



Industrial Sectional Doors Depth 67 mm

Technical Manual

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HÖRMANN

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Note:

The size and validity tables in this document can only represent the status upon document creation.
Therefore deviations from the product configurator may occur.
All dimensions in mm.
Subject to design changes.

Detailed door leaf constructions and track applications as well as fitting examples are provided in this manual.
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Product Descriptions

Door type	Door leaf/wicket door
Sectional door SPU 67 Thermo, double-skinned steel sections, 625 and 750 mm high, Stucco-textured/Micrograin	
Door leaf	Door sections made of double-skinned, PU-foamed steel sections with thermal break (made of hot-galvanized steel). Door sections Stucco-textured on inside and outside with uniform horizontal ribbing, or Micrograin with fine horizontal embossing outside and Stucco-textured inside, 625 and 750 mm high, depth 67 mm. All door sections without finger trap protection. Surface protection with polyester-primer coating.
Wicket door	Only to be installed in the central fields of the sectional door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door with trip-free threshold, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold rail): For grid heights 2000, 2125 and 2250, the clear opening height must not be lower than the door height.
Glazing	Glazing frames made of anodised aluminium extrusions with thermal break or sections with compound glazing are possible within the size range shown below. Fewer compound glazings or different arrangements are possible subject to the minimum distances. Glazing frames are possible from FFL and compound glazing from 625/750 mm above FFL.
Sectional door SPU 67 Thermo, double-skinned steel sections, 375 and 500 mm high, Stucco-textured/Micrograin	
Door leaf	Door sections made of double-skinned, PU-foamed steel sections with thermal break (made of hot-galvanized steel). Door sections Stucco-textured on inside and outside with uniform horizontal ribbing, or Micrograin with fine horizontal embossing outside and Stucco-textured inside, 375 and 500 mm high, depth 67 mm. All door sections without finger trap protection. Surface protection with polyester-primer coating.
Wicket door	Only to be installed in the central fields of the sectional door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door with trip-free threshold, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold rail): For grid heights 2000 and 2125, the clear opening height must not be lower than the door height.
Glazing	Glazing frames made of anodised aluminium extrusions with thermal break or sections with compound glazing are possible within the size range shown below. Fewer compound glazings or different arrangements are possible subject to the minimum distances. Glazing frames are possible from FFL and compound glazing from 500 mm above FFL.
Sectional door APU 67 Thermo, aluminium extrusions, double-skinned bottom section	
Door leaf	Bottom section made of double-skinned, PU-foamed steel section with thermal break (made of hot-galvanized steel), 750 mm (standard) or 1500 mm high, Stucco-textured on inside and outside with uniform horizontal ribbing, or Micrograin with fine horizontal embossing outside and Stucco-textured inside. Surface protection with polyester-primer coating. Other door sections with glazing made of anodised aluminium extrusions with thermal break. Depth 67 mm. All door sections without finger trap protection. Infill: Clear synthetic triple pane, 51 mm (S3).
Wicket door	Depending on the door type, made of anodised aluminium extrusions with thermal break, installed in the central fields of the door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door with trip-free threshold, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold rail): If the wicket door has the same number of sections as the sectional door, the clear opening height must not be lower than the door height (RM).
Sectional door ALR 67 Thermo, aluminium extrusions	
Door leaf	Door sections made of anodised aluminium extrusions with thermal break. Depth 67 mm. All door sections without finger trap protection. Bottom door section consisting of PU-foamed infill with 51 mm Stucco-textured aluminium sheet cover on both sides (FU), other door sections with 51 mm clear synthetic triple panes (S3).
Wicket door	Depending on the door type, made of anodised aluminium extrusions with thermal break, installed in the central fields of the door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door with trip-free threshold, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold rail): If the wicket door has the same number of sections as the sectional door, the clear opening height must not be lower than the door height (RM).
Sectional door ALR 67 Thermo Glazing, aluminium extrusions	
Door leaf	Door sections made of anodised aluminium extrusions with thermal break. Depth 67 mm. All door sections without finger trap protection. All door section infills with double panes made of single-pane safety glass 26 mm. Uniform infill heights.
Frame / track application	
Enclosed, moulded angle frame, made of hot-galvanized steel with screwed safety tracks.	

Product Descriptions

Door lock

Manually operated	Inside locking using a shootbolt, rotary latch (for track applications with low-mounted torsion spring shaft on request) or floor locking.
Power-driven	Inside locking using a shootbolt

Counterbalance

Torsion springs, with carrying cables on the side (with a low headroom track application, a combination of carrying chain and carrying cable). The torsion springs for N, ND, NS, NK, NA, NH, GD and GS track applications are designed for at least 25,000 closing cycles and for all other track applications for at least 50,000 closing cycles.
For version with direct drive operator via the operator, shaft and carrying cables on the side.

Safety-related equipment according to DIN EN 12604

- Manually operated doors using a torsion spring with approved catch safety device^{*)}
- Manually operated doors that have more than one torsion spring with approved spring safety device^{*)} over a door height of 5000 mm with additional approved catch safety devices* on both sides (not for version with direct drive operator)
- Power-driven doors with break-in-resistant anti-lift kit

* European patent

Information on trap guard:

To comply with the safety requirements of door product standard DIN EN 13241-1, the following door systems require an operator and a light grille HLG 550. The light grille must be fitted in the reveal to secure gaps resulting during door movement. This safeguarding must take place up to a height of 2500 mm above FFL or a different permanent access level.

Door type	SPU 67	APU 67 Thermo / ALR 67 Thermo / ALR 67 Thermo Glazing
Door height:	RM ≤ 3000 mm	RM < 3040 mm
Track applications:	N, ND, NS, NK, NA, NH, GD, GS	
	H, HA, HD, HG, HS, HK after technical inspection	

Seals

Floor seal made of 1-chamber profile internally and 3-chamber EPDM profile externally with flexible adjustment lip, side seal, lintel seal, intermediate seal between the sections.

Note regarding surface coating

For the following colour tones, the sectional doors SPU 67 Thermo, APU 67 Thermo and ALR 67 Thermo with door widths from 5010 to 5500 mm in combination with the track applications NH, GD, GS, H, HD, HS, HK, HA, HU, RD, RS, RK, RG, V, VA, VS, VU, WS and WG are equipped with door leaf reinforcements to reduce the possibility of section deflection caused by sun exposure and require technical inspection.

RAL 3007 Black red
RAL 5003 Sapphire blue
RAL 5004 Black blue
RAL 5011 Steel blue
RAL 5013 Cobalt blue
RAL 5020 Ocean blue
RAL 5022 Night blue

RAL 6004 Blue green
RAL 6005 Moss green
RAL 6007 Bottle green
RAL 6008 Brown green
RAL 6009 Fir green
RAL 6012 Black green
RAL 6015 Black olive

RAL 6022 Olive drab
RAL 7016 Anthracite grey
RAL 7021 Black grey
RAL 7043 Traffic grey
RAL 8014 Sepia brown
RAL 8016 Mahogany brown
RAL 8017 Chocolate brown

RAL 8019 Grey brown
RAL 8022 Black brown
RAL 8028 Terra brown
RAL 9004 Signal black
RAL 9005 Jet black
RAL 9011 Graphite black
RAL 9017 Traffic black

Colour CH 703

Technical Data Overview

Construction and quality features					
		SPU 67 Thermo	APU 67 Thermo	ALR 67 Thermo	ALR 67 Thermo Glazing
Resistance to wind load EN 12424	Door without wicket door, LZ ≤ 8000, class	3 ⁵⁾	3 ⁵⁾	3 ⁵⁾	3 ^{4,5)}
	Door without wicket door, LZ > 8000, class	2 ⁶⁾	2 ⁶⁾	2 ⁶⁾	–
	Door with wicket door, LZ ≤ 4000, class	3 ⁵⁾	3 ⁵⁾	3 ⁵⁾	–
	Door with wicket door, LZ > 4000, class	2 ⁶⁾	2 ⁶⁾	2 ⁶⁾	–
Water tightness EN 12425	Door without wicket door, class	3 (70 Pa)	3 (70 Pa)	3 (70 Pa)	3 (70 Pa)
Air permeability EN 12426	Door without wicket door, class	2 ⁷⁾	2 ⁷⁾	2 ⁷⁾	2 ⁷⁾
	Door with wicket door, class	1 ⁸⁾	1 ⁸⁾	1 ⁸⁾	1 ⁸⁾
Acoustic insulation EN 717-1	Door without wicket door R = . . . dB	25	23	23 (30 ¹⁾)	30 ¹⁾
	Door with wicket door R = . . . dB	24	22	22	–
Thermal insulation EN 13241-1, appendix B EN 12428	Door without wicket door, U = W/(m²·K) ²⁾	0.62 (0.51 ³⁾)	2.1 (2.0 ³⁾)	2.2 (2.1 ³⁾)	–
	– Optional quadruple glazing, U = W/(m²·K) ²⁾	–	1.8 (1.7 ³⁾)	1.9 (1.8 ³⁾)	–
	– Optional climatic double panes made of single-pane safety glass, U = W/(m²·K) ²⁾	–	1.6 (1.5 ³⁾)	1.7 (1.6 ³⁾)	1.8 (1.7 ³⁾)
	– Optional double glazing made of single-pane safety glass U = W/(m²·K) ²⁾	–	2.6 (2.5 ³⁾)	2.7 (2.6 ³⁾)	3.0 (2.9 ³⁾)
	Door with wicket door, U = W/(m²·K) ²⁾	0.82 (0.75 ³⁾)	2.3 (2.2 ³⁾)	2.4 (2.3 ³⁾)	–
	– Optional quadruple glazing, U = W/(m²·K) ²⁾	–	2.0 (1.9 ³⁾)	2.1 (2.1 ³⁾)	–
	– Section, U = W/(m²·K)	0,33	–	–	–
Design	Self-supporting	●	●	●	●
	Depth, mm	67	67	67	67
Door sizes	Max. width mm, LZ	10000	10000	10000	5500
	Max. height mm, RM	7500	7500	7500	4000
Space requirements	From page 36				
Material, door leaf	Steel, double-skinned, 67 mm	●	●	–	–
	Aluminium, profile with thermal break	–	●	●	●
Surface, door leaf	Galvanized steel, coated RAL 9002	●	○	–	–
	Galvanized steel, coated RAL 9006	○	●	–	–
	Galvanized steel, coated RAL to choose	○	○	–	–
	Anodised aluminium E6 / C0	○	●	●	●
	Aluminium coated in RAL to choose	○	○	○	○
Door leaf reinforcement	From LZ, mm	5510	5510	5510	3340
	Note regarding surface coating, see page 5, from LZ, mm	5010	5010	5010	3340
Wicket door		○	○	○	–
Side Door	Matching the door	○	○	○	○
Glazings	Type A section window	○	–	–	–
	Type D section window	○	–	–	–
	Aluminium glazing frame	○	●	●	●
Seals	All-round on 4 sides	●	●	●	●
	Intermediate seal between the door sections	●	●	●	●
ThermoFrame	PVC hard / soft seal	○	○	○	○
Locking systems	Internal latches	●	●	●	●
	Outside / inside locking	○	○	○	–
Anti-lift kit	For doors of up to 5 m with shaft operator	●	●	●	●
Safety equipment	Side trap guards	●	●	●	●
	Spring break safeguard for manual operation	●	●	●	●
	Safety catch for doors with shaft operator	●	●	●	●
Fitting types	Concrete	●	●	●	●
	Steel	●	●	●	●
	Brickwork	●	●	●	●
	Others on request	○	○	○	○

● = Standard

○ = Optional

1) With optional double pane (single-pane safety glass)

2) For a door surface of 5000 × 5000 mm

3) Optionally with ThermoFrame

4) Door width up to 5500 mm

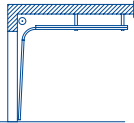
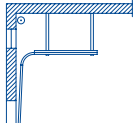
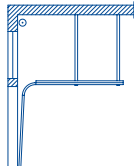
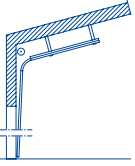
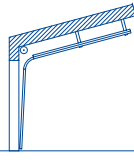
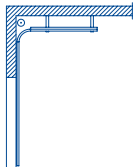
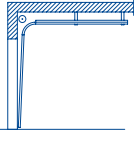
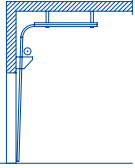
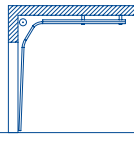
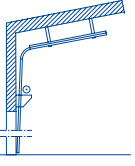
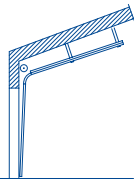
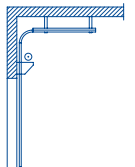
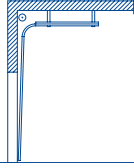
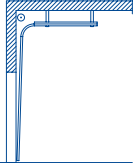
5) Class 3 = 0.7 kN/m² or 120 km/h

6) Class 2 = 0.45 kN/m² or 96 km/h

7) Class 2 = 12 m³/m²h

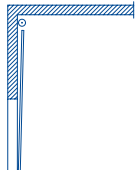
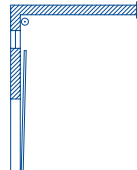
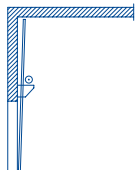
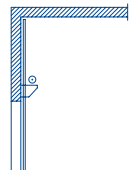
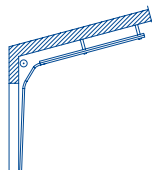
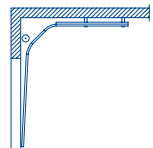
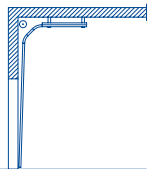
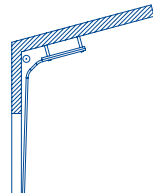
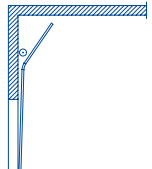
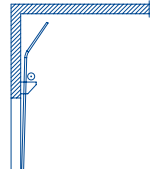
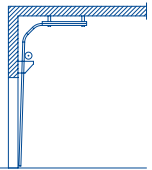
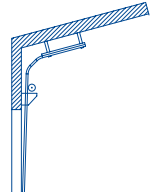
8) Class 1 = 24 m³/m²h

Overview of Track Applications

N*  Normal track application or version Normal track application for direct drive operators S17.24 and S35.30 Door width LZ ≤ 4500 mm Door height RM ≤ 4500 mm	HA*  Like track application H, with high-mounted torsion spring shaft Door height RM ≤ 3500 mm
NA*  Like track application N, with high-mounted torsion spring shaft Door height RM ≤ 5000 mm	HD*  Like track application H, with inclination
ND*  Like track application N, with inclination	HG*  Like track application H, with steep track and minimum slot width of 150 mm (for loading ramp doors) Not possible for door type ALR 67 Thermo Glazing and doors with wicket door or real glass infill! Door width LZ ≤ 3500 mm Door height RM ≤ 5000 mm
NH*  Like track application N, with minimum high-lift	HU  Like track application H, with low-mounted torsion spring shaft Door height RM ≤ 5000 mm
NS*  Like track application N, with double radius 2 x 45° Door height RM ≤ 5000 mm	RD  Like track application HU, with inclination Door height RM ≤ 5000 mm
GD*  Like track application NH, with inclination (maximum 27°) Door height RM ≤ 5000 mm	RG  Like track application HU, with steep track and minimum slot width of 150 mm (for loading ramp doors) Not possible for door type ALR 67 Thermo Glazing and doors with wicket door or real glass infill! Door width LZ ≤ 3500 mm Door height RM ≤ 5000 mm
H*  High-lift track application or version High-lift track application for direct drive operators S17.24 and S35.30 Door width LZ ≤ 4500 mm Door height RM ≤ 4500 mm	H with direct drive operator*  High-lift track application without torsion spring Door width LZ ≤ 10000 mm Door height RM ≤ 7500 mm

* For information on trap guard, see page 5

Overview of Track Applications

V  Vertical track application (Additional hand pulley required for manually operated doors!)	VA  Like track application V, with high-mounted torsion spring shaft (Additional hand pulley required for manually operated doors!) Door height RM ≤ 3500 mm
VU  Like track application V, with low-mounted torsion spring shaft (Additional hand pulley required for manually operated doors!)	WG  Like track application VU, with steep track and minimum slot width of 150 mm (for loading ramp doors) (additional chain hoist required for manually operated doors!) Not possible for door type ALR 67 Thermo Glazing and doors with wicket door or real glass infill! Door width LZ ≤ 3500 mm Door height RM ≤ 5000 mm
Note: An in-factory technical inspection is required for the following track applications!	
NK*  Like track application NS, but the degree values of both radii are adapted to the situation on site Door height RM ≤ 5000 mm	GS*  Like track application NH with 2 × 45° – double radius Door height RM ≤ 5000 mm
HS*  Like track application H with double radius 2 × 45°	HK*  Like track application HS, but the degree values of both radii are adapted to the situation on site
VS  Like track application V, but in the top sections the tracks are diverted using radii where the ceiling is too low (Additional hand pulley required for manually operated doors!)	WS  Like track application VU, but in the top sections the tracks are diverted using radii where the ceiling is too low (Additional hand pulley required for manually operated doors!) Door height RM ≥ 2200 mm
RS  Like track application HU, with 2 × 45° – double radius Door height RM ≤ 5000 mm	RK  Like track application RS, but the degree values of both radii are adapted to the situation on site Door height RM ≤ 5000 mm

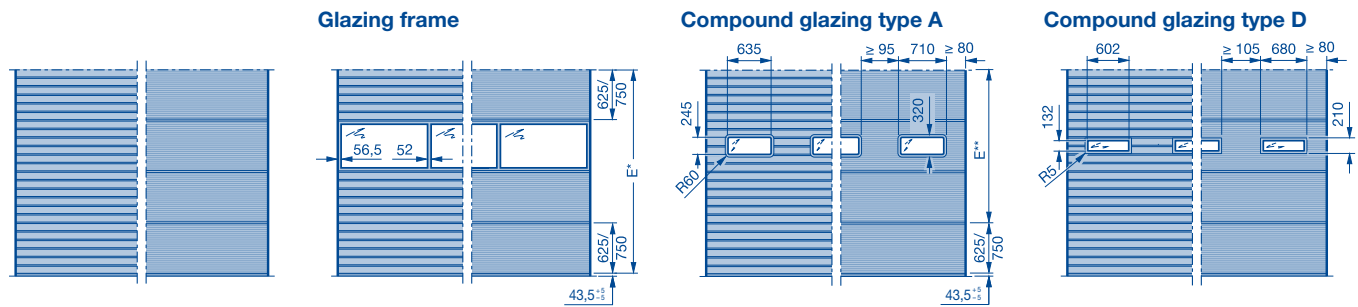
Sectional Door SPU 67 Thermo

Double-skinned steel sections

625 and 750 mm high

Stucco-textured / Micrograin

External views



E* Fitting area for frames with glazing

E** Fitting area for compound glazing

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium glazing frames or shortened top door section are possible.

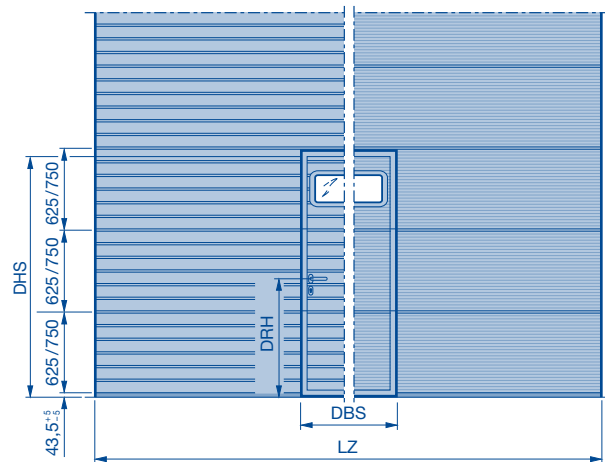
		TH 625		n ₁		TH 750													
↑	7500			7500	—		10												
	7375			7375	1	+	9												
Range 3	7250			7250	2	+	8												
	7125			7125	3	+	7												
	7000			7000	4	+	6												
	6875			6875	5	+	6												
	6750			6750	—		9												
	6625			6625	1	+	8												
	6500			6500	2	+	7												
	6375			6375	3	+	6												
	6250			6250	4	+	5												
	6125			6125	5	+	4												
	6000			6000	—		8												
	5875			5875	1	+	7												
	5750			5750	2	+	6												
	5625			5625	3	+	5												
	5500			5500	4	+	4												
	5375			5375	5	+	3												
Range 2	5250			5250	—		7												
	5125			5125	1	+	6												
	5000			5000	2	+	5												
	4875			4875	3	+	4												
	4750			4750	4	+	3												
	4625			4625	5	+	2												
	4500			4500	—		6												
	4375			4375	1	+	5												
	4250			4250	2	+	4												
	4125			4125	3	+	3												
	4000			4000	4	+	2												
	3875			3875	5	+	1												
	3750			3750	—		5												
	3625			3625	1	+	4												
	3500			3500	2	+	3												
	3375			3375	3	+	2												
Range 1	3250			3250	4	+	1												
	3125			3125	5		—												
	3000			3000	—		4												
	2875			2875	1	+	3												
	2750			2750	2	+	2												
	2625			2625	3	+	1												
	2500			2500	4		—												
	2375			2375	4****		—												
	2250			2250	—		3												
	2125			2125	1	+	2												
	2000			2000	2	+	1												
	1875			1875	3		—												
		1	2	3	4	5	Number of infills / fields per aluminium frame												
		[1]	2	3	4	5	Number of compound glazings per door section												
		1500	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000
		SPB 52																	
	LZ																		

Sectional Door SPU 67 Thermo with Wicket Door with Trip-Free Threshold

Double-skinned steel sections

625 and 750 mm high, Stucco-textured / Micrograin

External views



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted into the wicket door. No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Lever heights (DRH)

Bottom door section 625 = 960.5

Bottom door section 750 = 1085.5

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium glazing frames or shortened door section above wicket door are possible.

		SH		n ₁		DHS	
		TH 625	TH 750	TH 625	TH 750	DHS	
Range 3	7500	–	10	2195			
	7375	1	9	2195			
	7250	2	8	2195			
	7125	3	7	2195			
	7000	4	6	2195			
	6875	5	5	2195			
	6750	–	9	2195			
	6625	1	8	2195			
	6500	2	7	2195			
	6375	3	6	2195			
Range 2	6250	4	5	2195			
	6125	5	4	2195			
	6000	–	8	2195			
	5875	1	7	2195			
	5750	2	6	2195			
	5625	3	5	2195			
	5500	4	4	2195			
	5375	5	3	2195			
	5250	–	7	2195			
	5125	1	6	2195			
Range 1	5000	2	5	2195			
	4875	3	4	2195			
	4750	4	3	2195			
	4625	5	2	2070			
	4500	–	6	2195			
	4375	1	5	2195			
	4250	2	4	2195			
	4125	3	3	2195			
	4000	4	2	2070			
	3875	5	1	1945			
Range 0	3750	–	5	2195			
	3625	1	4	2195			
	3500	2	3	2195			
	3375	3	2	2070			
	3250	4	1	1945			
	3125	5	–	1820			
	3000	–	4	2195			
	2875	1	3	2195			
	2750	2	2	2070			
	2625	3	1	1945			
Range -1	2500	4	–	1820			
	2375	4***	–	1820			
	2250	–	3	2115			
	2125	1	2	1990			
	2000	2	1	1865			
		Number of infills / fields per aluminium frame					
		2	3	4	5	Number of compound glazings per door section**	
		2000	2250	2500	2750	3000	3250
		3500	3750	4000	4250	4500	4750
		5000	5250	5500	5750	6000	
		SPB 52					
		LZ					

Notes:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.
- Doors with more than 2 glazing frames on request.
- Versions with glazing S4, U4, A4, B4, M4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For information on trap guard, see page 5
- Glazings on request
- Range change
- Range change with glazing frame

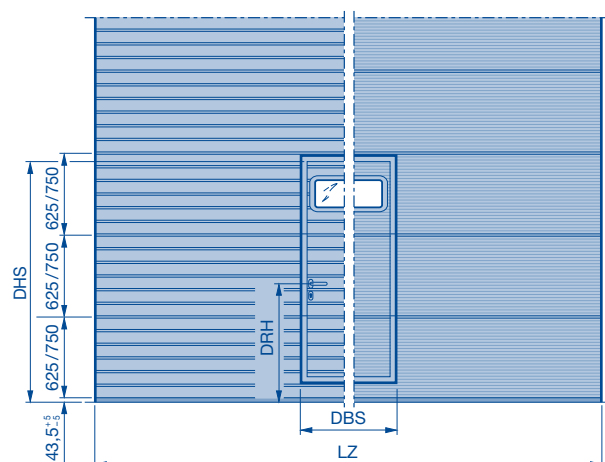
- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- SH Threshold height (rising from 5 to 10)
- SPB Rail width
- TH Door section height
- RM Grid height
- DBS Wicket door clear passage width
- DRH Lever height
- LZ Clear frame dimensions (from 1750)
- *** Top door section 500 mm

Sectional Door SPU 67 Thermo with Wicket Door and Threshold Rail

Double-skinned steel sections

625 and 750 mm high, Stucco-textured / Micrograin

External views



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted into the wicket door. No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Lever heights (DRH)

Bottom door section 625 = 960.5

Bottom door section 750 = 1085.5

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium glazing frames or shortened door section above wicket door are possible.

