: none"> • Windows <ul style="list-style-type: none"> - Dimensions: 150 x 55 mm - From 1 to all of the shutter slats - 5 windows / m 	
<ul style="list-style-type: none"> • Light gray ventilation grille <ul style="list-style-type: none"> - Dimensions: 150 x 55 mm - From 1 to all of the shutter slats - 5 ventilation grilles / m - Air vent section / grille = 27.3 cm² 	
<ul style="list-style-type: none"> • Emergency chain hoist allowing repair operations to be performed from the ground: <ul style="list-style-type: none"> • E400 operator • E750 operator • S100 operator • S140 operator • R400 operator • R750 operator • R1250 operator 	
<ul style="list-style-type: none"> • Installation accessories - Hardware (For guiding rails to be pinned: screws, sleeper screws, washers, pins, nuts and stop pins) 	
<ul style="list-style-type: none"> • Accessories for electrical connection (Disconnect switch, junction box, insulating screw joints, cable ties + threaded pins, 6m of 3-core cable 0.75mm², 1m of 5-core cable 1.5mm², 7m of 5-core cable 0.75mm², 4 x 3m IRO tubes) 	
<ul style="list-style-type: none"> • LED flashing spot Operating modes: Impulse, Automatic 	
<ul style="list-style-type: none"> • LED flashing spot 10 W power = 930 lumen Operating modes: Impulse, Automatic 	



SOME OF OUR PROJECTS



Isolated shutter with optional windows



Isolated shutter with optional windows (interior view)



Isolated shutter with optional windows



Isolated shutter



Isolated shutter



Guiding rail in galvanized steel with sliding runners, end slat with seal



Isolated shutter with optional windows