SH		n ₁		DHS	
		TH 625	TH 750		
Range 3	7500	–	10	2195	
	7375	1	+	9	2195
	7250	2	+	8	2195
	7125	3	+	7	2195
	7000	4	+	6	2195
	6875	5	+	5	2195
	6750	–	–	9	2195
	6625	1	+	8	2195
	6500	2	+	7	2195
	6375	3	+	6	2195
Range 2	6250	4	+	5	2195
	6125	5	+	4	2195
	6000	–	–	8	2195
	5875	1	+	7	2195
	5750	2	+	6	2195
	5625	3	+	5	2195
	5500	4	+	4	2195
	5375	5	+	3	2195
	5250	–	–	7	2195
	5125	1	+	6	2195
Range 1	5000	2	+	5	2195
	4875	3	+	4	2195
	4750	4	+	3	2195
	4625	5	+	2	2070
	4500	–	–	6	2195
	4375	1	+	5	2195
	4250	2	+	4	2195
	4125	3	+	3	2195
	4000	4	+	2	2070
	3875	5	+	1	1945
Range 0	3750	–	–	5	2195
	3625	1	+	4	2195
	3500	2	+	3	2195
	3375	3	+	2	2070
	3250	4	+	1	1945
	3125	5	–	–	1820
	3000	–	–	4	2195
	2875	1	+	3	2195
	2750	2	+	2	2070
	2625	3	+	1	1945
Range -1	2500	4	–	–	1820
	2375	4***	–	–	1820
	2250	–	–	3	2195
	2125	1	+	2	2070
	2000	2	+	1	1945
		Number of infills/fields per aluminium frame			
		Number of compound glazings per door section**			
		2	3	3	4
		2000	2250	2500	2750
		3000	3250	3500	3750
		4000	4250	4500	4750
		5000	5250	5500	
		SPB 52			
		LZ			

Notes:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.
- Doors with more than 2 glazing frames on request.
- Versions with glazing S4, U4, A4, B4, M4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For information on trap guard, see page 5
- Glazings on request

- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- SH Threshold height (215)
- SPB Rail width
- TH Door section height
- RM Grid height
- DBS Wicket door clear passage width
- DRH Lever height
- LZ Clear frame dimensions (from 1750)
- *** Top door section 500 mm

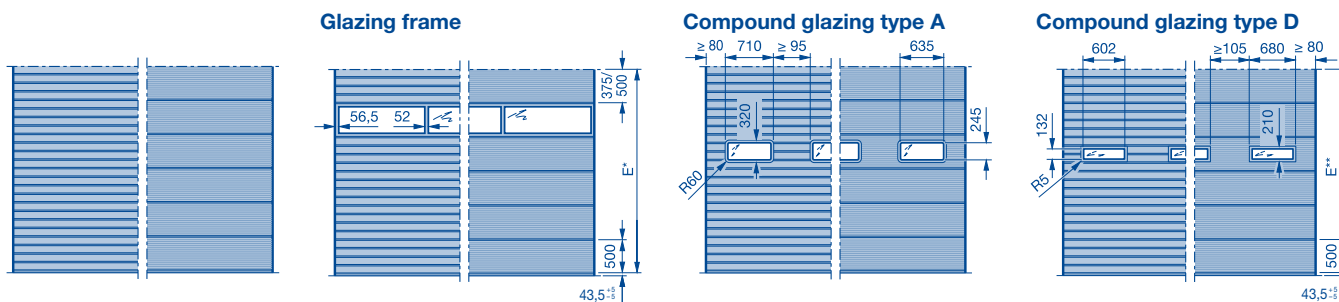
Sectional Door SPU 67 Thermo

Double-skinned steel sections

375 and 500 mm high

Stucco-textured / Micrograin

External views



E* Fitting area for frame 500 with glazing

E** Fitting area for compound glazing

Size range

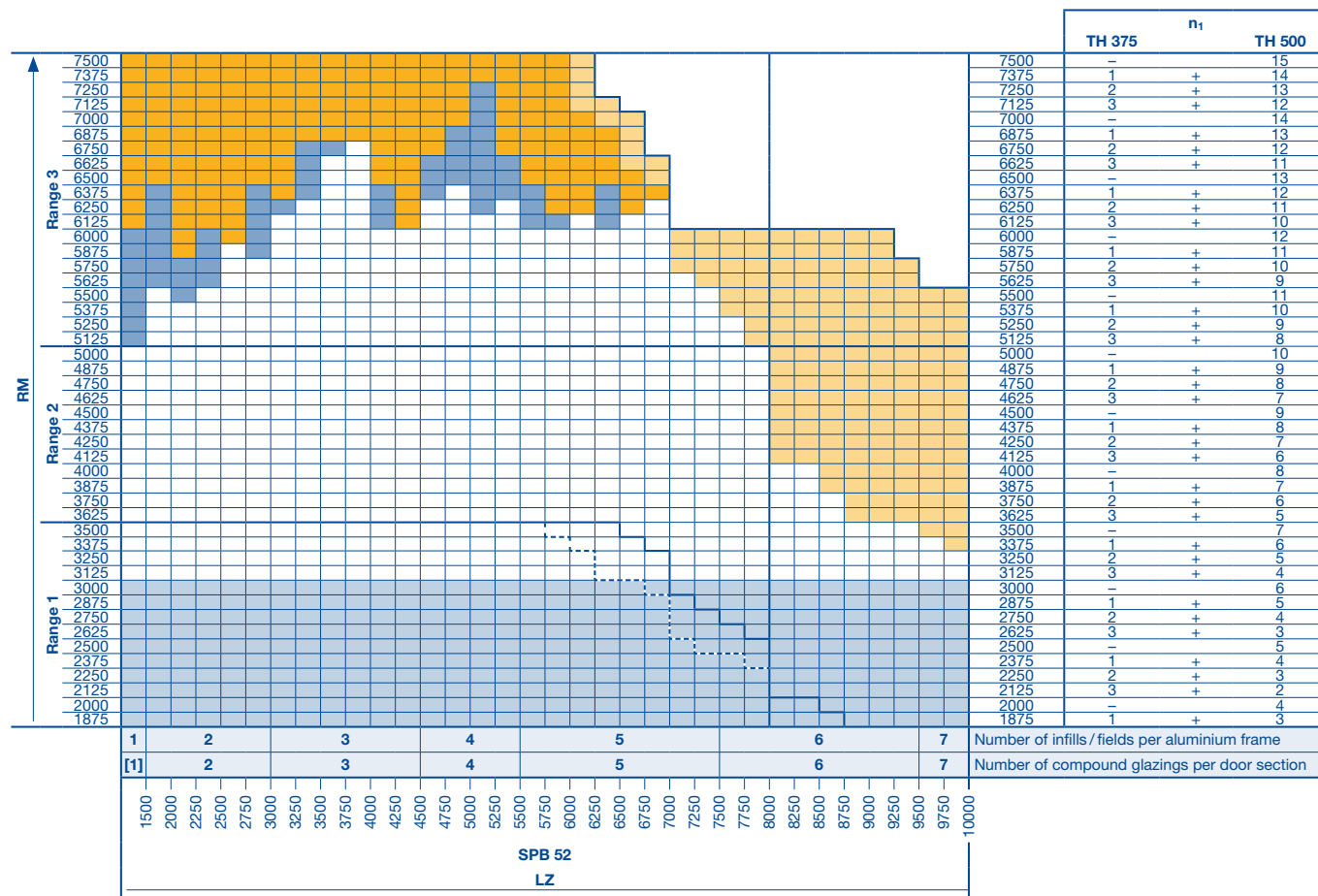
The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium glazing frames or shortened top door section are possible.

Notes:

- For a view of the matching appearance with doors with wicket door see pages 26–28.
- Doors with more than 2 glazing frames on request.
- Versions with glazing S4, U4, A4, B4, M4 on request.

- On request: torsion spring shaft or direct drive operator
- On request and only direct drive operator S140 with high-lift track application
- Versions with glazing frame on request
- For information on trap guard, see page 5
- Range change
- Range change with glazing frame

- [1] Type A → 1670, Type D → 1630
 n₁ No. of door sections
 RM Grid height
 LZ Clear frame dimensions (from 1200) up to LZ
 → Rail width
 SPB Door section height

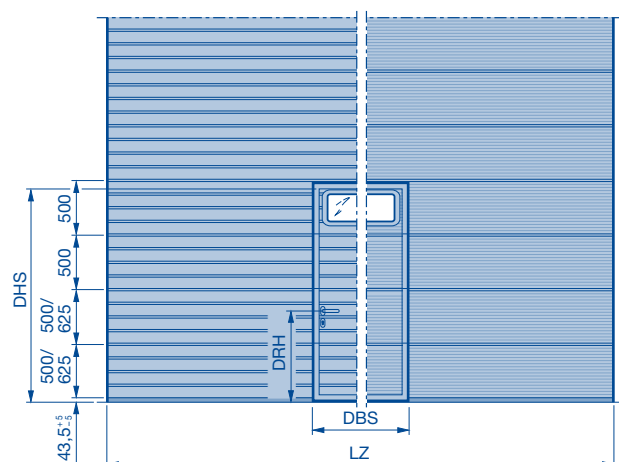


Sectional Door SPU 67 Thermo with Wicket Door with Trip-Free Threshold

Double-skinned steel sections

375 and 500 mm high, Stucco-textured / Micrograin

External view



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted into the wicket door. No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Lever heights (DRH)

Bottom door section 500 = 835.5

Bottom door section 625 = 960.5

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium glazing frames or shortened door section above wicket door are possible.

		SH ₁										SH ₂					n ₁		DHS	
																	TH 375	TH 500		
Range 3	RM	7500														7500	–	15	1945	
		7375														7375	1	+	14	1945
		7250														7250	2	+	13	1945
		7125														7125	3	+	12	1945
		7000														7000	–	14	1945	
		6875														6875	1	+	13	1945
		6750														6750	2	+	12	1945
		6625														6625	3	+	11	1945
		6500														6500	–	13	1945	
		6375														6375	1	+	12	1945
Range 2	RM	6250														6250	2	+	11	1945
		6125														6125	3	+	10	1945
		6000														6000	–	12	1945	
		5875														5875	1	+	11	1945
		5750														5750	2	+	10	1945
		5625														5625	3	+	9	1945
		5500														5500	–	11	1945	
		5375														5375	1	+	10	1945
		5250														5250	2	+	9	1945
		5125														5125	3	+	8	1945
Range 1	RM	5000														5000	–	10	1945	
		4875														4875	1	+	9	1945
		4750														4750	2	+	8	1945
		4625														4625	3	+	7	1945
		4500														4500	–	9	1945	
		4375														4375	1	+	8	1945
		4250														4250	2	+	7	1945
		4125														4125	3	+	6	1945
		4000														4000	–	8	1945	
		3875														3875	1	+	7	1945
Range 0	RM	3750														3750	2	+	6	1945
		3625														3625	3	+	5	1945
		3500														3500	–	7	1945	
		3375														3375	1	+	6	1945
		3250														3250	2	+	5	1945
		3125														3125	3	+	4	1945
		3000														3000	–	6	1945	
		2875														2875	1	+	5	1945
		2750														2750	2	+	4	1945
		2625														2625	1***	+	4	2070
Range -1	RM	2500														2500	–	5	1945	
		2375														2375	1	+	4	1945
		2250														2250	2***	+	2	2115
		2125														2125	1***	+	3	1990
		2000														2000	–	4	1865	
													Number of infills / fields per aluminium frame							
													Number of compound glazings per door section**							
													2 3 4 5							
													2000 2250 2500 2750 3000 3250 3500 3750 4000 4250 4500 4750 5000 5250 5500 5750 6000 6250 6500 6750 7000							
													SPB 52							
													LZ							

Note:

- For a view of the matching appearance with doors without wicket doors see pages 26–28.
- Doors with more than 2 glazing frames on request.
- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Versions with glazing S4, U4, A4, B4, M4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For information on trap guard, see page 5
- Glazings on request
- Range change
- Range change with glazing frame

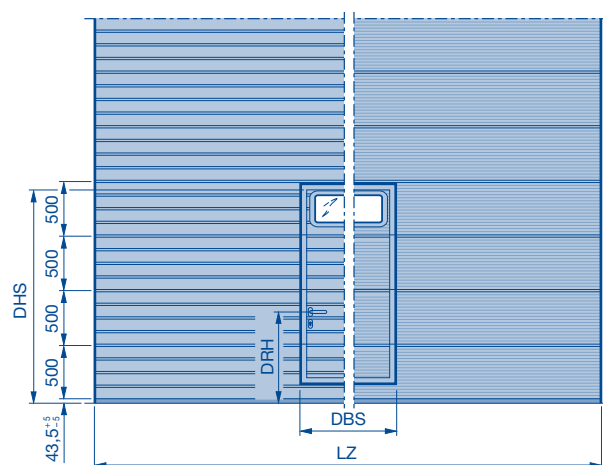
- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- RM Grid height
- LZ Clear frame dimensions (from 1750)
- SH₁ Threshold height (rising from 5 to 10)
- SH₂ Threshold height (approx. 13)
- SPB Rail width
- TH Door section height
- DBS Wicket door clear passage width
- DRH Lever height
- *** Bottom door section TH = 625

Sectional Door SPU 67 Thermo with Wicket Door and Threshold Rail

Double-skinned steel sections

375 and 500 mm high, Stucco-textured / Micrograin

External view



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted into the wicket door. No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Lever heights (DRH)

Bottom door section 500 = 835.5

Bottom door section 625 = 960.5 (only for SH₂)

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium glazing frames or shortened door section above wicket door are possible.

		SH ₁										SH ₂										n ₁		DHS	
																						TH 375	TH 500		
Range 3	7500																				7500	–	15	1945	
	7375																				7375	1	+	14	1945
	7250																				7250	2	+	13	1945
	7125																				7125	3	+	12	1945
	7000																				7000	–	14	1945	
	6875																				6875	1	+	13	1945
	6750																				6750	2	+	12	1945
	6625																				6625	3	+	11	1945
	6500																				6500	–	13	1945	
	6375																				6375	1	+	12	1945
Range 2	6250																				6250	2	+	11	1945
	6125																				6125	3	+	10	1945
	6000																				6000	–	12	1945	
	5875																				5875	1	+	11	1945
	5750																				5750	2	+	10	1945
	5625																				5625	3	+	9	1945
	5500																				5500	–	11	1945	
	5375																				5375	1	+	10	1945
	5250																				5250	2	+	9	1945
	5125																				5125	3	+	8	1945
Range 1	5000																				5000	–	10	1945	
	4875																				4875	1	+	9	1945
	4750																				4750	2	+	8	1945
	4625																				4625	3	+	7	1945
	4500																				4500	–	9	1945	
	4375																				4375	1	+	8	1945
	4250																				4250	2	+	7	1945
	4125																				4125	3	+	6	1945
	4000																				4000	–	8	1945	
	3875																				3875	1	+	7	1945
Range 0	3750																				3750	2	+	6	1945
	3625																				3625	3	+	5	1945
	3500																				3500	–	7	1945	
	3375																				3375	1	+	6	1945
	3250																				3250	2	+	5	1945
	3125																				3125	3	+	4	1945
	3000																				3000	–	6	1945	
	2875																				2875	1	+	5	1945
	2750																				2750	2	+	4	1945
	2625																				2625	–	5***	2070	
	2500																				2500	–	5	1945	
Range -1	2375																				2375	1	+	4	1945
	2250																				2250	2	+	3	1820
	2125																				2125	–	4***	2070	
	2000																				2000	–	4	1945	
		3					4					5					Number of infills/fields per aluminium frame								
		2		3			4			5			Number of compound glazings per door section**												
		2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000			
		SPB 52																							
		LZ																							

Notes:

- Micrograin version only up to LZ ≤ 5500 mm.
- From LZ > 5500 mm bottom door section with deviating heights TH = 625 / 750 mm (made of 375 / 500 mm sections and 2 × 125 mm aluminium bottom profile).
- For a view of the matching appearance with doors without wicket doors see pages 26–28.
- Doors with more than 2 glazing frames on request.
- For versions with real glass infill in the wicket door, the threshold height SH₂ begins at LZ 4510 mm.
- Versions with glazing S4, U4, A4, B4, M4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For information on trap guard, see page 5
- Glazings on request
- Range change
- Range change with glazing frame

- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- RM Grid height
- LZ Clear frame dimensions (from 1750)
- SH₁ Threshold height (215)
- SH₂ Threshold height (312), bottom door section with 250 mm aluminium bottom section, glazing from 625 mm
- SPB Rail width
- TH Door section height
- DBS Wicket door clear passage width
- *** Bottom door section TH = 625

Glazing Heights for Matching External Appearance SPU 67 Thermo Stucco-Textured

(Centre of window from FFL)

Door section heights 500, 625 and 750 mm

Glazing heights for matching external appearance of compound windows type A and D.

RM	Glazing heights (centre of window from FFL)											
	1160	1285	1535	1660	1785	1910	2035	2160	2285	2410	2535	2660
7500		X			X							
7375	X	X		X	X							X
7250	X	X	X	X	X		X		X		X	X
7125	X	X	X	X	X	X	X	X	X	X	X	X
7000		X			X				X			
6875	X	X		X	X			X	X			X
6750	X	X			X		X				X	X
6625	X	X		X	X	X	X			X	X	X
6500		X			X				X			
6375	X	X		X	X			X	X			X
6250	X	X	X	X	X		X	X	X		X	X
6125	X	X	X	X	X	X	X	X	X	X	X	X
6000		X			X							
5875	X	X		X	X							X
5750	X	X	X	X	X		X		X		X	X
5625	X	X	X	X	X	X	X	X	X	X	X	X
5500		X			X				X			
5375	X	X		X	X			X	X			X
5250	X	X			X		X				X	X
5125	X	X		X	X	X	X			X	X	X
5000		X			X				X			
4875	X	X		X	X			X	X			X
4750	X	X	X	X	X		X	X	X		X	X
4625	X	X	X	X	X	X		X	X	X	X	
4500		X			X							
4375	X	X		X	X							X
4250	X	X	X	X	X	X	X		X	X	X	X
4125	X	X	X	X	X	X	X	X	X	X	X	X
4000		X			X				X			
3875	X			X	X			X	X			
3750	X	X			X		X				X	X
3625	X	X		X	X	X	X			X	X	X
3500		X			X				X			
3375	X	X		X	X				X			
3250	X		X	X	X			X	X			
3125			X	X				X				
3000		X			X							
2875	X	X		X	X							X
2750	X	X	X	X	X						X	
2625	X		X	X						X		
2500									X			
2375				X				X				
2250	X	X					X					
2125	X					X						
2000					X							
1875				X								

RM Grid height

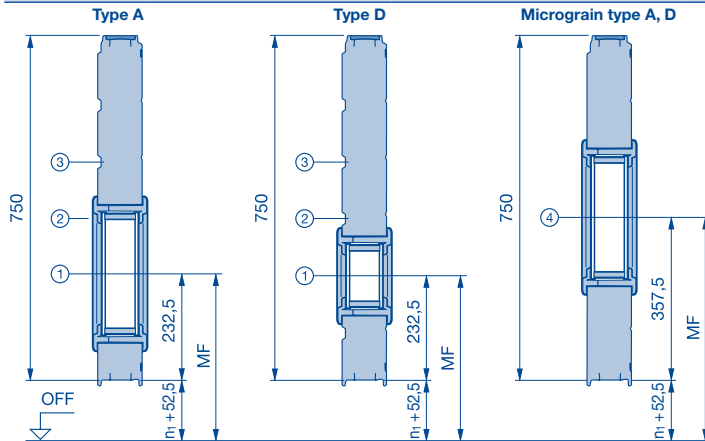
Calculating the Glazing Heights for SPU 67 Thermo

(Centre of window from FFL)

Door section heights 500, 625 and 750 mm

Calculating the glazing heights for compound windows type A and type D.
See door type for number of door sections and glazing areas. Depth 67 mm.

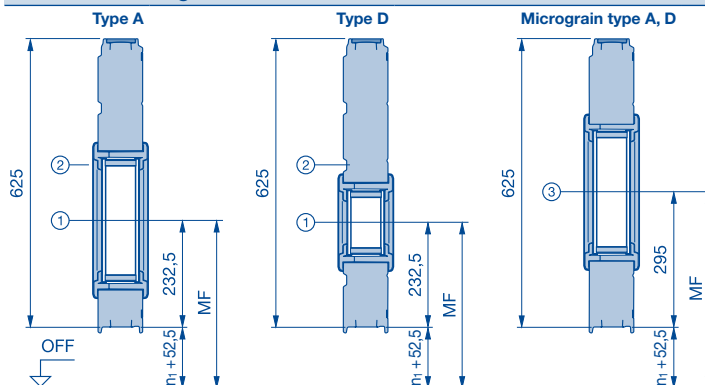
Door section height 750 mm



Glazing height type A and D

- ① = $n_1 + 52.5 + 232.5$
- ② = $n_1 + 52.5 + 232.5 + 125$
- ③ = $n_1 + 52.5 + 232.5 + 250$
- ④ = $n_1 + 52.5 + 357.5$

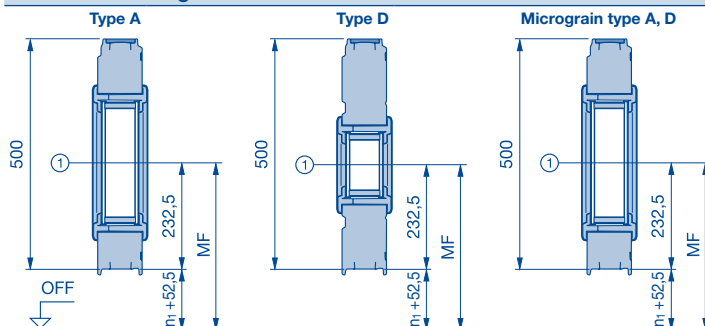
Door section height 625 mm



Glazing height type A and D

- ① = $n_1 + 52.5 + 232.5$
- ② = $n_1 + 52.5 + 232.5 + 125$
- ③ = $n_1 + 52.5 + 295$

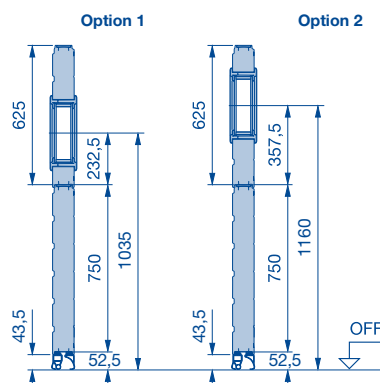
Door section height 500 mm



Glazing height type A and D

- ① = $n_1 + 52.5 + 232.5$

Calculation example



Given:

- Door type SPU 67 Thermo; grid height (RM) = 3250 mm; glazing type A;
- position see below number of door sections (see table of door types)
- Door section 625 mm = 4 units
- Door section 750 mm = 1 unit

Option	Door section / position	Glazing height
1	In 2nd door section 625 mm at position 1	$750 + 52.5 + 232.5 = 1035$ mm from FFL
2	In 2nd door section 625 mm at position 2	$750 + 52.5 + 232.5 + 125 = 1160$ mm from FFL
3	In 3rd door section 625 mm at position 1	$750 + 625 + 52.5 + 232.5 = 1660$ mm from FFL
4	In 3rd door section 625 mm at position 2	$750 + 625 + 52.5 + 232.5 + 125 = 1785$ mm from FFL
etc.		

MF Centre of window from FFL

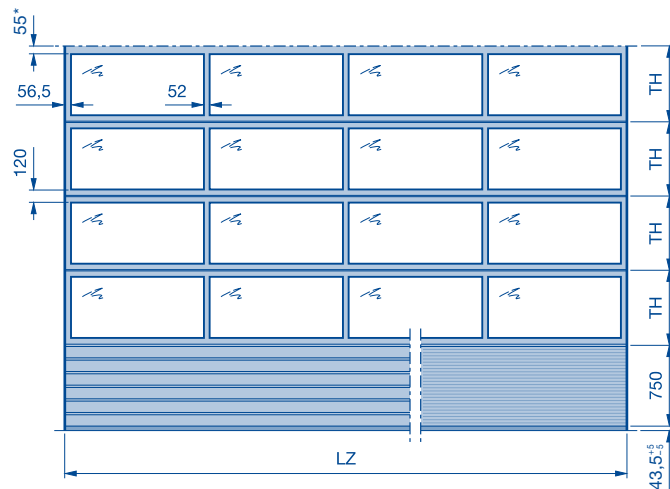
n_1 No. of door sections

Sectional Door APU 67 Thermo

Aluminium extrusions with thermal break

Double-skinned bottom section

External view



$$TH = \frac{\text{Door height} - \text{bottom section height} - 35}{\text{Number of door section frames}}$$

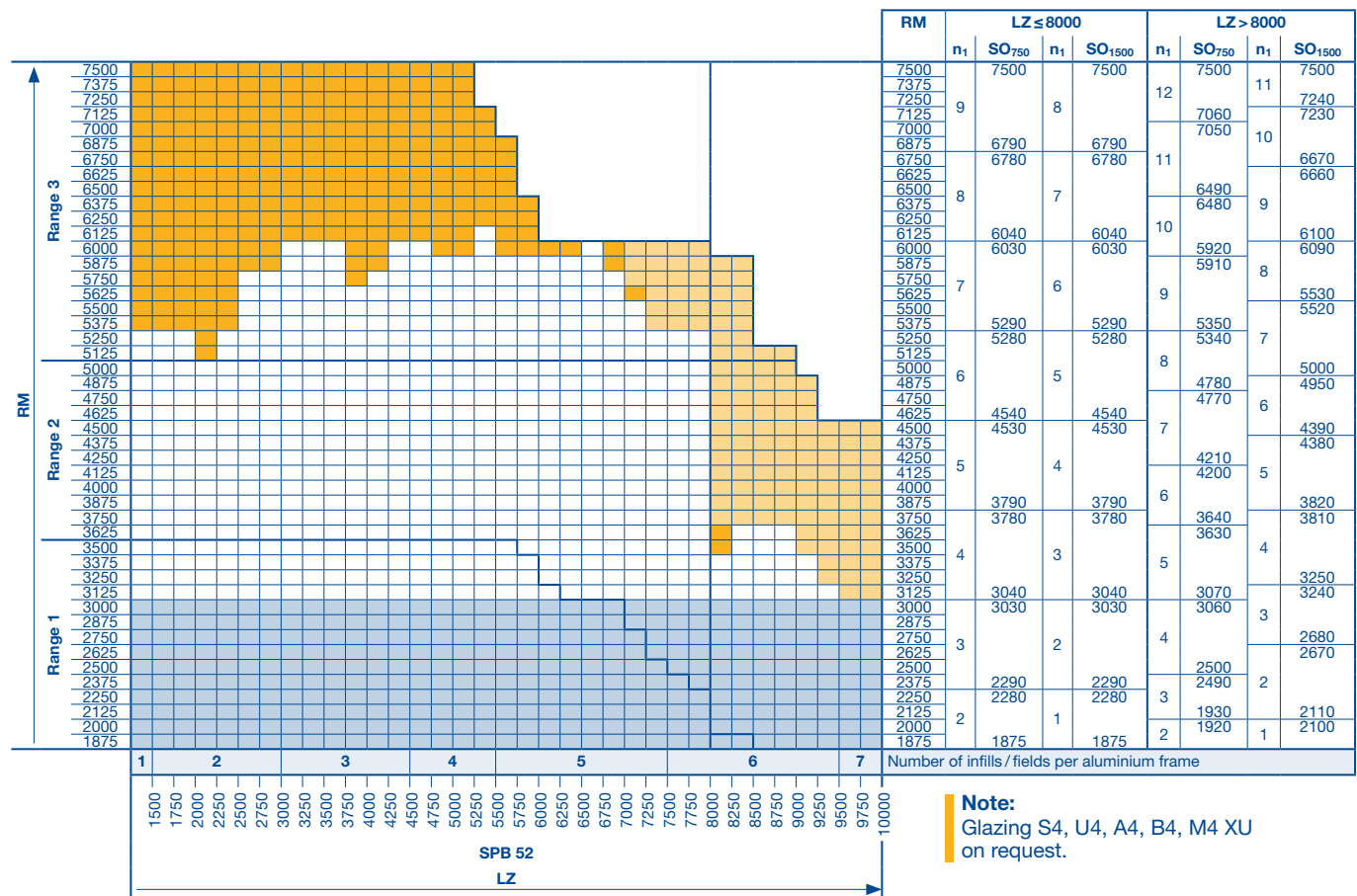
* On request 115 mm, so as to match the appearance of a sectional door with wicket door with trip-free threshold with the same door height.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For a view of the matching appearance with doors with wicket door see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.



Note:

Glazing S4, U4, A4, B4, M4 XU on request.

- On request: torsion spring shaft or direct drive operator
- On request and only direct drive operator S140 with high-lift track application
- For information on trap guard, see page 5
- Range change

Number of door section frames:

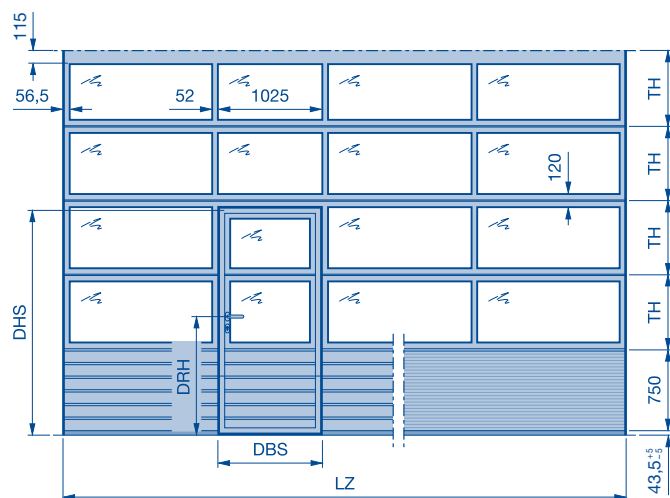
- SO₇₅₀ Bottom section height 750 mm (standard)
- SO₁₅₀₀ Bottom section height 1500 mm
- n₁ Number of aluminium frames
- RM Grid height
- LZ Clear frame dimensions (from 1200)
- SPB Rail width
- TH Door section height

Sectional Door APU 67 Thermo with Wicket Door with Trip-Free Threshold

Aluminium extrusions with thermal break

Bottom section height 750

External view



Lever height on request

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS)
= $Sn_1 \times TH + (\text{bottom section height} - 55^*)$

Sn_1 Number of frames in the wicket door

* Attention: If there is no frame above the wicket door, then -100 instead of -55.

** For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.

		SH ₁										SH ₂										n ₁	Height	RM	DHS	Sn ₁	Height						
RM	↑																							3	4	5	Number of infills / fields per aluminium frame						
																												7500	7500	2187	2	2430	
																												7375	7375	2159			
																												7250	7250	2132			
																												7125	7125	2104			
																												7000	7000	2076			
																												6875	6875	2048			
																												6750	6780	6750	2186	2	2420
																												6625	6625	2155			
																												6500	6500	2124			
																												6375	6375	2093			
																												6250	6250	2061			
																												6125	6125	2030			
																												6000	6030	6000	2185	2	2000
																												5875	5875	2149			
																												5750	5750	2114			
																												5625	5625	2078			
																												5500	5500	2042			
																												5375	5375	2006			
																												5250	5280	5250	2183	2	2000
																												5125	5125	2142			
																												5000	5000	2100			
																												4875	4875	2058			
4750	4750	2017																															
4625	4625	1975																															
4500	4530	4500	2181	2	2000																												
4375	4375	2131																															
4250	4250	2081																															
4125	4125	2031																															
4000	4000	1981																															
3875	3875	1931																															
3750	3780	3750	2178	2	2000																												
3625	3625	2115																															
3500	3500	2053																															
3375	3375	1990																															
3250	3250	1928																															
3125	3125	1865																															
3000	3040	3000	2172	2	2000																												
2875	2875	2088																															
2750	2750	2005																															
2625	2625	1922																															
2500	2500	1838																															
2375	2375	2240																															
2250	2280	2250	2115	3	2000																												
2125	2125	1990																															
2000	2000	2000	1865	2	2000																												
		SPB 52																															
		LZ																															

Notes:

- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4 U4 A4 B4 M4 XU on request

Notes:

- For versions with real glass infill in the wicket door, the threshold height SH₂ begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4 XU on request.

- On request: torsion spring shaft or direct drive operator
- On request and only direct drive operator S140 with high-lift track application
- For information on trap guard, see page 5
- Range change
- DHS Clear passage heights of wicket door to grid height
- DBS Wicket door clear passage width

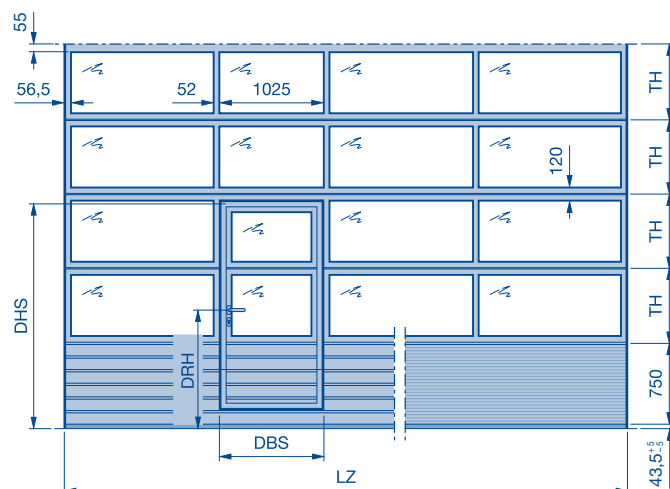
- DRH Lever height
- LZ Clear frame dimensions (from 1750)
- RM Grid height
- SPB Rail width
- SH₁ Threshold height (rising from 5 to 10)
- SH₂ Threshold height (approx. 13)
- n₁ Number of aluminium frames
- Sn₁ Number of aluminium frames in the wicket door
- TH Door section height

Sectional Door APU 67 Thermo with Wicket Door and Threshold Rail

Aluminium extrusions with thermal break

Bottom section height 750

External view



Lever height on request

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS)

$$= S n_1 \times TH + (\text{bottom section height} - 55)$$

Sn₁ Number of frames in the wicket door

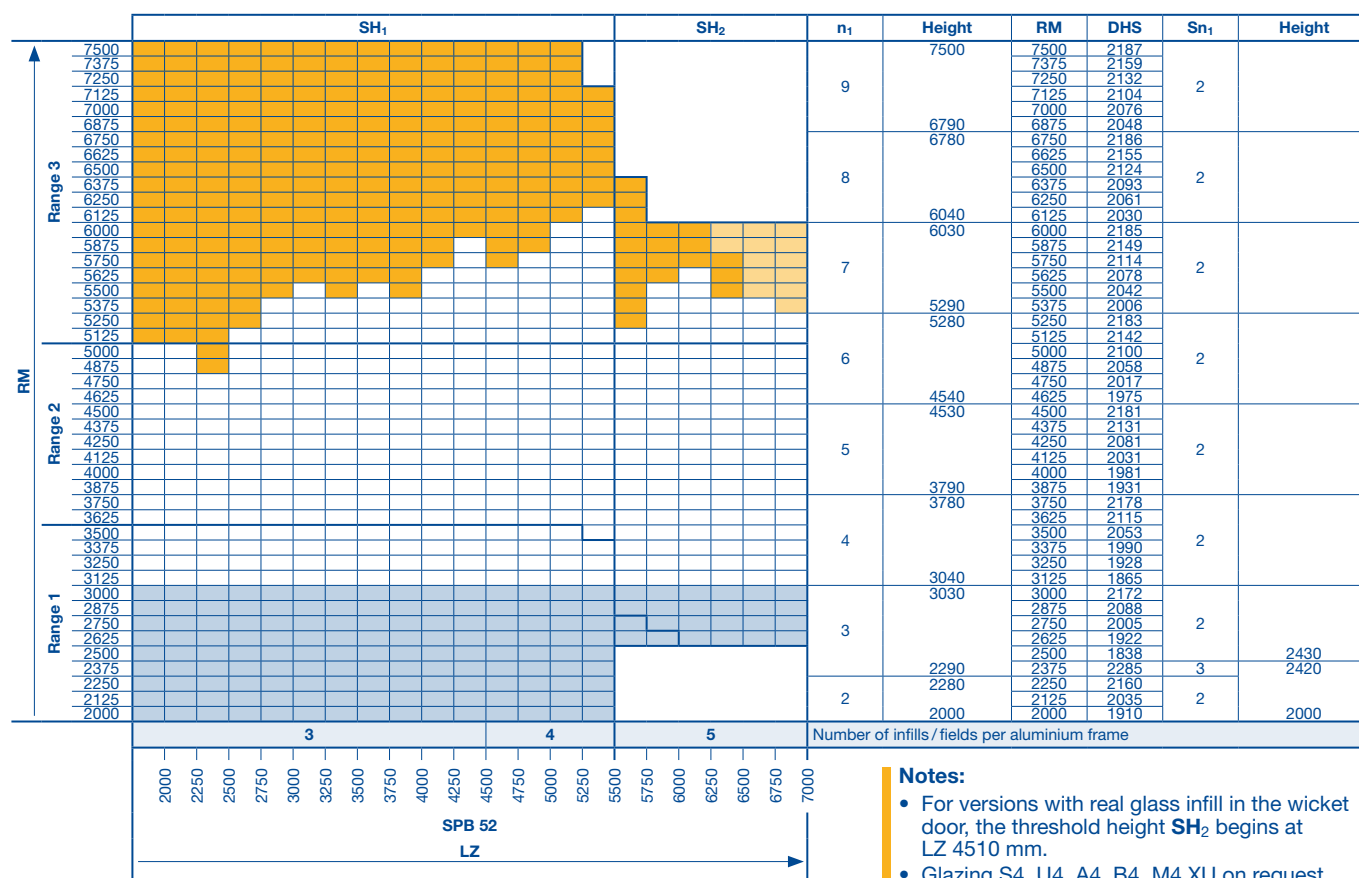
* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- Micrograin version only up to door width ≤ 5500 mm.
- Bottom door section made of 375/500 mm section and 2×125 mm aluminium bottom profile for door widths > 5500 mm.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.



Notes:

- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4 XU on request.

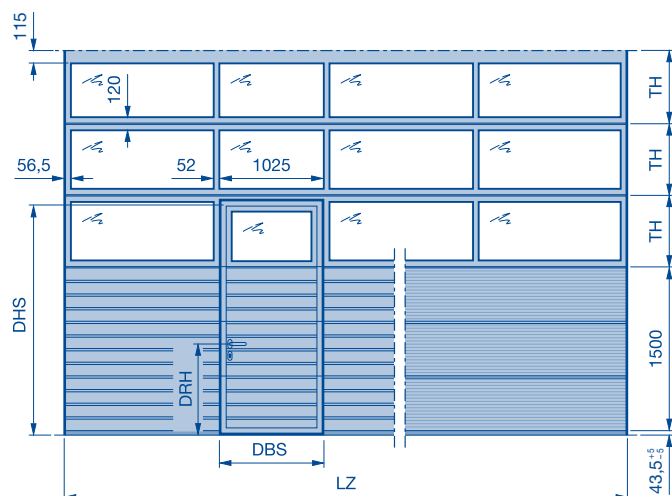
	On request: torsion spring shaft or direct drive operator	DRH	Lever height
	On request and only direct drive operator S140 with high-lift track application	LZ	Clear frame dimensions (from 1750)
	For information on trap guard, see page 5	RM	Grid height
		SPB	Rail width
		SH₁	Threshold height (215)
		SH₂	Threshold height (312)
		n₁	Number of aluminium frames
DHS	Clear passage heights of wicket door to grid height	Sn₁	Number of aluminium frames in the wicket door
DBS	Wicket door clear passage width	TH	Door section height

Sectional Door APU 67 Thermo with Wicket Door with Trip-Free Threshold

Aluminium extrusions with thermal break

Bottom section height 1500

External view



Lever height (DRH):

$LZ \leq 6000 = 1080,5$

$LZ > 6000 = 830,5$

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS)

$= Sn_1 \times TH + (\text{bottom section height} - 55^*)$

Sn_1 Number of frames in the wicket door

* Attention: If there is no frame above the wicket door, then - 100 instead of -55.

** For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.

		SH ₁										SH ₂										n ₁	Height	RM	DHS	Sn ₁	Height																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Notes:

- For versions with real glass infill in the wicket door, the threshold height SH₂ begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4 XU on request.

- On request: torsion spring shaft or direct drive operator
- On request and only direct drive operator S140 with high-lift track application
- For information on trap guard, see page 5
- Range change
- DHS Clear passage heights of wicket door to grid height
- DBS Wicket door clear passage width

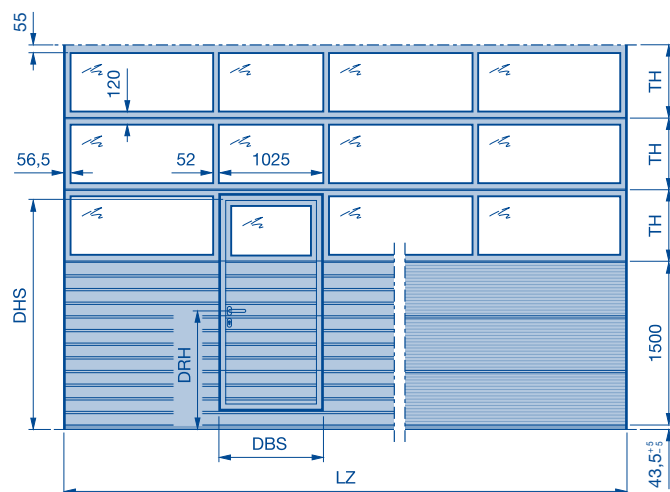
- DRH Lever height
- LZ Clear frame dimensions (from 1750)
- RM Grid height
- SPB Rail width
- SH₁ Threshold height (rising from 5 to 10)
- SH₂ Threshold height (approx. 13)
- n₁ Number of aluminium frames
- Sn₁ Number of aluminium frames in the wicket door
- TH Door section height

Sectional Door APU 67 Thermo with Wicket Door and Threshold Rail

Aluminium extrusions with thermal break

Bottom section height 1500

External view



Lever height on request

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS)
= $Sn_1 \times TH + (\text{bottom section height} - 55)$

Sn_1 Number of frames in the wicket door

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- Micrograin version only up to door width ≤ 5500 mm.
- Bottom door section made of 375/500 mm section and 2 x 125 mm aluminium bottom profile for door widths > 5500 mm.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.

		SH ₁										SH ₂										n ₁	Height	RM	DHS	Sn ₁	Height																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Notes:

- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4 XU on request.

On request: torsion spring shaft or direct drive operator

On request and only direct drive operator S140 with high-lift track application

For information on trap guard, see page 5

Range change

DHS Clear passage heights of wicket door to grid height
DBS Wicket door clear passage width

DRH Lever height
LZ Clear frame dimensions (from 1750)

RM Grid height
SPB Rail width

SH₁ Threshold height (215)

SH₂ Threshold height (312)

n₁ Number of aluminium frames

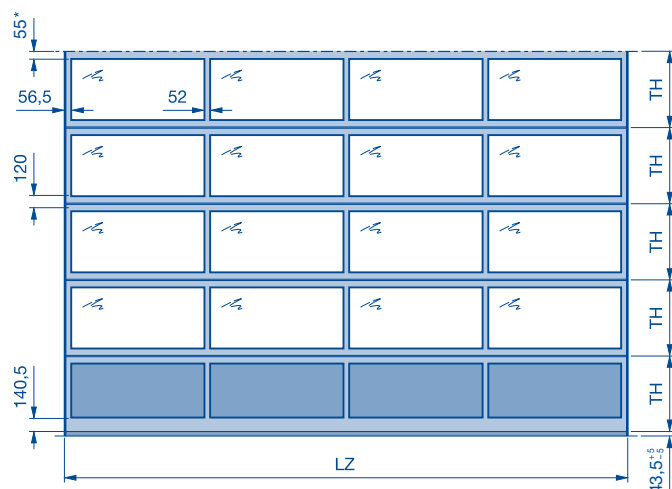
Sn₁ Number of aluminium frames in the wicket door

TH Door section height

Sectional Door ALR 67 Thermo

Door leaf made of aluminium extrusions with thermal break

External view



$$TH = \frac{\text{Door height} - 35}{\text{Number of door section frames}}$$

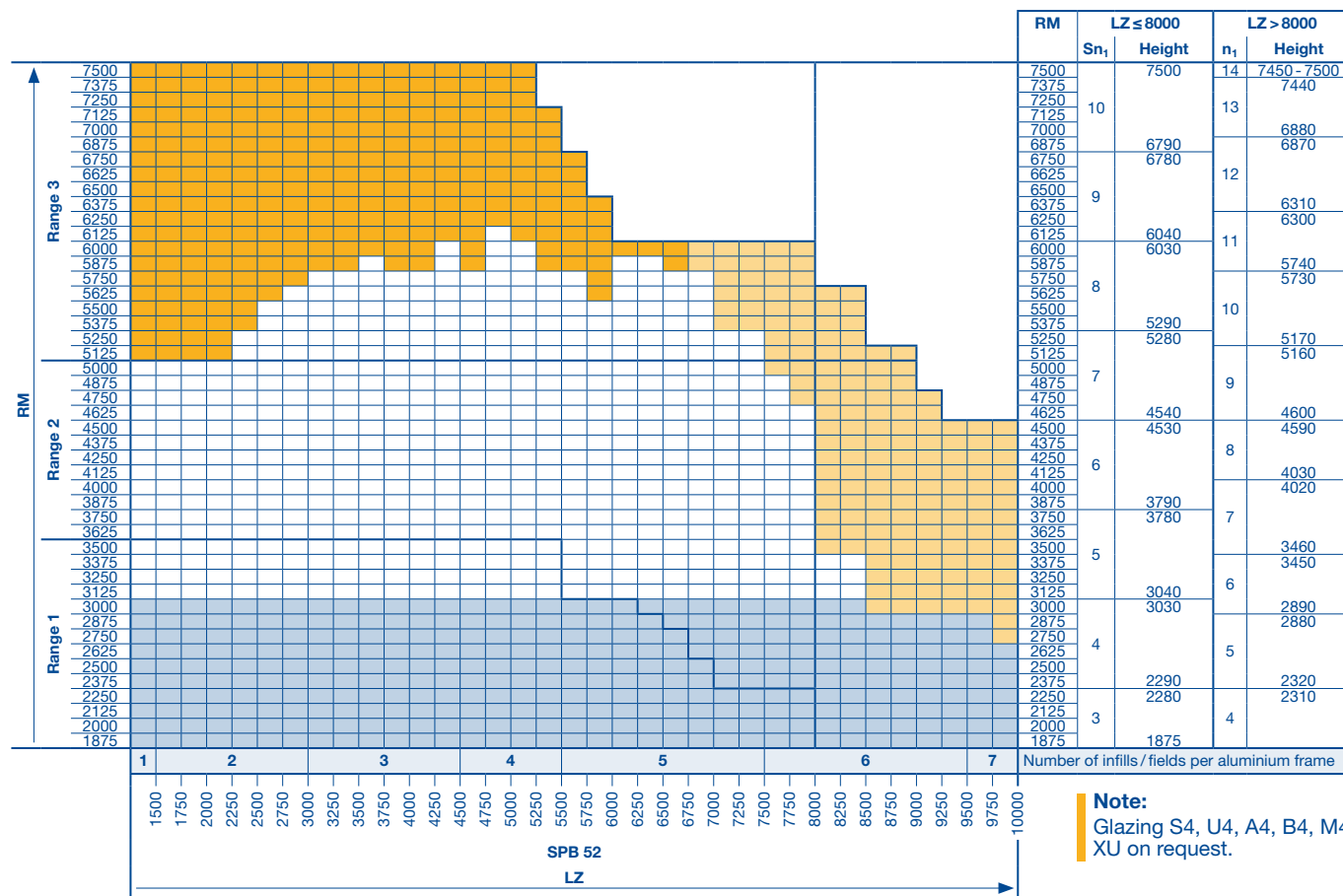
- * On request 115 mm, so as to match the appearance of a sectional door with wicket door with trip-free threshold with the same door height.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For door widths from 5510 mm, diagonal struts are fitted into the bottom door section (not visible with closed infills).
- For a view of the matching appearance with doors with wicket door see pages 26 – 28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.



Note:

Glazing S4, U4, A4, B4, M4
XU on request.

- On request: torsion spring shaft or direct drive operator
- On request and only direct drive operator S140 with high-lift track application
- For information on trap guard, see page 5

- Sn₁ Number of aluminium frames in the wicket door
- RM Grid height
- LZ Clear frame dimensions (from 1200)
- SPB Rail width
- TH Door section height

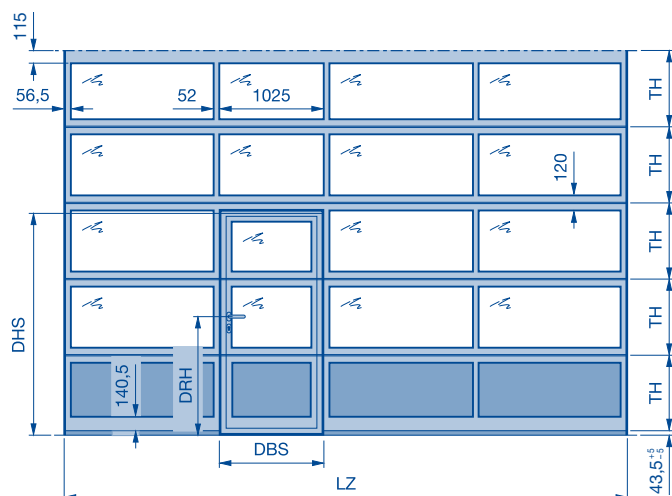
Range change

n₁ Number of aluminium frames

Sectional Door ALR 67 Thermo with Wicket Door with Trip-Free Threshold

Door leaf made of aluminium extrusions with thermal break

External view



Lever height on request

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS) = $S_{n1} \times TH - 55^*$

S_{n1} Number of frames in the wicket door

* Attention: If there is no frame above the wicket door, then - 100 instead of - 55.

** For a door width of 1750–1840 mm, the clear passage width is 833 mm.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For door widths from 5510 mm (from 4510 mm with real glass infill in the wicket door), diagonal struts are fitted into the bottom door section – not visible with closed infills.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.

Size range

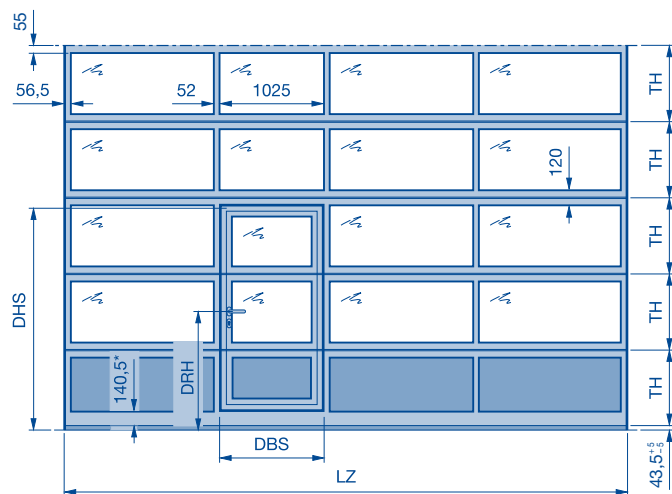
The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.

		SH ₁										SH ₂										n ₁	Height	RM	DHS	S _{n1}	Height																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Sectional Door ALR 67 Thermo with Wicket Door and Threshold Rail

Door leaf made of aluminium extrusions with thermal break

External view



Lever height on request

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS) = $S_{n1} \times TH - 55$

Sn_1 Number of frames in the wicket door

* 265.5 with SH₂

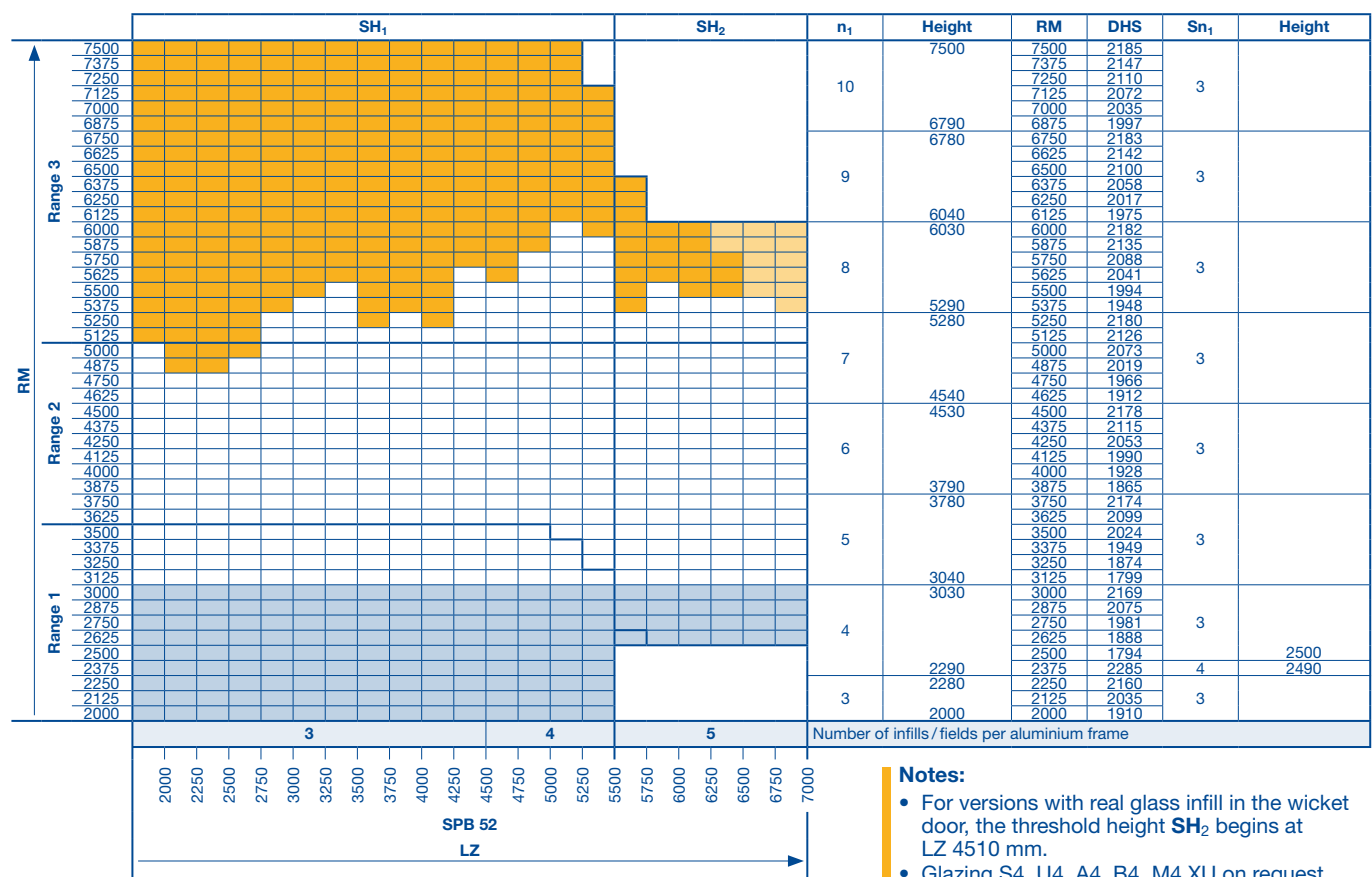
** For a door width of 1750–1840 mm, the clear passage width is 798 mm.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For a view of the matching appearance with doors without wicket doors see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.



Notes:

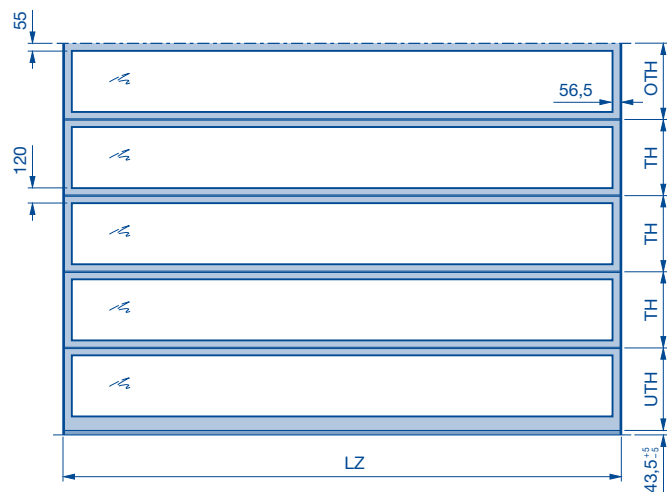
- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4 XU on request.

	On request: torsion spring shaft or direct drive operator	DRH	Lever height
	On request and only direct drive operator S140 with high-lift track application	LZ	Clear frame dimensions (from 1750)
	For information on trap guard, see page 5	RM	Grid height
		SPB	Rail width
		SH₁	Threshold height (187)
		SH₂	Threshold height (312)
	Range change	n₁	Number of aluminium frames
DHS	Clear passage heights of wicket door to grid height	SN₁	Number of aluminium frames in the wicket door
DBS	Wicket door clear passage width	TH	Door section height

Sectional Door ALR 67 Thermo Glazing

Door leaf made of aluminium extrusions with thermal break

External view



$$TH = \frac{\text{Door height} - 119}{\text{Number of door section frames}}$$

$$UTH = TH + 84 \leq 785$$

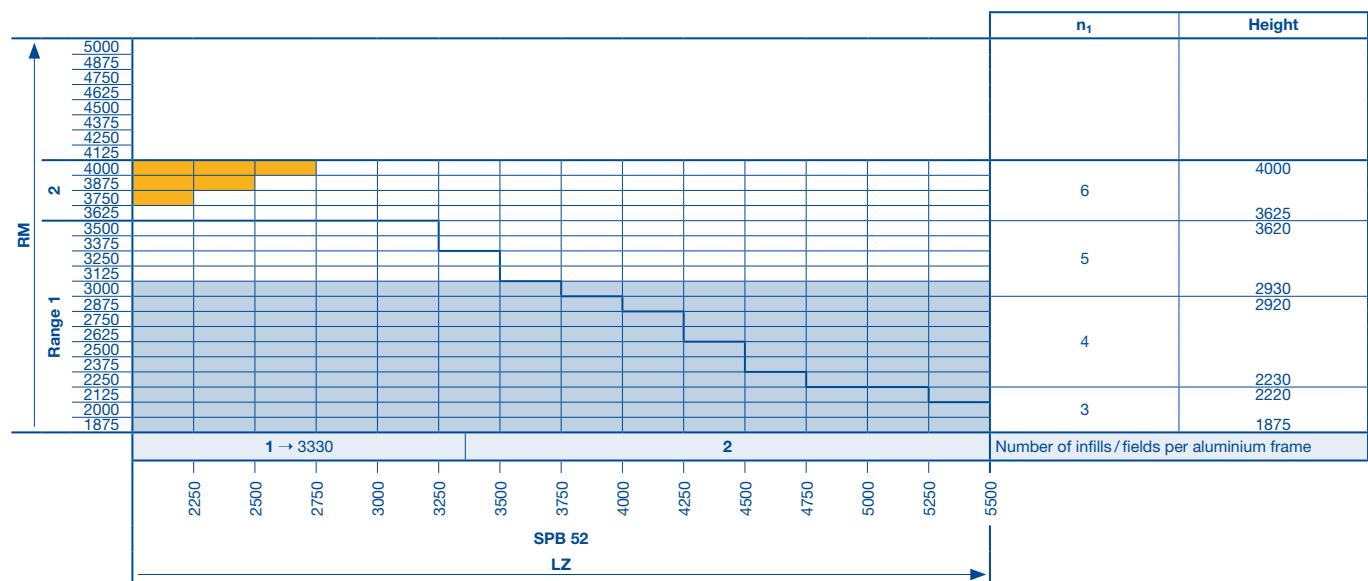
OTH = TH 35

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- All track applications on request.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments.



 On request

 For information on trap guard, see page 5

Range change

RM	Grid height
----	-------------

LZ Clear frame dimensions (from 2000)

→ up to LZ

SPB Rail width

n_1 Number of aluminium frames

UTH Bottom door section height

TH Door section height

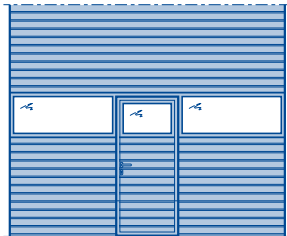
OTH Upper door section height

Glazing / Wicket Door Arrangements

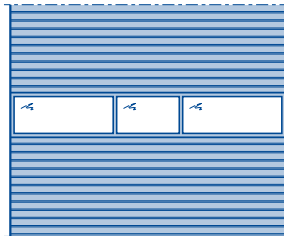
Sectional doors with 3 infills / fields

Glazing arrangements – external view

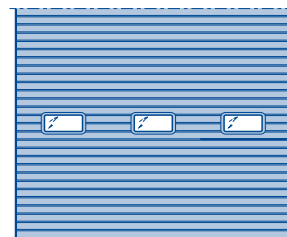
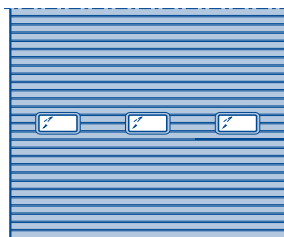
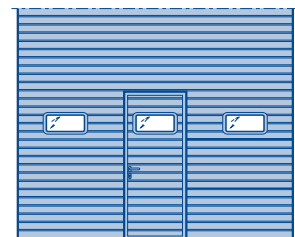
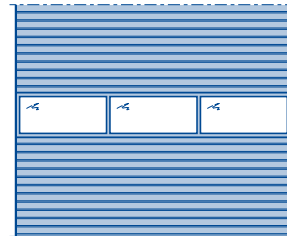
Sectional Door SPU 67 Thermo
with Wicket Door with Trip-Free Threshold



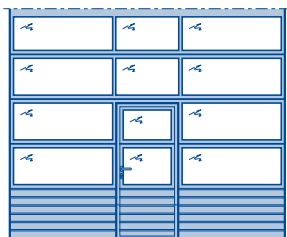
Sectional door SPU 67 Thermo,
matching doors with wicket door



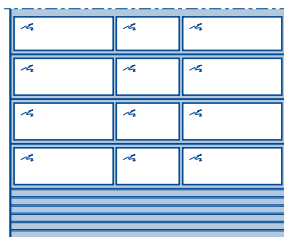
Sectional door SPU 67 Thermo
with standard window division



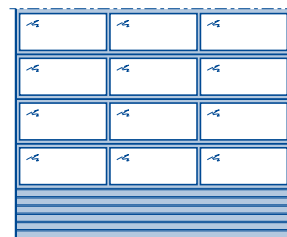
Sectional Door APU 67 Thermo
with Wicket Door with Trip-Free Threshold



Sectional door APU 67 Thermo,
matching doors with wicket door



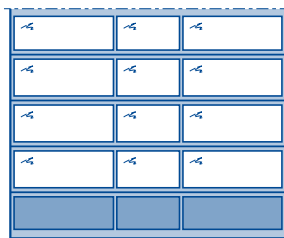
Sectional door APU 67 Thermo
with standard window division



Sectional Door ALR 67 Thermo
with Wicket Door with Trip-Free Threshold



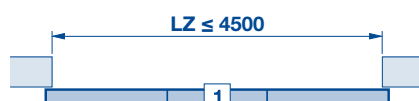
Sectional door ALR 67 Thermo,
matching doors with wicket door



Sectional door ALR 67 Thermo
with standard window division



Arrangement of the wicket door



Notes:

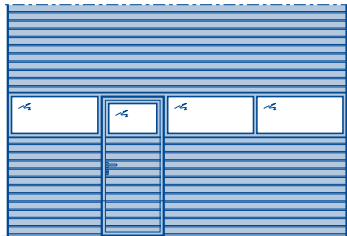
- Wicket door clear passage (DBS) = 905 mm.
- Wicket door only opening outwards.

Glazing / Wicket Door Arrangements

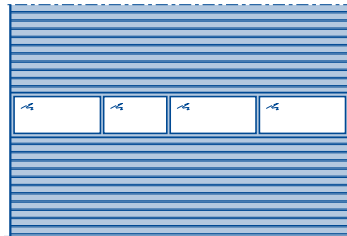
Sectional doors with 4 infills / fields

Glazing arrangements – external view

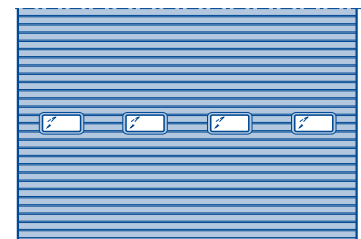
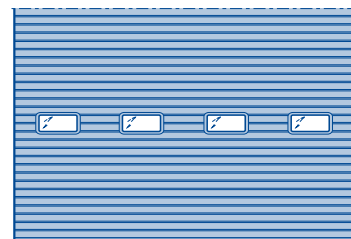
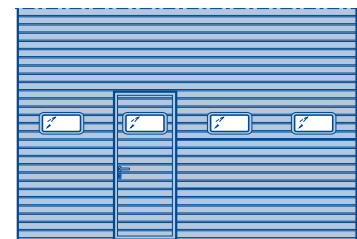
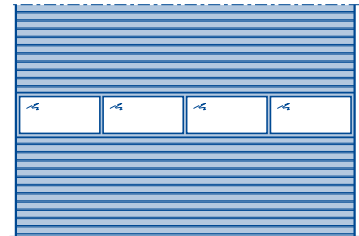
Sectional Door SPU 67 Thermo
with Wicket Door with Trip-Free Threshold



Sectional door SPU 67 Thermo,
matching doors with wicket door



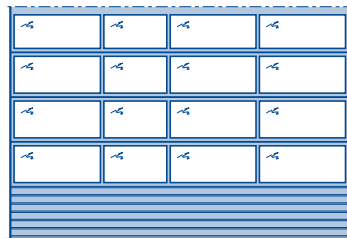
Sectional door SPU 67 Thermo
with standard window division



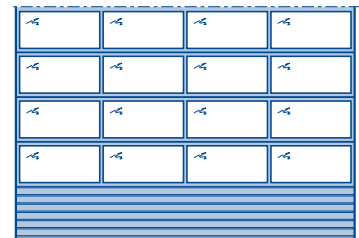
Sectional Door APU 67 Thermo
with Wicket Door with Trip-Free Threshold



Sectional door APU 67 Thermo,
matching doors with wicket door



Sectional door APU 67 Thermo
with standard window division



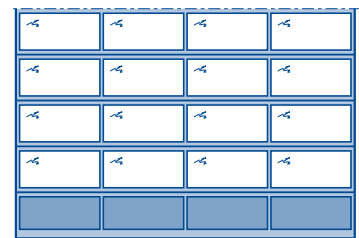
Sectional Door ALR 67 Thermo
with Wicket Door with Trip-Free Threshold



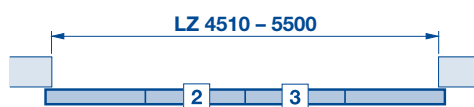
Sectional door ALR 67 Thermo,
matching doors with wicket door



Sectional door ALR 67 Thermo
with standard window division



Arrangement of the wicket door



Notes:

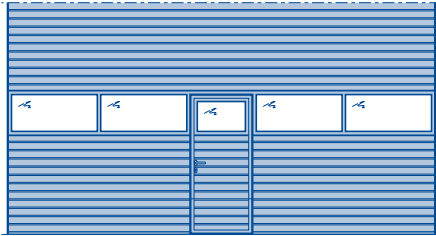
- Wicket door clear passage (DBS) = 905 mm.
- Wicket door only opening outwards.

Glazing / Wicket Door Arrangements

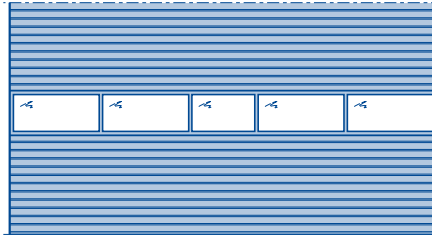
Sectional doors with 5 infills / fields

Glazing arrangements – external view

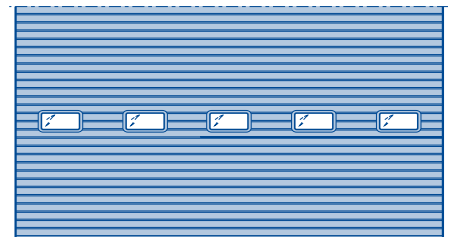
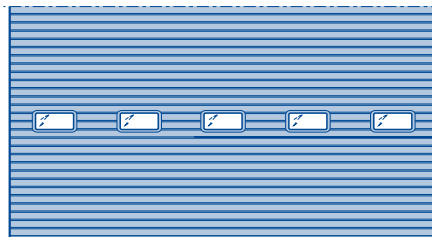
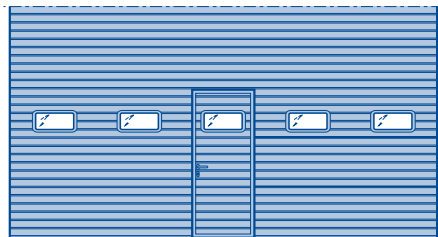
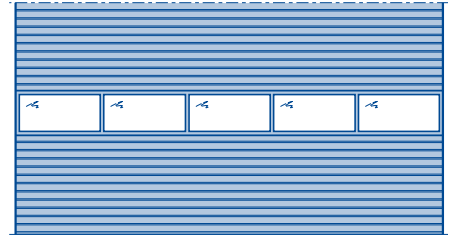
Sectional Door SPU 67 Thermo
with Wicket Door with Trip-Free Threshold



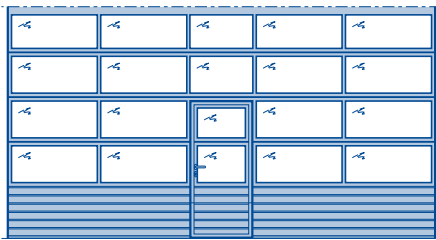
Sectional door SPU 67 Thermo,
matching doors with wicket door



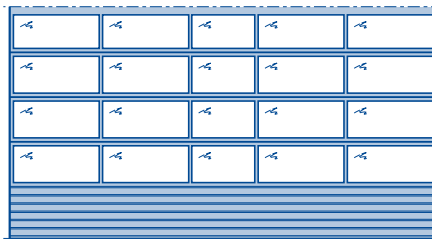
Sectional door SPU 67 Thermo
with standard window division



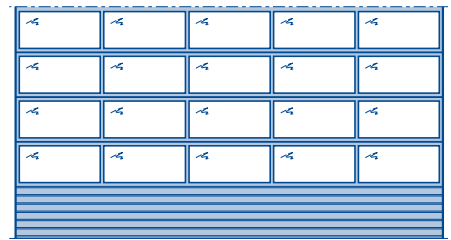
Sectional Door APU 67 Thermo
with Wicket Door with Trip-Free Threshold



Sectional door APU 67 Thermo,
matching doors with wicket door



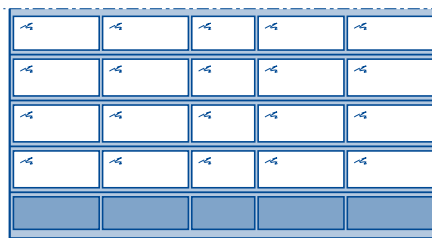
Sectional door APU 67 Thermo
with standard window division



Sectional Door ALR 67 Thermo
with Wicket Door with Trip-Free Threshold



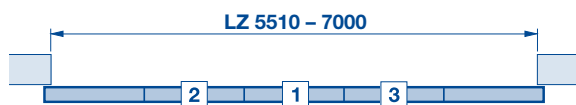
Sectional door ALR 67 Thermo,
matching doors with wicket door



Sectional door ALR 67 Thermo
with standard window division



Arrangement of the wicket door



Notes:

- Wicket door clear passage (DBS) = 905 mm.
- Wicket door only opening outwards.

Side Door NT 80 Thermo

Possible handing options

Fitting in the opening

Fitting next to the door, opening outwards or inwards, RH or LH hinged

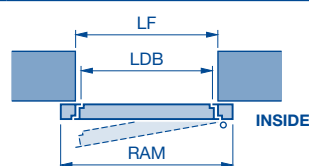


Fitting in the opening, opening inwards or outwards, RH or LH hinged



Fitting behind the opening

Only opening inwards, LH or RH hinged



Structural opening	Ordering size
	Overall frame dimensions RAM
875 × 2000	855 × 1990
875 × 2125	855 × 2115
1000 × 2000	980 × 1990
1000 × 2125	980 × 2115

Size range: width: RAM 770 to 1300, height: RAM 1865 to 2525 (state overall frame dimension)

Doors with multiple-point locking: RAM = ≥ 1920 mm

Clear passage dimensions:

Opening angle	Width	Height
136°	RAM – 164	RAM – 70
90°	RAM – 215	

LF Structural opening
RAM Overall frame dimension
LDB Clear passage width
LDH Clear passage height

LZ Clear frame dimensions

Side Door NT 80 Thermo

With S-ribbed Stucco-textured / L-ribbed Micrograin infills



Note:

- Compound glazing not possible with RC 2 version.

* See page 29
LF Structural opening
RAM Overall frame dimension
BH Panel height

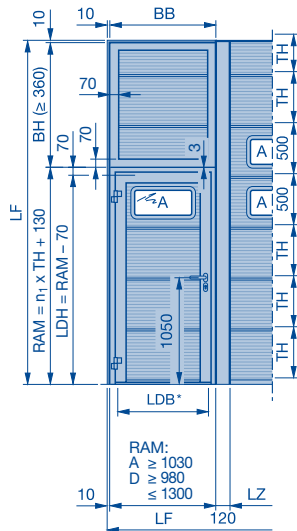
BB Panel width
LDB Clear passage width
LDH Clear passage height
TH Door section height

SO Bottom section height
LZ Clear frame dimensions
n₁ Number of door sections / aluminium frames

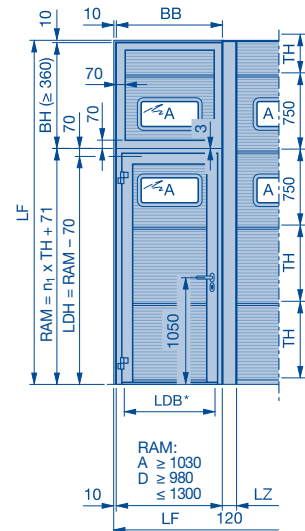
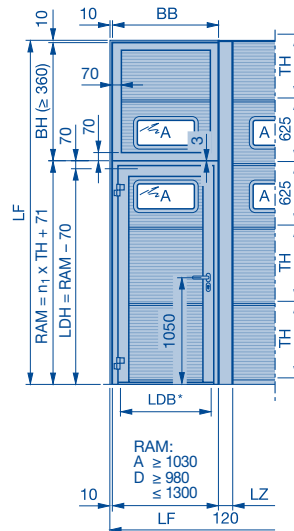
Side Door NT 80 Thermo

With L-ribbed Micrograin infills

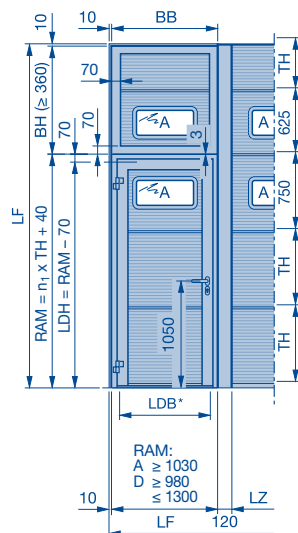
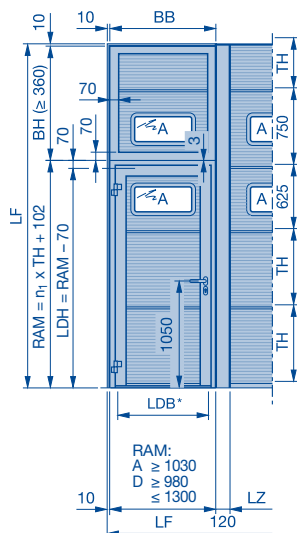
Compound glazing type A TH = 500



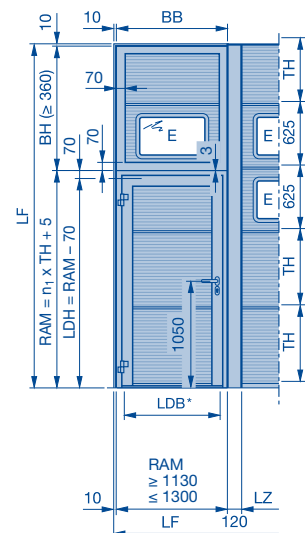
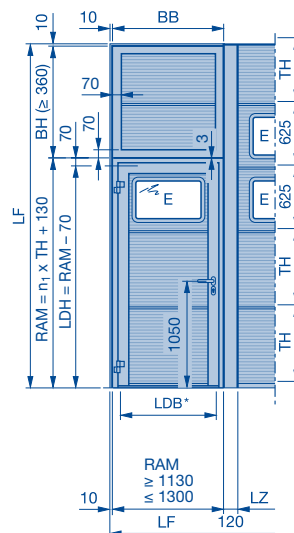
Compound glazing type A TH = 625 and 750



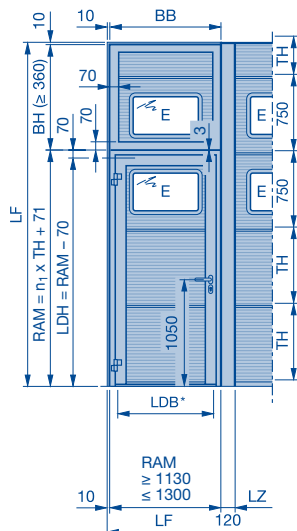
Compound glazing type A TH = 625 / 750 and 750 / 625



Compound glazing type E TH = 625



Compound glazing type E TH = 750



Note:

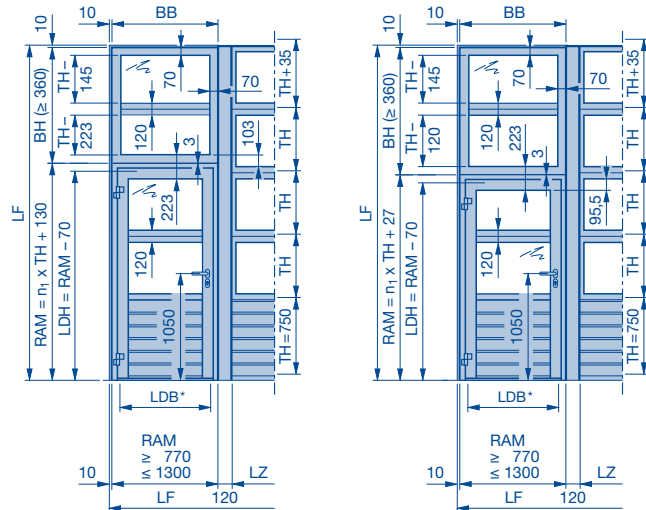
- Compound glazing not possible with RC 2 version.

(Legend see page 30)

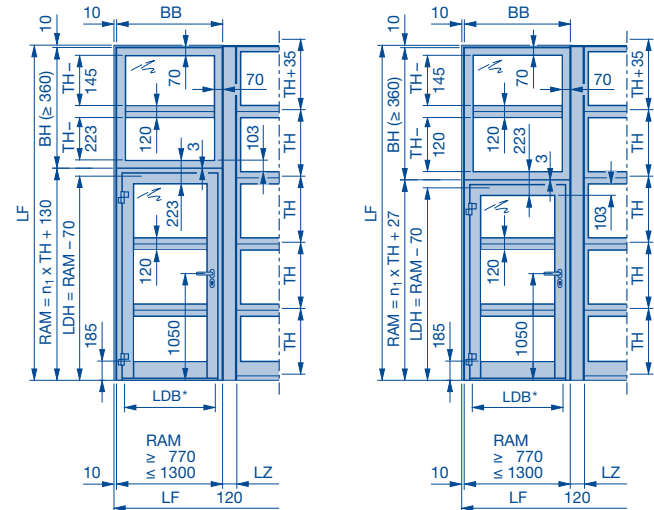
Side Door NT 80 Thermo

With S-ribbed Stucco-textured / L-ribbed Micrograin infills

Side door NT 80 Thermo matching door type APU 67 Thermo



Side door NT 80 Thermo matching door type ALR 67 Thermo



* See page 29
LF Structural opening
RAM Overall frame dimension
BH Panel height

BB Panel width
LDB Clear passage width
LDH Clear passage height
TH Door section height

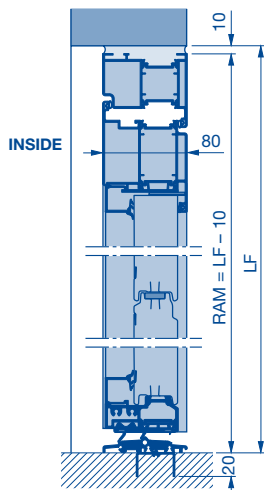
SO Bottom section height
LZ Clear frame dimensions
n₁ Number of door sections / aluminium frames

Side Door NT 80 Thermo

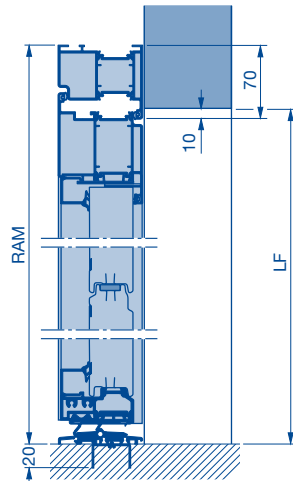
Possible fitting options

Possible fitting options

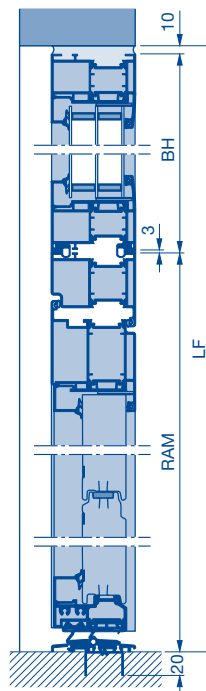
SPU 67 Thermo
in the opening
without window section,
without compound glazing



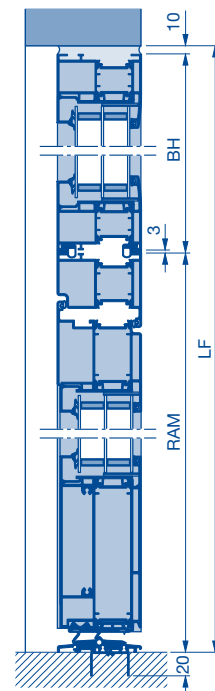
SPU 67 Thermo
behind the opening
without window section,
without compound glazing



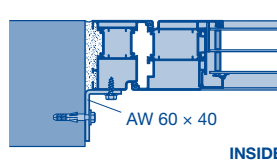
SPU 67 Thermo,
APU 67 Thermo
with fascia panel



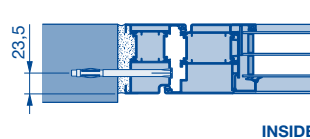
ALR 67 Thermo
with fascia panel



In the opening



Plugs for metal frame

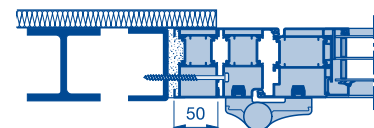


Tapping screw with countersunk head
B 6.3 x 80

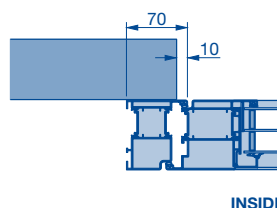


(bottom illustration with 50* mm extension profile for all-over insulation)

* Optionally with 25 mm



Behind the opening



Note:

Fitting with thermal break requires on-site preparations.

R Box section
AW Aluminium angle
SW Steel angle

BH Panel height
RAM Overall frame dimension
LF Structural opening

Side Door NT 80 Thermo RC 2

Possible fitting options

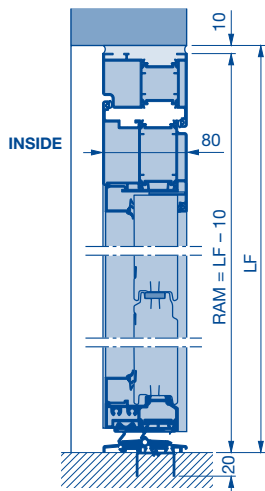
Possible fitting options

Note:

The side door and panel must be fitted in accordance with DIN EN 1627.

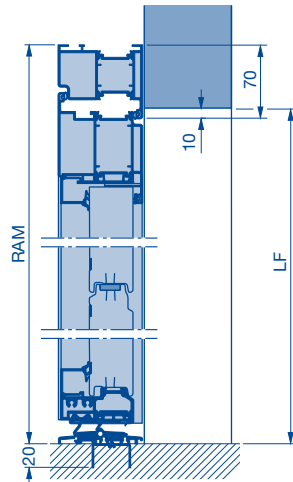
SPU In the opening

without window section,
without compound glazing

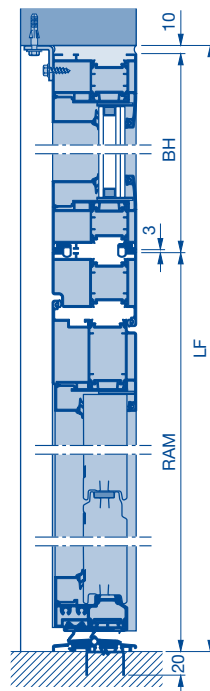


SPU behind the opening

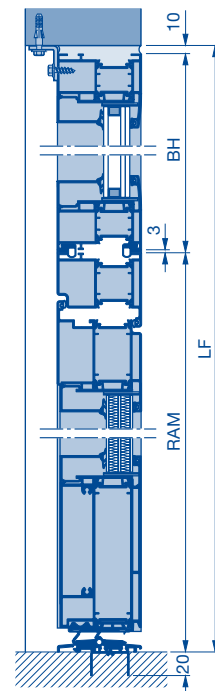
without window section,
without compound glazing



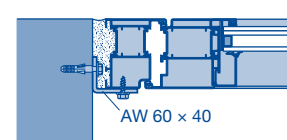
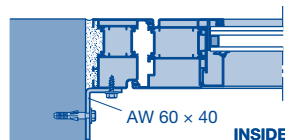
SPU, APU with fascia panel



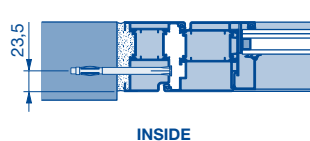
ALR with fascia panel



In the opening



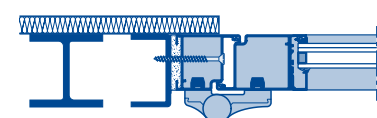
Plugs for metal frame



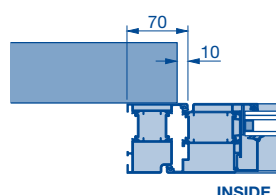
Tapping screw with countersunk head
B 6.3 x 80

Note:

Only use metal frame dowel and tapping screw with countersunk head when fitting the side door.



Behind the opening



Note:

Fitting with thermal break requires on-site preparations.

R Box section
AW Aluminium angle
SW Steel angle

BH Panel height
RAM Overall frame dimension
LDB Clear passage width

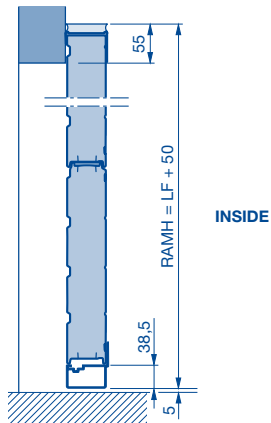
LF Structural opening

Fixed Elements

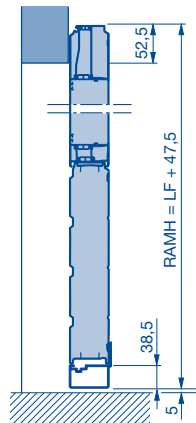
Possible fitting options and fitting examples

Possible fitting options

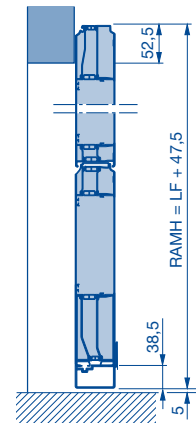
SPU 67 Thermo behind the opening
without window section,
without compound glazing



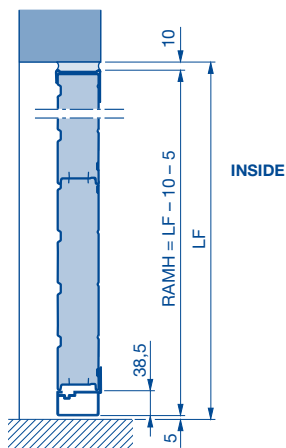
APU 67 Thermo behind the opening



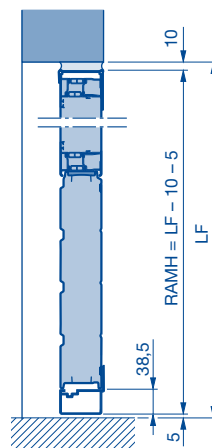
ALR 67 Thermo behind the opening



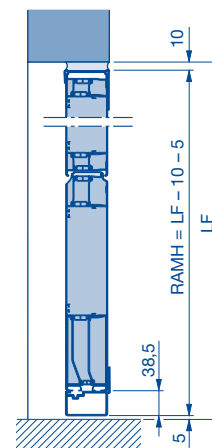
SPU 67 Thermo in the opening
without window section,
without compound glazing



APU 67 Thermo in the opening

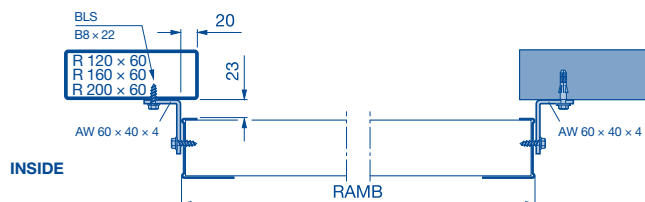
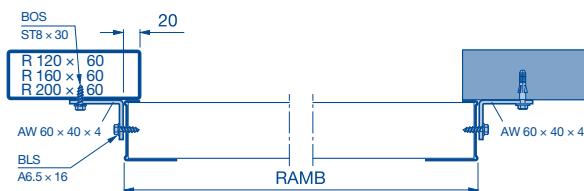


ALR 67 Thermo in the opening

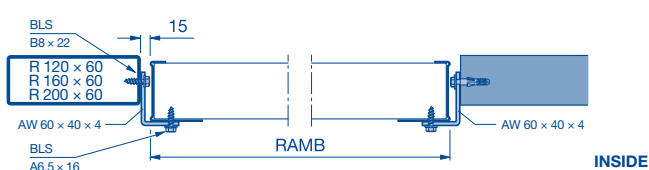


Fitting examples

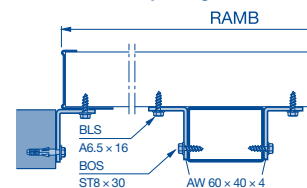
Behind the opening



In the opening



In front of the opening



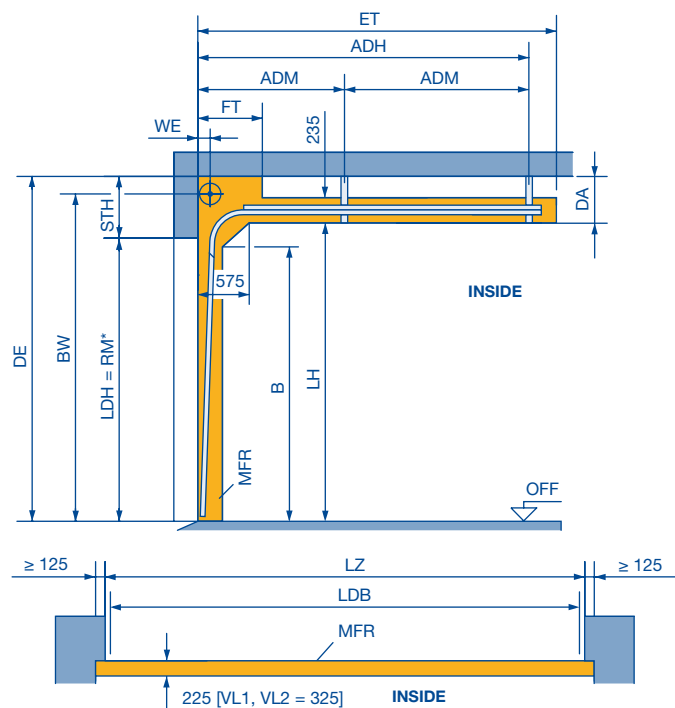
Note:
Fitting with thermal
break requires on-site
preparations.

AW Aluminium angle
LF Structural opening
RAMB Overall frame width

RAMH Overall frame height

Track Application: N

Normal track application



ET = min. Distance back		
N 1 + 2	RM + 435	For manual operation
	RM + 670	With shaft operator
N 3	RM + 245	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track
	RM + 725	For manual operation and shaft operator
	RM + 245	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe the min. sideroom, see page 55

	STH	Ship-to	da	FT
N 1	425	140	300	820
N 2	475	160	350	820
N 3	585	180	460	1750
With double spring shaft	795	180	670	1750
RM > 7000	845	180	720	2750

*Clear passage height LDH			
	Without operator	Operator	
		WA 400 **	WA 300 **
LZ ≤ 5500***			
Without wicket door	RM	RM	RM
Wicket door with threshold	RM – 100	RM – 50	RM – 50
Wicket door without threshold rail	RM – 150	RM – 85	RM – 85
LZ > 5500***			
Without wicket door	RM – 50	RM – 50	RM – 50
Wicket door with threshold	RM – 100	RM – 100	RM – 100
Wicket door without threshold rail	RM – 175	RM – 110	RM – 110
LZ ≥ 8000			
Without wicket door	RM – 100	RM – 100	–

** Or with chain hoist / hand pulley

*** LZ > 4500 with real glass infill in the wicket door

LDB Clear passage width with ThermoFrame (see page 55)

LDH Clear passage height

RM Grid height

LH Track height = RM + 125

BW Position of shaft support

N 1 = RM + 345

N 2 = RM + 370

N 3 = RM + 460

ADH Distance to rear ceiling anchor

N 1 / N 2 = RM + 220

N 3 = RM + 320

ADM Distance between central ceiling anchor (see page 59)

Ship-to Shaft centre from lintel (see table)

STH Min. headroom (see table)

da Distance to ceiling (see table)

DE Ceiling height

LZ Clear frame dimensions

MFR Space for fitting the door

FT Clearance for door operation

B Start of double radius, RM – 185

ET Min. distance back

Min. headroom

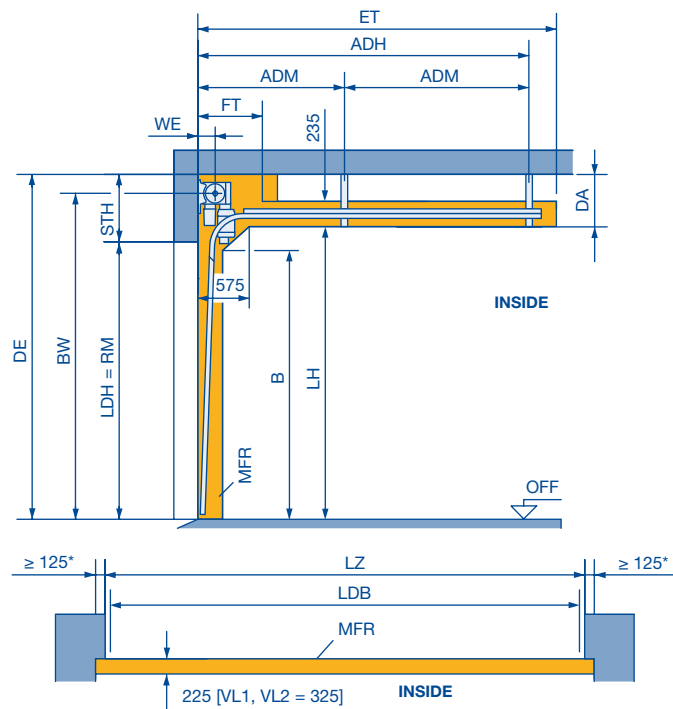
Track size	Headroom	Track size	Headroom	Track size	Headroom
N 1	425	GD 1	610 – 740	RG 4	1785
N 2	475	GD 2	660 – 790	RG 5	1785
N 3	585	H 4	880	V 6	RM + 500
NA 1	435	H 5	910	V 7	RM + 540
NA 2	485	H 8	950	V 9	RM + 635
ND 1	425	HA 4	890	VA 6	RM + 510
ND 2	475	HD 4	880	VU 6	RM + 350
ND 3	585	HD 5	910	VU 7	RM + 350
NH 1	610 – 740	HD 8	950	VU 9	RM + 350
NH 2	660 – 790	HU 4	1785	WG 6	RM + 350
NH 3	770 – 900	HU 5	1785	WG 7	RM + 350
NS 1	425	RD 4	1760		
NS 2	475	RD 5	1760		

Dimensions in mm

Track Application: N for S17.24 and S35.30

Normal track application

for direct drive operators S17.24 and S35.30



ET = min. Distance back		
N 2	RM + 670	With direct drive operator
	RM + 245	Direct drive operator with spring buffer below the track, with on-site adjustment of the track

Note:

- Permissible size range $LZ \leq 4500$ and $RM \leq 4500$.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- All door versions on request.

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

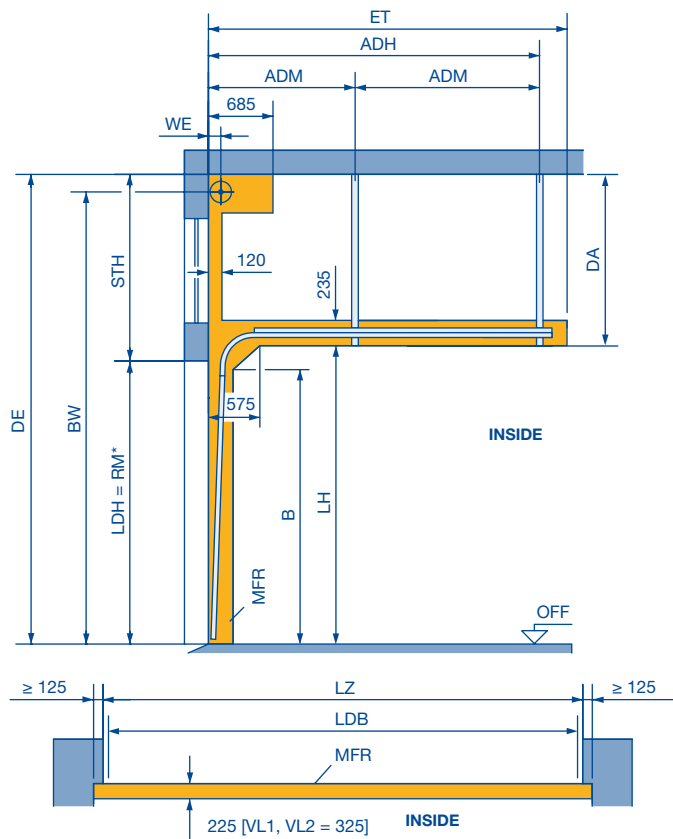
	STH	Ship-to	da	FT
N 2	545	160	350	820

Clear passage height LDH Direct drive operators S17 / S35	
LZ ≤ 4500	
Without wicket door	RM
Wicket door with threshold	RM - 50
Wicket door without threshold rail	RM - 85

LDB	Clear passage width with ThermoFrame (see page 55)	FT	Clearance for door operation
LDH	Clear passage height	B	Start of double radius, RM - 185
RM	Grid height	ET	Min. distance back
LH	Track height = RM + 125	* Note the sideroom, see page 68	
BW	Position of shaft support N 2 = RM + 370	Dimensions in mm	
ADH	Distance to rear ceiling anchor N 2 = RM + 220		
ADM	Distance between central ceiling anchor (see page 59)		
Ship-to	Shaft centre from lintel (see table)		
STH	Min. headroom 545		
da	Distance to ceiling (see table)		
DE	Ceiling height		
LZ	Clear frame dimensions		
MFR	Space for fitting the door		

Track Application: NA

Normal track application with high-mounted torsion spring shaft



Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 55.

	STH min.	Ship-to	Min. DA
NA 1	435	140	310
NA 2	485	160	360

ET = min. Distance back		
NA 1 + 2	RM + 435	For manual operation
	RM + 670	With shaft operator
	RM + 245	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
STH	Max. headroom (depends on order)
da	Max. distance to ceiling (depends on order)
RM	Grid height
DE	Ceiling height (depends on order)
LH	Track height = RM + 125
BW	Position of shaft support
	NA 1: BW _{min.} = RM + 355
	NA 2: BW _{min.} = RM + 380
	NA 1: BW _{max.} (7820) = DE - 80
	NA 2: BW _{max.} (7995) = DE - 105
ADH	Distance to rear ceiling anchor
	NA 1 + NA 2 = RM + 220
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel
DAL	Anchor length = DE - RM - 125 (see page 59)
LZ	Clear frame dimensions
MFR	Space for fitting the door
B	Start of double radius, RM - 185
ET	Min. distance back

* Note:

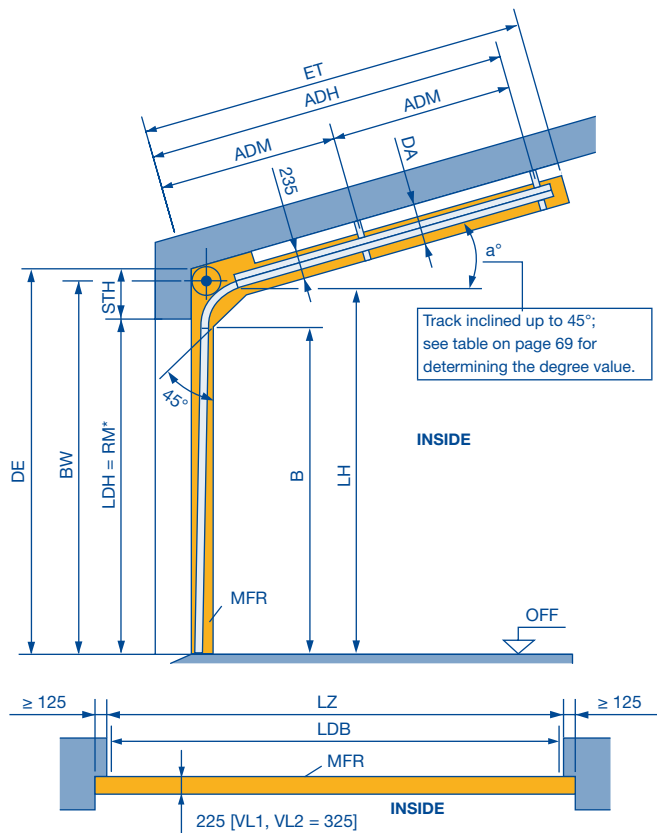
Clear passage height LDH, see track application N

Notes:

- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.

Track Application: ND

Normal track application
with inclination up to max. 45°



* Note:

Clear passage height LDH, see track application N

Note:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo/ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 55.

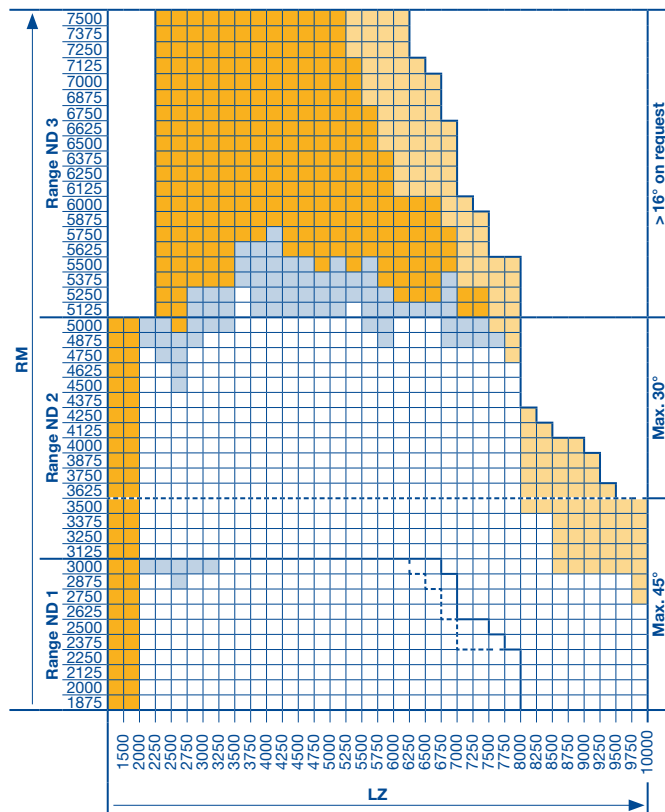
	STH ≤ 30°	STH > 30°
ND 1	425	525
ND 2	475	525
ND 3	585	–
With double spring shaft	795	–

ET = min. Distance back		
ND 1 + 2	RM + 475 – a° × 6.5	a° > 5° and with / without operator, with short spring buffer
	RM + 725 – a° × 6.5	a ≤ 5° and with operator, with long spring buffer
	RM + 475 – a° × 6.5	a ≤ 5° and manual operation with short spring buffer
	RM + 295 – a° × 6.5	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track
ND 3	RM + 725 – a° × 6.5	All versions
	RM + 295 – a° × 6.5	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

See the normal track application for all other fitting dimensions.

Note:

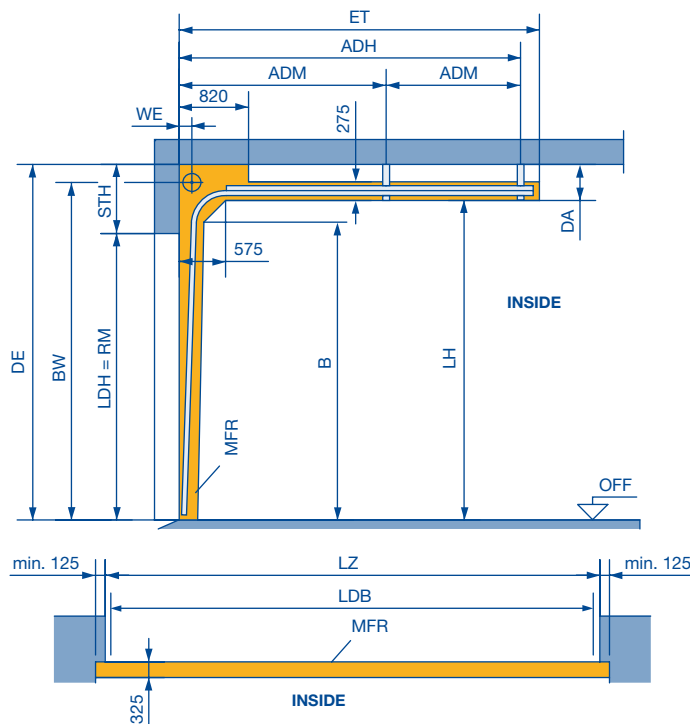
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 73.
- Roof slope on request for RM ≤ 3500 and > 30° or > 3500 and > 16°.



LDB	Clear passage width with ThermoFrame (see page 55)	MFR	Space for fitting the door
LDH	Clear passage height	a°	Roof slope
LH	Track height		All door types available in any version.
B	Start of double radius, LH - 310		Door types APU 67 Thermo and ALR 67 Thermo on request.
BW	Position of shaft support ND 1, ≤ 30° = RM + 345 ND 2, ≤ 30° = RM + 370 ND 1 + ND 2, > 30° = RM + 420 ND 3, ≤ 16° = RM + 450		Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
ADH	Distance to rear ceiling anchor ND 1 + ND 2 = RM + 220 – a° × 6.5 ND 3 = RM + 320 – a° × 6.5		On request
ADM	Distance between central ceiling anchor (see page 59)		Track limit for SPU 67 Thermo
STH	Min. headroom (see page 36)		Track limit for APU 67 Thermo and ALR 67 Thermo
da	Distance to ceiling on request		Dimensions in mm
DAL	Anchor length = DE – RM + 25 (see page 59)		
LZ	Clear frame dimensions (from 1200)		
DE	Ceiling height		
ET	Min. distance back		
RM	Grid height		

Track Application: NH

Normal track application with minimum high-lift



Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo/ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

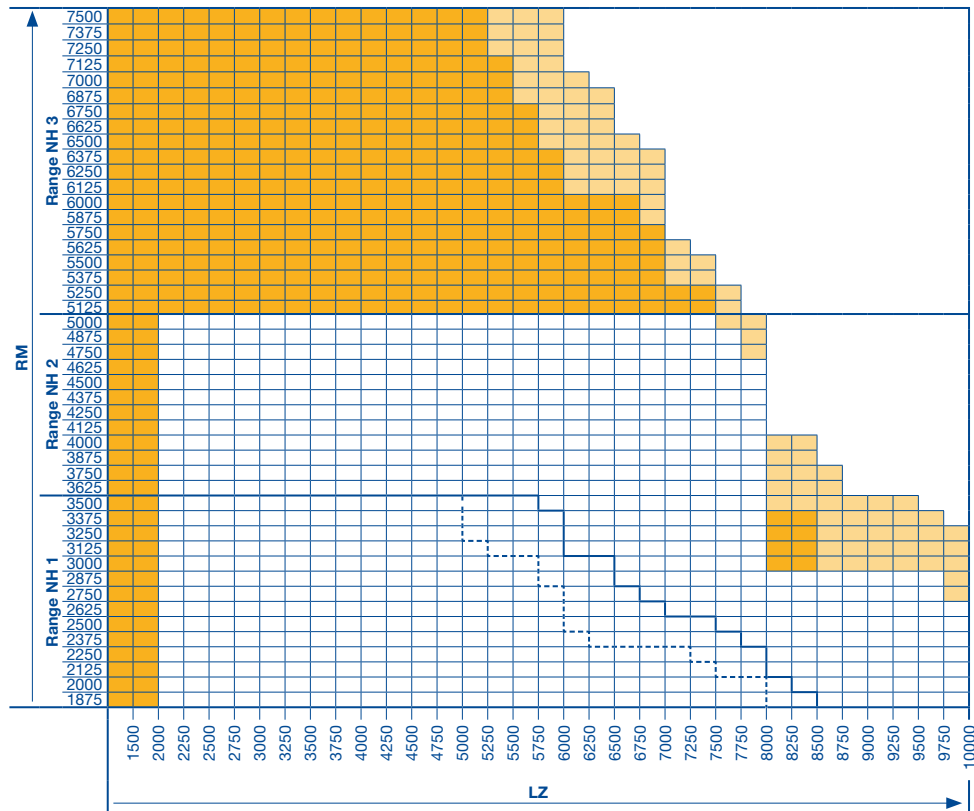
Observe min. sideroom, see page 55.

	Ship-to	da
NH 1	140	280
NH 2	160	330
NH 3	180	440
With double spring shaft	180	650

ET = min. Distance back		
NH 1 + 2	2 x RM - LH + 1145	For manual operation with long spring buffer (standard)
	2 x RM - LH + 695	For manual operation with spring buffer below the track, with on-site adjustment of the track
	2 x RM - LH + 905	For shaft operator with long spring buffer = (LH - RM) ≤ 1000
	2 x RM - LH + 455	For shaft operator with spring buffer below the track, with on-site adjustment of the track
NH 3	2 x RM - LH + 975	All versions
	2 x RM - LH + 455	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

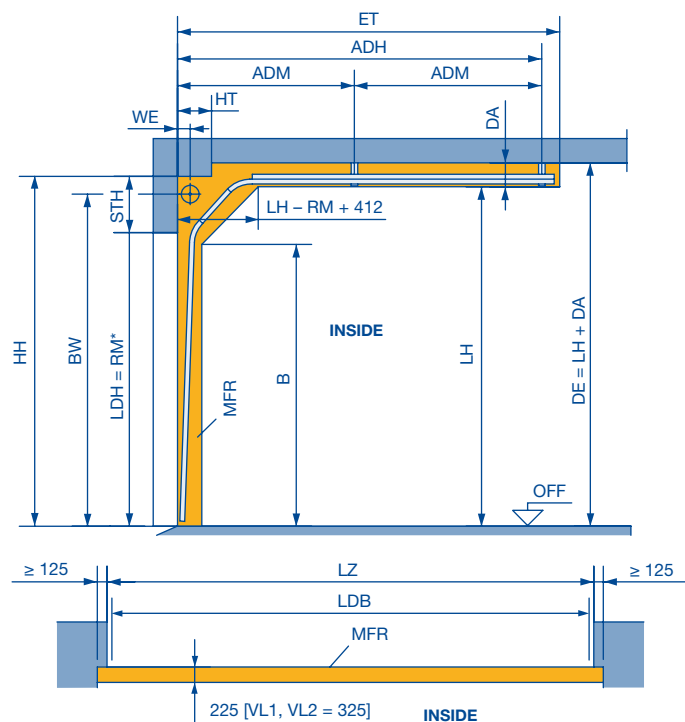


LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
BW	Position of shaft support NH 1 = LH + 200 NH 2 = LH + 225 NH 3 = LH + 305
LH	Track height Min. = RM + 330 max. = RM + 460
ADH	Distance to rear ceiling anchor NH 1 + NH 2 = 2 x RM - LH + 670 (long spring buffer) NH 1 + NH 2 = 2 x RM - LH + 430 (long and short spring buffer + operator) NH 3 = 2 x RM - LH + 510
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel
STH	Min. headroom (see page 36)
da	Distance to ceiling
DE	Ceiling height
DAL	Anchor length = DE - LH + 15 (see page 59)
LZ	Clear frame dimensions (from 1200)
ET	Min. distance back
MFR	Space for fitting the door
B	Start of double radius, LH - 310
	All door types available in any version.
	Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
	On request
	Track limit for SPU 67 Thermo
	Track limit for APU 67 Thermo and ALR 67 Thermo

Dimensions in mm

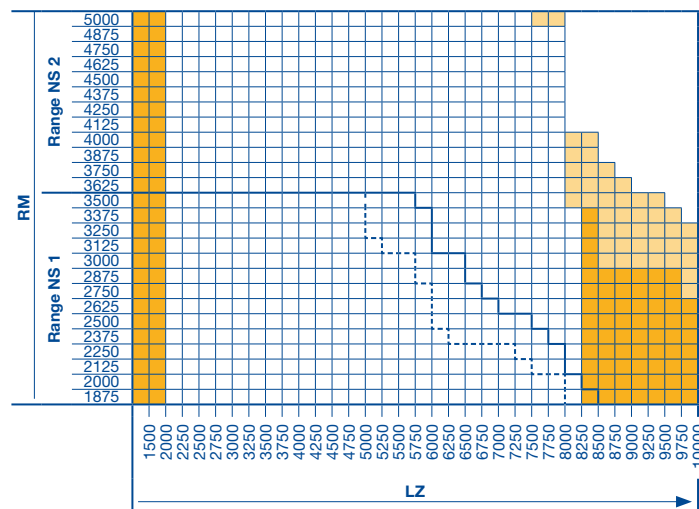
Track Application: NS

Normal track application
with double radius $2 \times 45^\circ$



Note:

- Observe the permissible size ranges of the door types on pages 9–14 and 17–25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request



	*Clear passage height LDH	
	Without operator	Operator WA 400 **
LZ ≤ 5500***		
Without wicket door	RM	RM
Wicket door with threshold	RM – 100	RM – 50
Wicket door without threshold rail	RM – 150	RM – 85
LZ > 5500***		
Without wicket door	RM – 50	RM – 50
Wicket door with threshold	RM – 100	RM – 100
Wicket door without threshold rail	RM – 175	RM – 110

Note:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 55.

	STH	HT	Ship-to	BW
NS 1	≥ 425	330	140	RM + 345
NS 2	≥ 475	380	160	RM + 370

Door height RM	Track height		
	Min. LH	Max. LH	
5000	5190	5810	NS 2
4875	5065	5685	
4750	4940	5560	
4625	4815	5435	
4500	4690	5310	
4375	4565	5175	
4250	4440	5030	
4125	4315	4885	
4000	4190	4730	
3875	4065	4585	
3750	3940	4440	NS 1
3625	3815	4295	
3500	3690	4150	
3375	3565	4005	
3250	3440	3860	
3125	3315	3715	
3000	3190	3570	
2875	3065	3425	
2750	2940	3280	
2625	2815	3135	
2500	2690	2990	
2375	2565	2845	
2250	2440	2700	
2125	2315	2555	
2000	2190	2410	
1875	2065	2265	

** Or with chain hoist / hand pulley

*** LZ > 4500 with real glass infill in the wicket door

STH Min. headroom (see page 36)

ET Min. distance back on request

ADH Distance to rear ceiling anchor on request

ADM Distance to central ceiling anchor on request

da Min. distance to ceiling 275

HT Obstruction depth

DAL Anchor length = DE – LH – 15 (see page 59)

BW Position of shaft support

Ship-to Shaft centre from lintel

HH Obstruction height

DE Ceiling height

LH Track height

LDB Clear passage width with ThermoFrame (see page 59)

LDH Clear passage height
LZ Clear frame dimensions (from 1200)

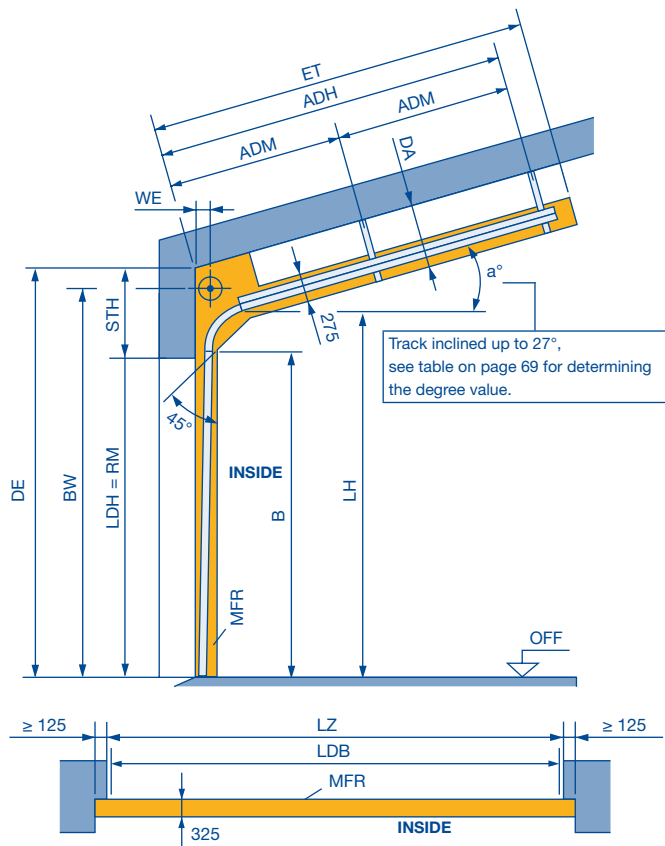
RM Grid height
MFR Space for fitting the door
B Start of double radius, RM – 185

□ All door types available in any version.
■ Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
■ On request

— Track limit for SPU 67 Thermo
- - - - - Track limit for APU 67 Thermo and ALR 67 Thermo
Dimensions in mm

Track Application: GD

Normal track application
with inclination up to max. 27°
and minimum high-lift



Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

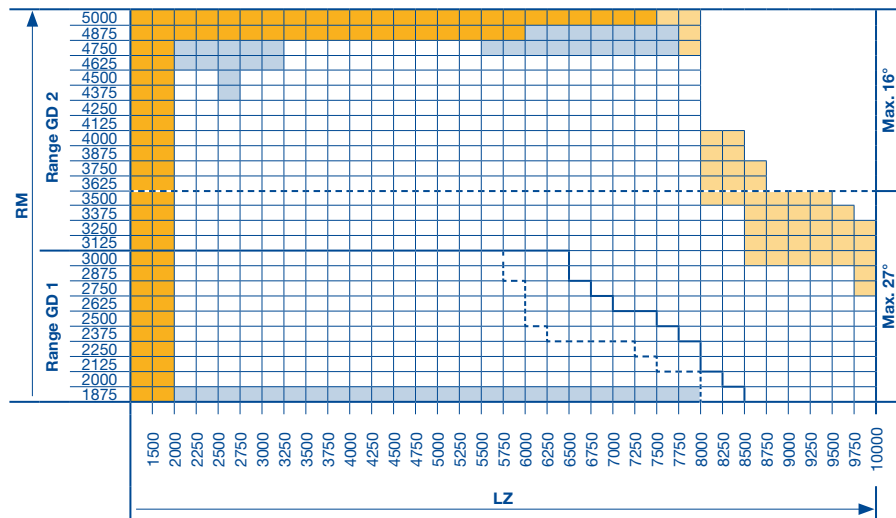
Observe min. sideroom, see page 55.

	Ship-to
GD 1	140
GD 2	160

ET = min. Distance back		
GD 1 + 2	$2 \times RM - LH + 1145 - a^\circ \times 6.5$	For manual operation with long spring buffer
	$2 \times RM - LH + 675 - a^\circ \times 6.5$	$a^\circ > 5^\circ$ and with operator, with short spring buffer
	$2 \times RM - LH + 905 - a^\circ \times 6.5$	$a^\circ \leq 5^\circ$ and with operator, with long spring buffer
	$2 \times RM - LH + 295 - a^\circ \times 6.5$	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- Observe the permissible size ranges of the door types on pages 9–14 and 17–25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 73.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.



ADH	Distance to rear ceiling anchor GD 1 + GD 2 = $2 \times RM - LH + 670 - a^\circ \times 6.5$ (long spring buffer) GD 1 + GD 2 = $2 \times RM - LH + 430 - a^\circ \times 6.5$ (long and short spring buffer + operator)
ADM	Distance between central ceiling anchor = see page 59
B	Start of double radius, LH - 310
LH	Track height
BW	Position of shaft support GD1 = LH + 200 GD2 = LH + 225
STH	Min. headroom (see page 36)
da	Distance to ceiling on request
DE	Ceiling height
DAL	Anchor length on request (see page 59)
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
BW	Position of shaft support GD 1 = LH + 200 GD 2 = LH + 225
Ship-to	Shaft centre from lintel
LZ	Clear frame dimensions (from 1200)
ET	Min. distance back
RM	Grid height
MFR	Space for fitting the door
a°	Roof slope

All door types available in any version.

Door types APU 67 Thermo and ALR 67 Thermo on request.

Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).

On request

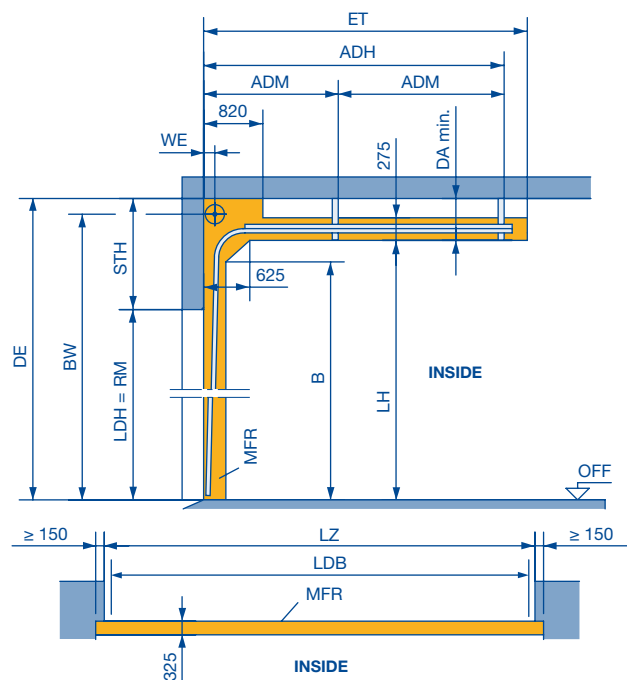
Track limit for SPU 67 Thermo

Track limit for APU 67 Thermo and ALR 67 Thermo

Dimensions in mm

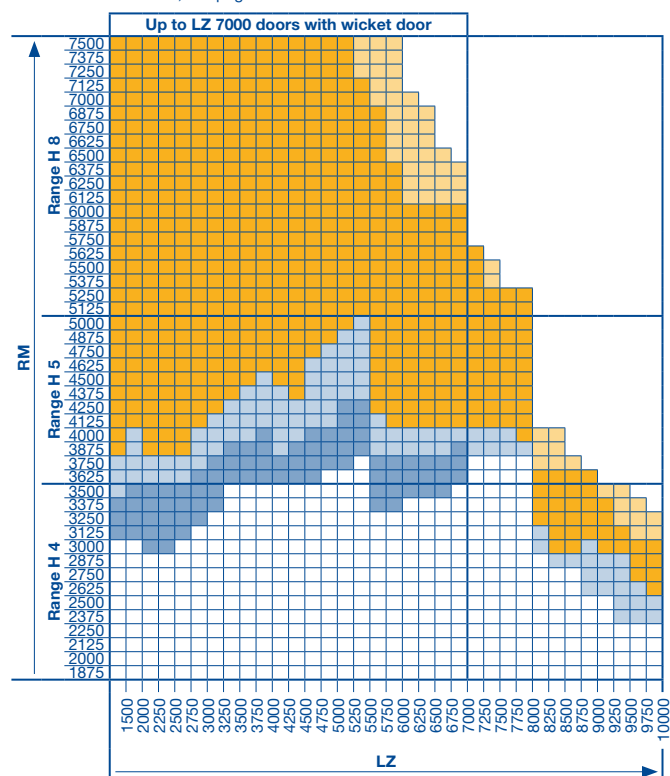
Track Application: H

High-lift track application



ET = min. Distance back		
H 4 + 5	2 x RM - LH + 1145	For manual operation with long spring buffer
	2 x RM - LH + 695	For manual operation with spring buffer below the track, with on-site adjustment of the track
	2 x RM - LH + 905	For shaft operator with long spring buffer (LH - RM) ≤ 1000
	2 x RM - LH + 675	For shaft operator with short spring buffer (LH - RM) > 1000
	2 x RM - LH + 455	For shaft operator with spring buffer below the track, with on-site adjustment of the track
H 8	2 x RM - LH + 975	All versions
	2 x RM - LH + 455	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

Observe min. sideroom, see page 55.



Please note:

Select required track height according to the door height in table 1.

Note:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Table 1: Track heights (LH)

Door height RM	Min. LH	Max. LH	H 5, WE = 180	Door height RM	Min. LH	Max. LH	H 8, WE = 205 All door types and versions available on request.
5000	5460	8300					
4875	5335	8175					
4750	5210	8050					
4625	5085	7925					
4500	4960	7800					
4375	4835	7675					
4250	4710	7550					
4125	4585	7425					
4000	4460	7185					
3875	4335	6935	H 4, WE = 160	7500	7960	10200	
3750	4210	6685		7375	7835	10200	
3625	4085	6435		7250	7710	10200	
3500	3960	6185		7125	7585	10200	
3375	3835	5935		7000	7460	10200	
3250	3710	5685		6875	7335	10200	
3125	3585	5435		6750	7210	10150	
3000	3460	5185		6625	7085	10025	
2875	3335	4935		6500	6960	9900	
2750	3210	4685		6375	6835	9775	
2625	3085	4435	H 4, WE = 160	6250	6710	9650	H 8, WE = 205 All door types and versions available on request.
2500	2960	4185		6125	6585	9525	
2375	2835	3935		6000	6460	9400	
2250	2710	3685		5875	6335	9275	
2125	2585	3435		5750	6210	9150	
2000	2460	3185		5625	6085	9025	
				5500	5960	8900	
				5375	5835	8775	
				5250	5710	8650	
				5125	5585	8525	

Notes:

- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing on request

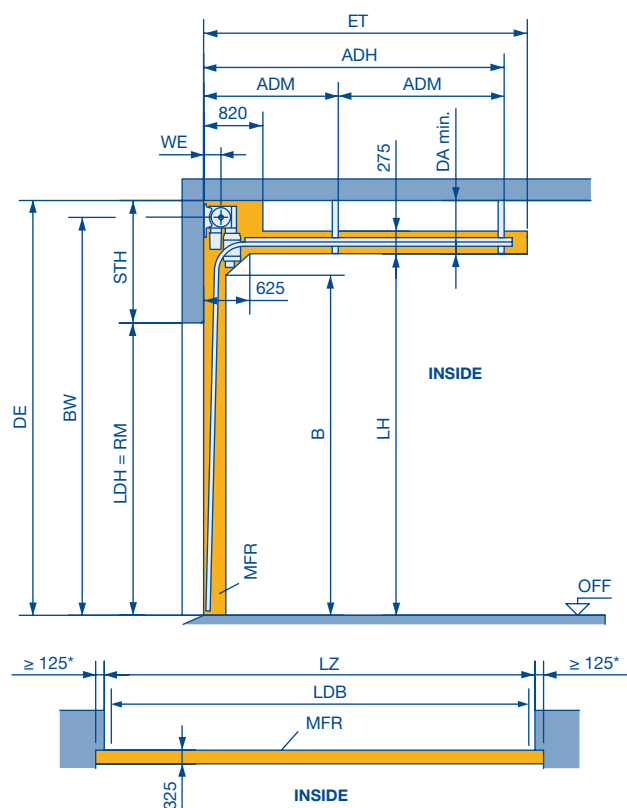
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 1)
BW	Position of shaft support H 4 + 5 = LH + 280, H 8 = LH + 305
ADH	Distance to rear ceiling anchor H 4 + 5 = 2 x RM - LH + 670 (long spring buffer) H 4 + 5 = 2 x RM - LH + 430 (long and short spring buffer + operator) H 8 = 2 x RM - LH + 510
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see table 1)
STH	Min. headroom (see page 36)
Min. DA	H 4 = 420 H 5 = 450, 625 with double spring shaft H 8 = 490, 650 with double spring shaft
DAL	Anchor length DE - LH - 15 (see page 59)
DE	Ceiling height
LZ	Clear frame dimensions (from 1200)
ET	Distance back
MFR	Space for fitting the door
B	Start of double radius, LH - 310
	All door types available in any version.
	Door types APU 67 Thermo and ALR 67 Thermo on request.
	All door types with wicket door on request.
	Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
	All door types on request.

Dimensions in mm

Track Application: H for S17.24 and S35.30

High-lift track application

for direct drive operators S17.24 and S35.30



ET = min. Distance back		
H 2	$2 \times RM - LH + 905$	For direct drive operator with long spring buffer ($LH - RM \leq 1000$)
	$2 \times RM - LH + 675$	For direct drive operator with short spring buffer ($LH - RM > 1000$)
	$2 \times RM - LH + 455$	For direct drive operator with spring buffer below the track, with on-site adjustment of the track

Please note:

Select required track height according to the door height in table 1.

Note:

- Permissible size range $LZ \leq 4500$ and $RM \leq 4500$.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- All door versions on request.

Table 1: Track heights (LH)

Door height RM	Min. LH	Max. LH	H 2, WE = 160
4500	4960	7800	
4375	4835	7675	
4250	4710	7550	
4125	4585	7425	
4000	4460	7185	
3875	4335	6935	
3750	4210	6685	
3625	4085	6435	
3500	3960	6185	
3375	3835	5935	
3250	3710	5685	
3125	3585	5435	
3000	3460	5185	
2875	3335	4935	
2750	3210	4685	
2625	3085	4435	
2500	2960	4185	
2375	2835	3935	
2250	2710	3685	
2125	2585	3435	
2000	2460	3185	

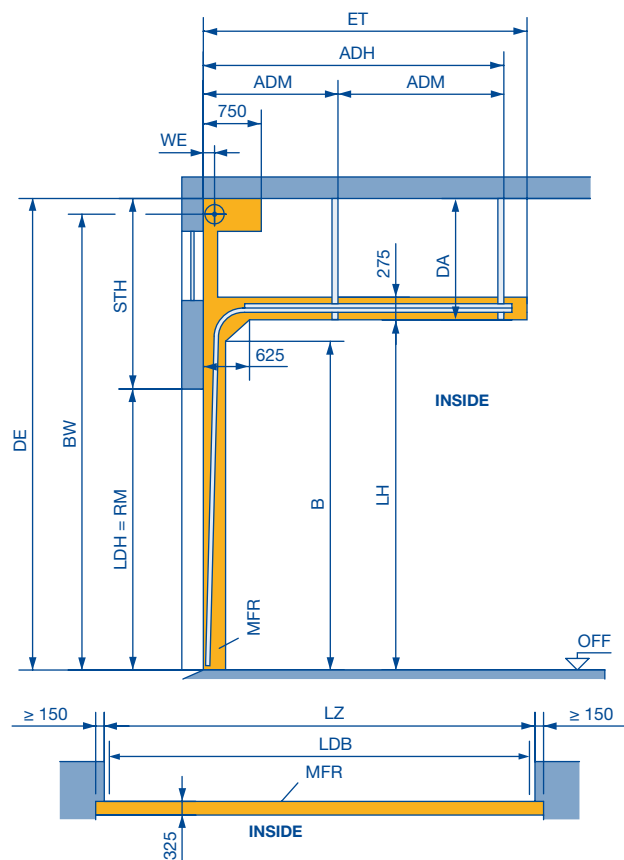
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 1)
BW	Position of shaft support LH + 280
ADH	Distance to rear ceiling anchor $2 \times RM - LH + 430$ (long and short spring buffer + operator)
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see table 1)
STH	Min. headroom (see page 36)
B	Start of double radius, LH - 310
Min. DA	420
DAL	Anchor length DE - LH - 15 (see page 59)
DE	Ceiling height
LZ	Clear frame dimensions (from 1200)
ET	Distance back
MFR	Space for fitting the door

* Note the sideroom, see page 68

Dimensions in mm

Track Application: HA

High-lift track application with high-mounted torsion spring shaft

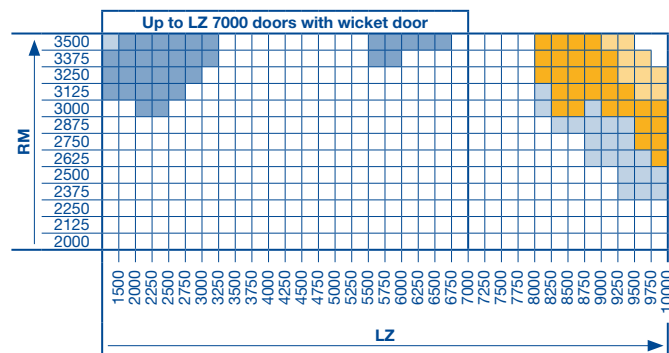


Notes:

- Observe the permissible size ranges of the door types on pages 9–14 and 17–25 under all circumstances!
- ALR 67 Thermo Glazing on request

ET = min. Distance back	
HA 4	2 x RM - LH + 1145
	For manual operation with long spring buffer (standard)
	2 x RM - LH + 695
	For manual operation with spring buffer below the track, with on-site adjustment of the track
	2 x RM - LH + 905
	For shaft operator with long spring buffer (LH - RM) ≤ 1000
	2 x RM - LH + 675
	For shaft operator with short spring buffer (LH - RM) > 1000
	2 x RM - LH + 455
	For shaft operator with spring buffer below the track, with on-site adjustment of the track

Observe the min. sideroom, see page 55.



Please note:

Select required track height according to the door height in table 2.

Note:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Table 2: Track heights (LH)

Door height RM	Min. LH	Max. LH	HA 4, WE = 160
3500	3960	6185	
3375	3835	5935	
3250	3710	5685	
3125	3585	5435	
3000	3460	5185	
2875	3335	4935	
2750	3210	4685	
2625	3085	4435	
2500	2960	4185	
2375	2835	3935	
2250	2710	3685	
2125	2585	3435	
2000	2460	3185	

LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 2)
BW	Position of shaft support Min. = HA 4 = LH + 290 Max. (8120) = HA 4 = DE - 140
ADH	Distance to rear ceiling anchor HA 4 = 2 x RM - LH + 670 (long spring buffer) HA 4 = 2 x RM - LH + 430 (long and short spring buffer + operator)
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see table 2)
STH	Min. headroom (see page 36)
da	Distance to ceiling = HA 4 = min. 420
DAL	Anchor length DE - LH - 15 (see page 59)
DE	Ceiling height
LZ	Clear frame dimensions (from 1200)
ET	Distance back
MFR	Space for fitting the door
B	Start of double radius, LH - 310

□ All door types available in any version.

■ Door types APU 67 Thermo and ALR 67 Thermo on request.

■ All door types with wicket door on request.

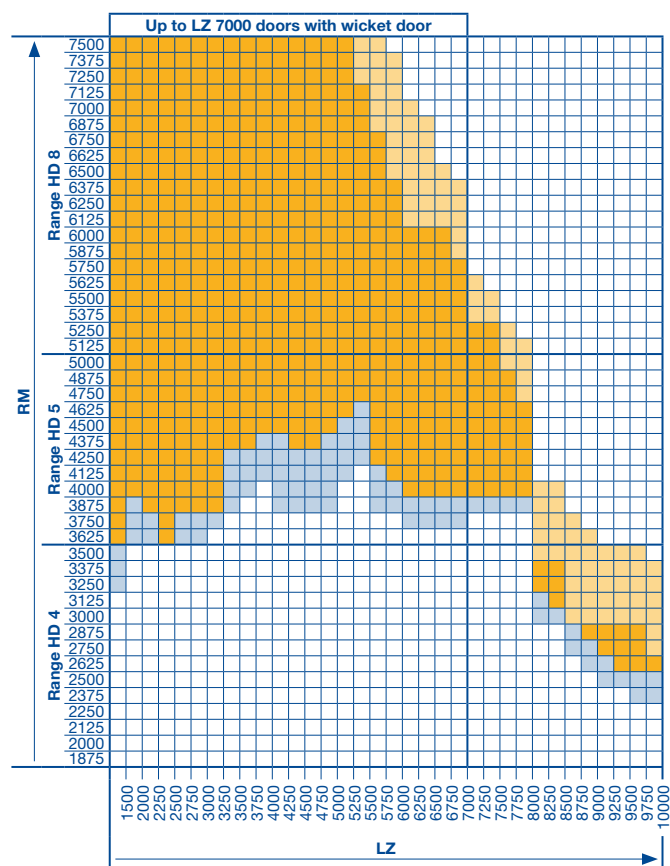
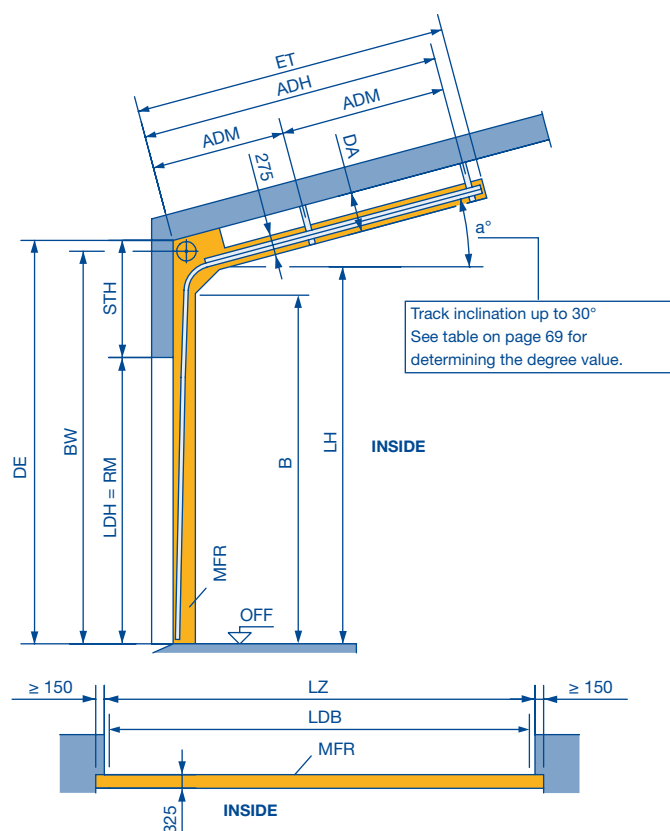
■ Door type SPU 67 Thermo on request
(APU 67 Thermo and ALR 67 Thermo not possible).

■ All door types on request.

Dimensions in mm

Track Application: HD

High-lift track application with inclination



Please note:

Select required track height according to the door height in Table 1 on page 43.

ET = min. Distance back		
HD 4 + 5	$2 \times RM - LH + 1145 - a^\circ \times 6.5$	For manual operation with long spring buffer (standard)
	$2 \times RM - LH + 695 - a^\circ \times 6.5$	For manual operation with spring buffer below the track, with on-site adjustment of the track
	$2 \times RM - LH + 905 - a^\circ \times 6.5$	For shaft operator with long spring buffer ($LH - RM \leq 1000$ and $a^\circ \leq 5^\circ$)
	$2 \times RM - LH + 675 - a^\circ \times 6.5$	For shaft operator with short spring buffer ($LH - RM > 1000$ or $a^\circ > 5^\circ$)
	$2 \times RM - LH + 455 - a^\circ \times 6.5$	For shaft operator with spring buffer below the track, with on-site adjustment of the track
HD 8	$2 \times RM - LH + 975 - a^\circ \times 6.5$	All versions
	$2 \times RM - LH + 455 - a^\circ \times 6.5$	For manual operation and shaft operator with spring buffer below the track, with on-site adjustment of the track

See the high-lift track application for all other fitting dimensions.

Observe the min. sideroom, see page 55.

Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 73.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- Roof slope $> 10^\circ$ to 30° on request.

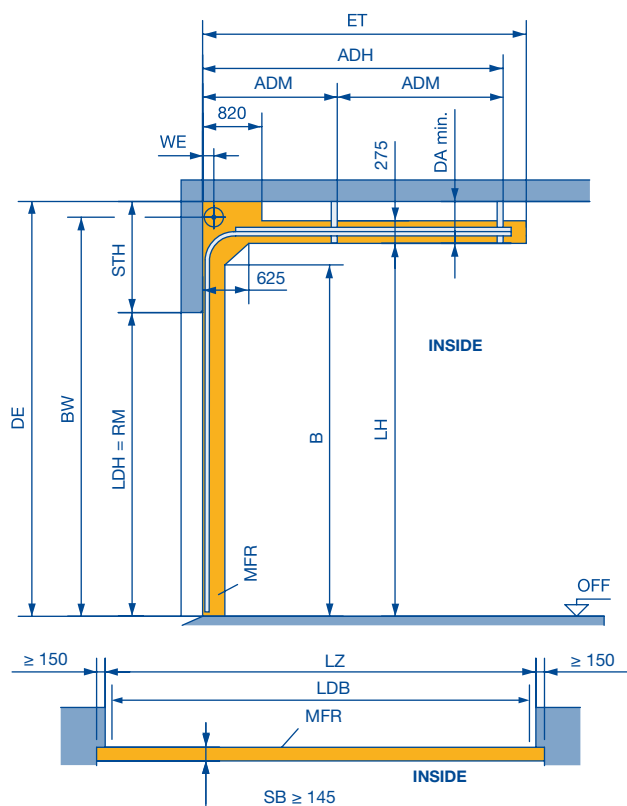
da	Distance to ceiling on request
DAL	Anchor length $DE - LH + 140$ (see page 59)
LH	Track height (see Table 1 on page 43)
STH	Min. headroom (see page 36)
BW	Position of shaft support
	$HD 4 + 5 = LH + 280$, $HD 8 = LH + 305$
ADH	Distance to rear ceiling anchor
	$HD 4 + HD 5 = 2 \times RM - LH + 670 - a^\circ \times 6.5$ (long spring buffer)
	$HD 4 + HD 5 = 2 \times RM - LH + 430 - a^\circ \times 6.5$ (long and short spring buffer + operator)
	$HD 8 = 2 \times RM - LH + 510$
ADM	Distance to central ceiling anchor on request
Ship-to	Shaft centre from lintel (see Table 1 on page 43)
DE	Ceiling height
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
LZ	Clear frame dimensions (from 1200)
ET	Distance back
RM	Grid height
MFR	Space for fitting the door
B	Start of double radius, $LH - 310$
a°	Roof slope
	All door types available in any version.
	Door types APU 67 Thermo and ALR 67 Thermo on request.
	Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
	All door types on request.

Dimensions in mm

Track Application: HG

High-lift track application with steep track

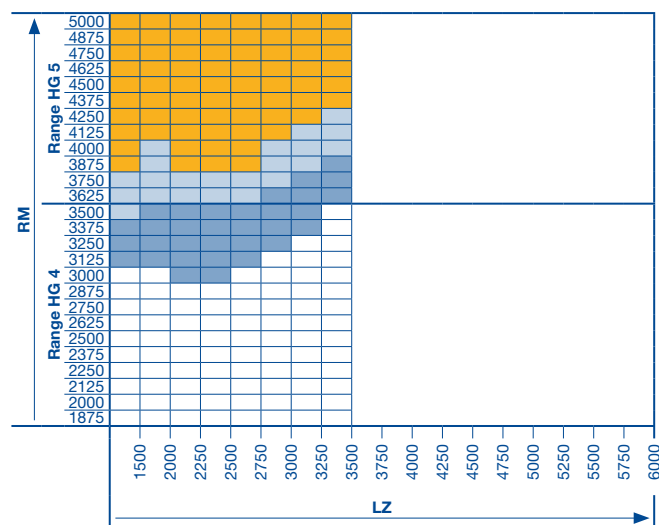
(Application for loading ramp doors)



ET = min. Distance back		
HG 4, 5	2 x RM - LH + 1145	For manual operation with long spring buffer
	2 x RM - LH + 695	For manual operation with spring buffer below the track, with on-site adjustment of the track
	2 x RM - LH + 905	For shaft operator with long spring buffer (LH - RM) ≤ 1000
	2 x RM - LH + 675	For shaft operator with short spring buffer (LH - RM) > 1000
	2 x RM - LH + 455	For shaft operator with spring buffer below the track, with on-site adjustment of the track

Other versions on request.

Observe min. sideroom, see page 55.



Please note:

Select required track height according to the door height in table 3.

Notes:

- Door type ALR 67 Thermo Glazing, doors with real glass infill and wicket doors are not possible.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Table 3: Track heights (LH)

Door height	RM	Min. LH	Max. LH
HG 5, WE = 180	5000	5460	8300
	4875	5335	8175
	4750	5210	8050
	4625	5085	7925
	4500	4960	7800
	4375	4835	7675
	4250	4710	7550
	4125	4585	7425
	4000	4460	7185
	3875	4335	6935
	3750	4210	6685
	3625	4085	6435
	3500	3960	6185
	3375	3835	5935
	3250	3710	5685
	3125	3585	5435
HG 4, WE = 160	3000	3460	5185
	2875	3335	4935
	2750	3210	4685
	2625	3085	4435
	2500	2960	4185
	2375	2835	3935

Note:

Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!

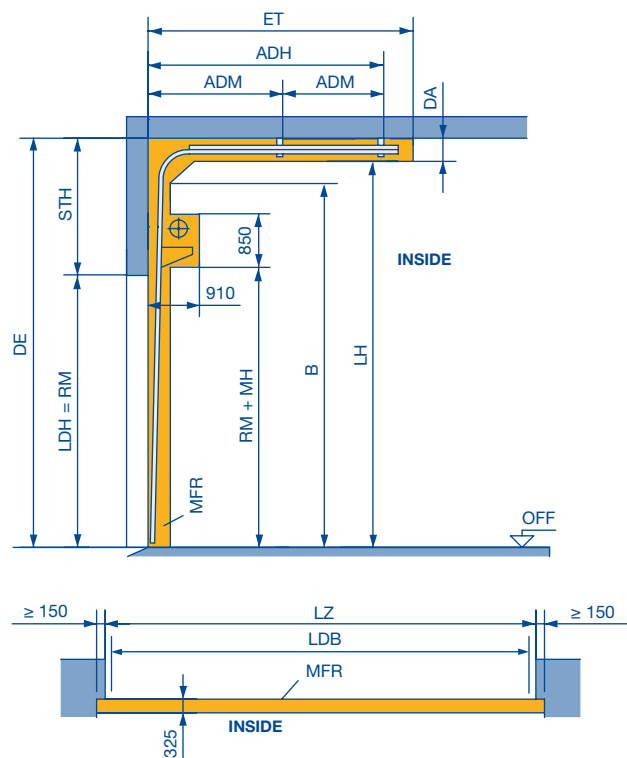
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 3)
BW	Position of shaft support HG 4 + HG 5 = LH + 280
ADH	Distance between rear ceiling anchor = HG 4 + HG 5 = 2 x RM - LH + 605 (long spring buffer) HG 4 + HG 5 = 2 x RM - LH + 365 (long and short spring buffer + operator)
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see table 3)
STH	Min. headroom (see page 36)
Min. DA	HG 4 = 420 HG 5 = 450, 625 with double spring shaft
SB	Slot width
DAL	Anchor length DE - LH - 15 (see page 59)
ET	Distance back
DE	Ceiling height
LZ	Clear frame dimensions (from 1200)
MFR	Space for fitting the door
B	Start of double radius, LH - 310

- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- All door types with wicket door on request.
- All door types on request.

Dimensions in mm

Track Application: HU

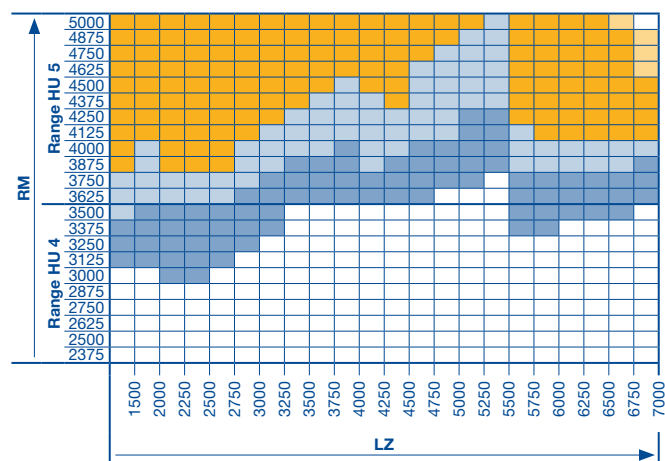
High-lift track application
with low-mounted torsion spring shaft



ET = min. Distance back	
HU 4 + 5	2 x RM - LH + 1145 For manual operation with long spring buffer
	2 x RM - LH + 695 For manual operation with spring buffer below the track, with on-site adjustment of the track
	2 x RM - LH + 675 For shaft operator with short spring buffer (LH - RM > 1510)
	2 x RM - LH + 455 For shaft operator with spring buffer below the track, with on-site adjustment of the track

Other versions on request.

Observe min. sideroom, see page 55.



Please note:

Select required track height according to the door height in table 4.

Note:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Table 4: Track heights (LH)

Door height RM	Min. LH	Max. LH	
5000	6510	8300	HU 5, WE = 355
4875	6385	8175	
4750	6260	8050	
4625	6135	7925	
4500	6010	7800	
4375	5885	7675	
4250	5760	7550	
4125	5635	7425	
4000	5510	7185	
3875	5385	6935	
3750	5260	6685	HU 4, WE = 335
3625	5135	6435	
3500	5010	6185	
3375	4885	5935	
3250	4760	5685	
3125	4635	5435	
3000	4510	5185	
2875	4385	4935	
2750	4260	4685	
2625	4135	4435	
2500	4010	4185	
2375	3885	3935	

Notes:

- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing on request

LDB	Clear passage width with ThermoFrame (see page 55)
DE	Ceiling height
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 4)
ADH	Distance to rear ceiling anchor HU 4 + HU 5 = 2 x RM - LH + 670 (long spring buffer) HU 4 + HUG 5 = 2 x RM - LH + 430 (long and short spring buffer + operator)
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see table 4)
STH	Min. headroom (see page 36)
da	Min. distance to ceiling 275
DAL	Anchor length DE - LH - 15 (see page 59)
LZ	Clear frame dimensions (from 1200)
ET	Distance back
MFR	Space for fitting the door
B	Start of double radius, LH - 310
MH	Fitting height 400

□ All door types available in any version.

□ Door types APU 67 Thermo and ALR 67 Thermo on request.

□ All door types with wicket door on request.

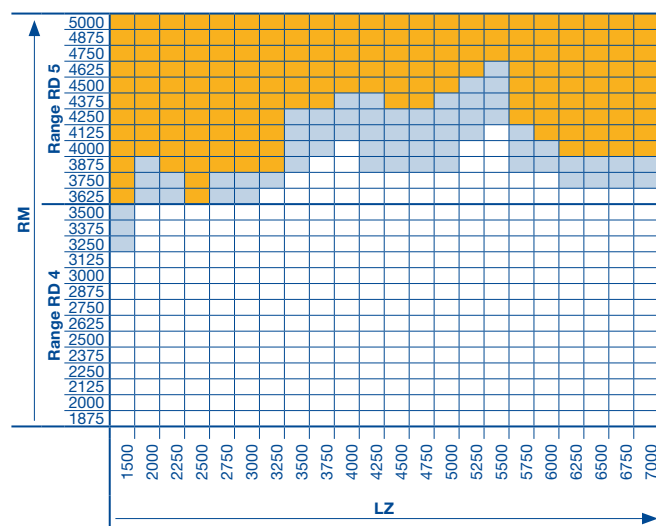
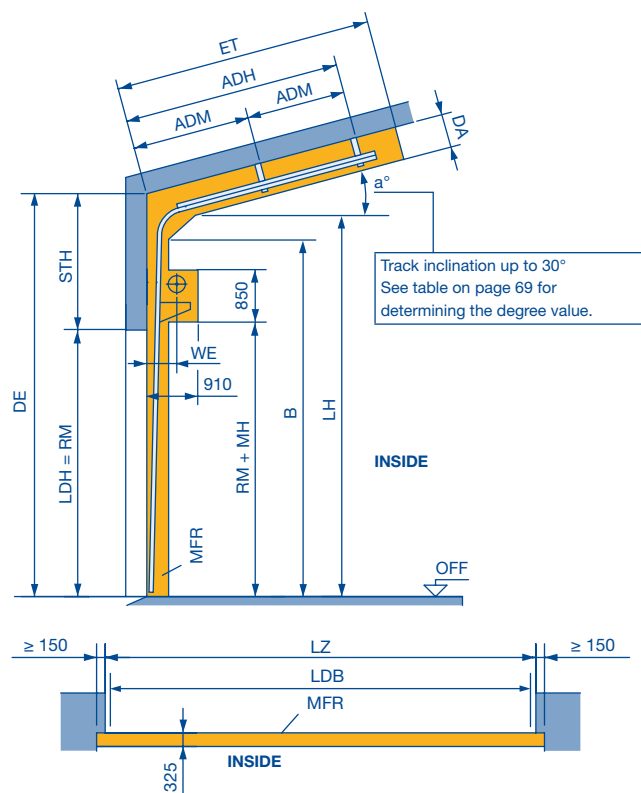
□ Door type SPU 67 Thermo on request
(APU 67 Thermo and ALR 67 Thermo not possible).

□ All door types on request.

Dimensions in mm

Track Application: RD

High-lift track application with low-mounted torsion spring shaft and inclination



Please note:

Select required track height according to the door height in Table 4 on page 48.

Note:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

ET = min. Distance back		
RD 4 + 5	$2 \times RM - LH + 1185 - a^\circ \times 6.5$	For manual operation with long spring buffer (standard)
	$2 \times RM - LH + 695 - a^\circ \times 6.5$	For manual operation with spring buffer below the track, with on-site adjustment of the track
	$2 \times RM - LH + 675 - a^\circ \times 6.5$	For shaft operator with short spring buffer = $(LH - RM) \geq 1510$
	$2 \times RM - LH + 455 - a^\circ \times 6.5$	For shaft operator with spring buffer below the track, with on-site adjustment of the track

See the high-lift track application for all other fitting dimensions.

Observe min. sideroom, see page 55.

Notes:

- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 73.
- Roof slope > 10° to 30° on request.

DE	Ceiling height
DAL	Anchor length DE – L – 15 (see page 59)
LH	Track height (see Table 4 on page 48)
STH	Min. headroom (see page 36)
ADH	Distance between rear ceiling anchor = $RD\ 4 + RD\ 5 = 2 \times RM - LH + 670 - a^\circ \times 6.5$ (long spring buffer) $RD\ 4 + RD\ 5 = 2 \times RM - LH + 430 - a^\circ \times 6.5$ (long and short spring buffer + operator)
ADM	Distance between central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see Table 4 on page 48)
da	Distance to ceiling on request
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
LZ	Clear frame dimensions (from 1200)
RM	Grid height
MFR	Space for fitting the door
B	Start of double radius, LH – 310
a°	Roof slope
MH	Fitting height 400

□ All door types available in any version.

□ Door types APU 67 Thermo and ALR 67 Thermo on request.

□ All door types on request.

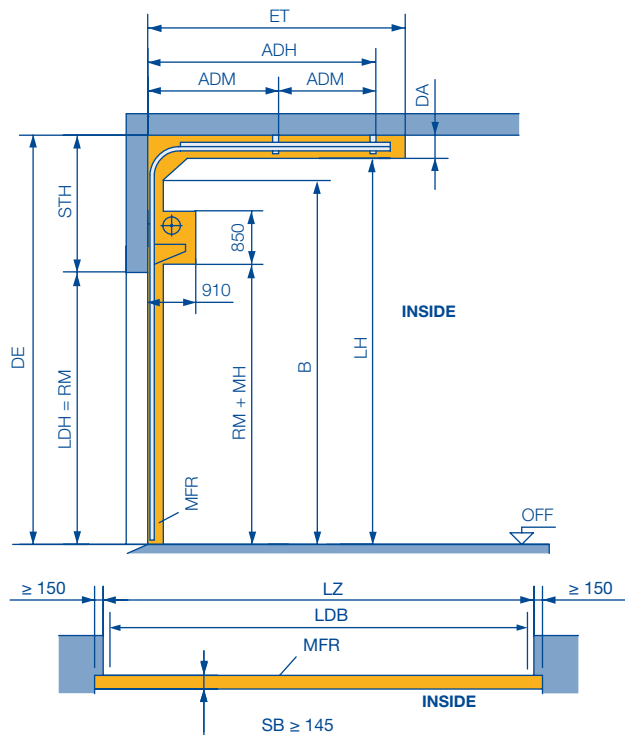
Dimensions in mm

Track Application: RG

High-lift track application

with low-mounted torsion spring shaft and steep track

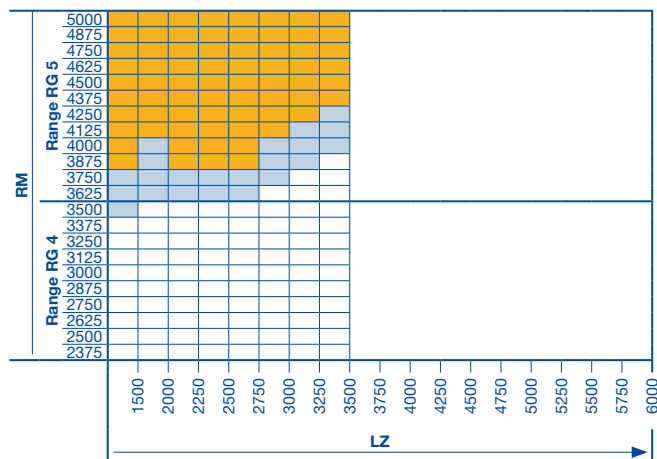
(Application for loading ramp doors)



ET = min. Distance back		
RG 4 + 5	$2 \times RM - LH + 1145$	For manual operation with long spring buffer
	$2 \times RM - LH + 695$	For manual operation with spring buffer below the track, with on-site adjustment of the track
	$2 \times RM - LH + 675$	For shaft operator with short spring buffer ($LH - RM > 1510$)
	$2 \times RM - LH + 455$	For shaft operator with spring buffer below the track, with on-site adjustment of the track

Other versions on request.

Observe min. sideroom, see page 55.



Please note:

Select required track height according to the door height in table 5.

Notes:

- Door type ALR 67 Thermo Glazing, doors with real glass infill and wicket doors are not possible.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track near the spring buffer is reduced by 70 mm.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Table 5: Track heights (LH)

Door height RM	Min. LH	Max. LH	
5000	6510	8300	RG 5, WE = 315
4875	6385	8175	
4750	6260	8050	
4625	6135	7925	
4500	6010	7800	
4375	5885	7675	
4250	5760	7550	
4125	5635	7425	
4000	5510	7185	
3875	5385	6935	
3750	5260	6685	RG 4, WE = 295
3625	5135	6435	
3500	5010	6185	
3375	4885	5935	
3250	4760	5685	
3125	4635	5435	
3000	4510	5185	
2875	4385	4935	
2750	4260	4685	
2625	4135	4435	
2500	4010	4185	
2375	3885	3935	

Note:

Observe the permissible size ranges of the door types on pages 9–14 and 17–25 under all circumstances!

LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 5)
ADH	Distance between rear ceiling anchor = $RG 4 + RG 5 = 2 \times RM - LH + 605$ (long spring buffer) $RG 4 + RG 5 = 2 \times RM - LH + 365$ (long and short spring buffer + WA 400)
ADM	Distance to central ceiling anchor (see page 59)
Ship-to	Shaft centre from lintel (see table 5)
STH	Min. headroom (see page 36)
da	Min. distance to ceiling 275
SB	Slot width
DAL	Anchor length $DE - LH - 15$ (see page 59)
ET	Distance back
DE	Ceiling height
LZ	Clear frame dimensions (from 1200)
MFR	Space for fitting the door
B	Start of double radius, $LH - 310$
MH	Fitting height 400

□ All door types available in any version.

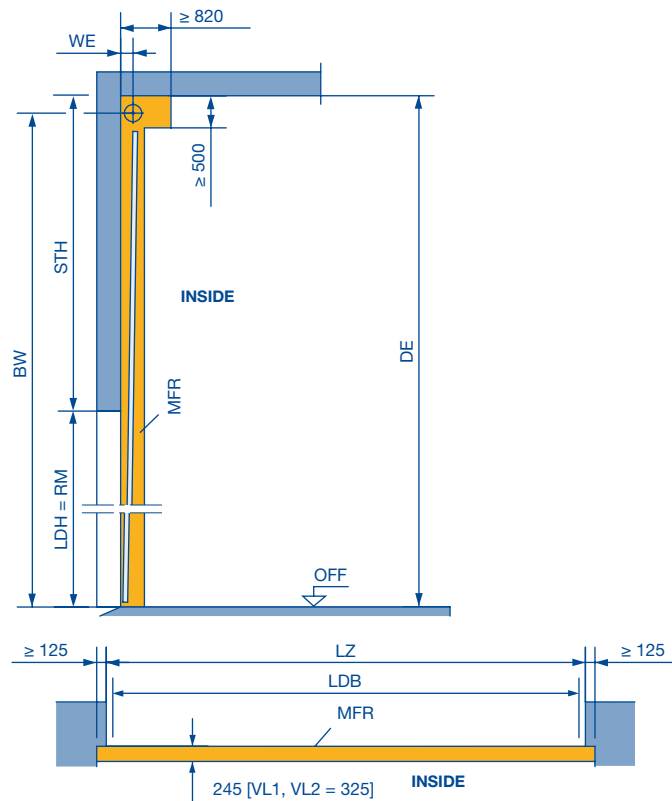
□ Door types APU 67 Thermo and ALR 67 Thermo on request.

□ All door types on request.

Dimensions in mm

Track Application: V

Vertical track application



Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Observe min. sideroom, see page 55.

LDB Clear passage width with ThermoFrame (see page 55)

LDH Clear passage height

RM Grid height

Ship-to Shaft centre from lintel

V 6 = 160, V 7 = 180, V 9 = 205

STH Min. headroom (see page 36)

DE Ceiling height

2 × RM + 500 (V 6)

2 × RM + 540 (V 7)

2 × RM + 730 (V 7 with double spring shaft)

2 × RM + 635 (V 9)

2 × RM + 780 (V 9 with double spring shaft)

BW Position of shaft support

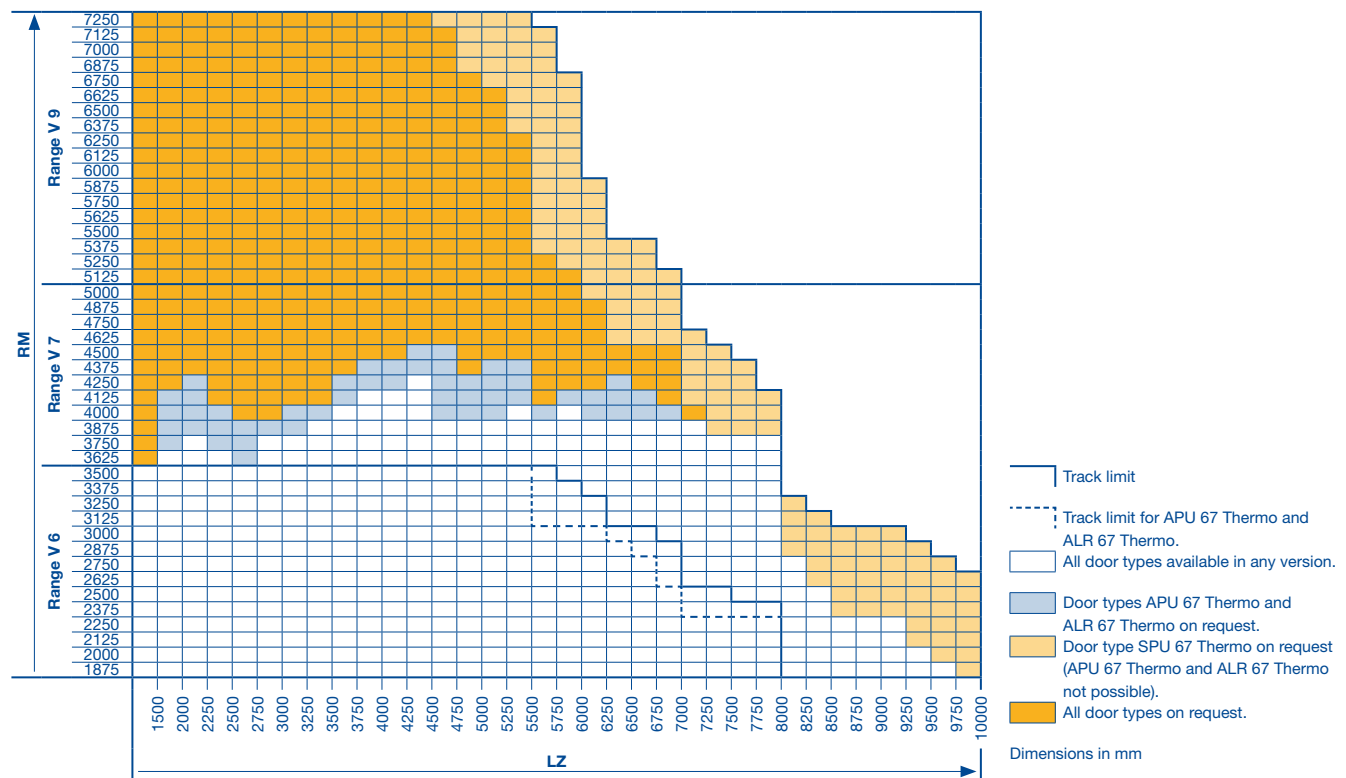
2 × RM + 360 (V 6)

2 × RM + 385 (V 7)

2 × RM + 435 (V 9)

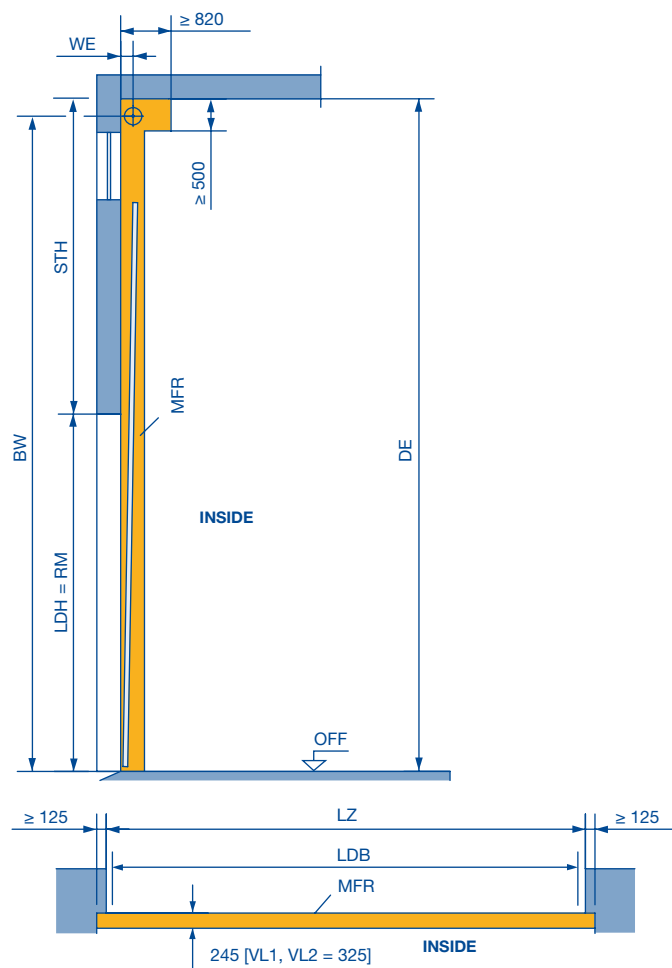
LZ Clear frame dimensions (from 1200)

MFR Space for fitting the door



Track Application: VA

Vertical track application with high-mounted torsion spring shaft

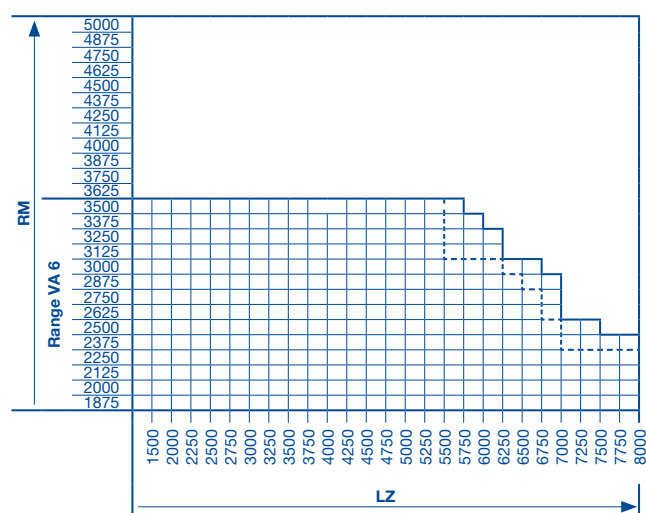


Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size ranges of the door types on pages 9–14 and 17–25 under all circumstances!
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Observe min. sideroom, see page 55.

LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
Ship-to	Shaft centre from lintel VA 6 = 160
STH	Min. headroom (see page 36)
DE	Ceiling height Min.: $2 \times RM + 510$ (VA 6) Max.: depends on order
BW	Position of shaft support = Min.: $2 \times RM + 370$ (VA 6) Max.: $7895 = DE - 140$
LZ	Clear frame dimensions (from 1200)
MFR	Space for fitting the door



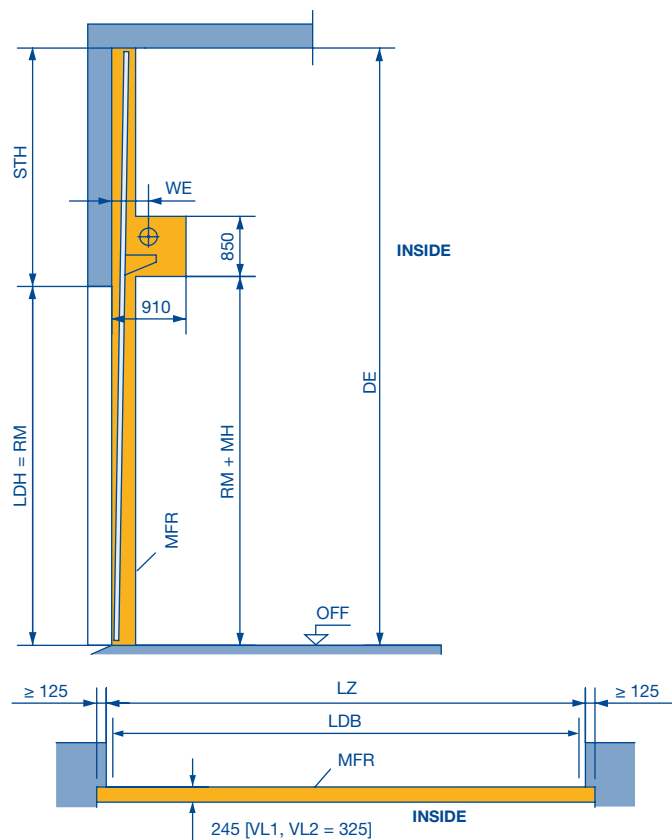
Note:

ALR 67 Thermo Glazing and doors
with wicket door on request.

— Track limit
- - - Track limit for APU 67 Thermo and ALR 67 Thermo.
□ All door types available in any version.
Dimensions in mm

Track Application: VU

Vertical track application
with low-mounted torsion spring shaft



Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Observe min. sideroom, see page 55.

DE Ceiling height = $2 \times RM + 350$

Ship-to Shaft centre from lintel

VU 6 = 335

VU 7 = 355

VU 9 = 395

STH Min. headroom (see page 36)

LDB Clear passage width with ThermoFrame (see page 55)

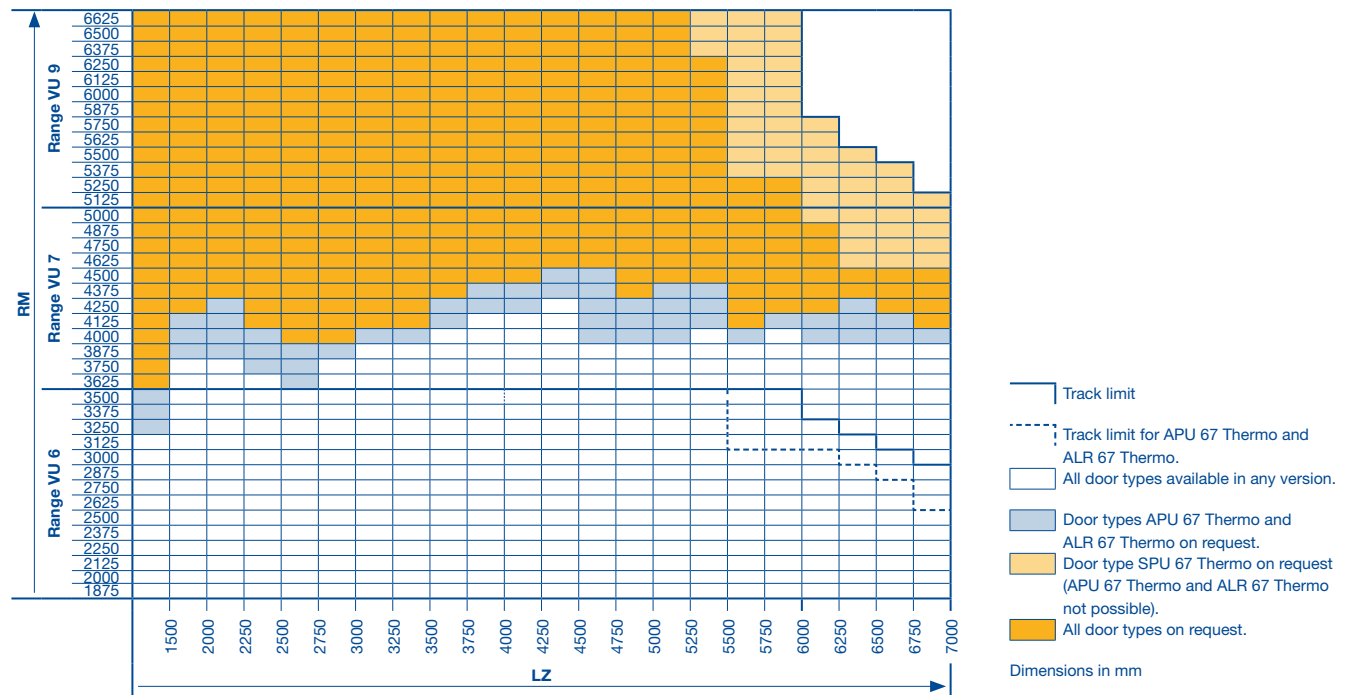
LDH Clear passage height

RM Grid height

LZ Clear frame dimensions (from 1200)

MFR Space for fitting the door

MH Fitting height 400



- Track limit
- Track limit for APU 67 Thermo and ALR 67 Thermo.
- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- All door types on request.

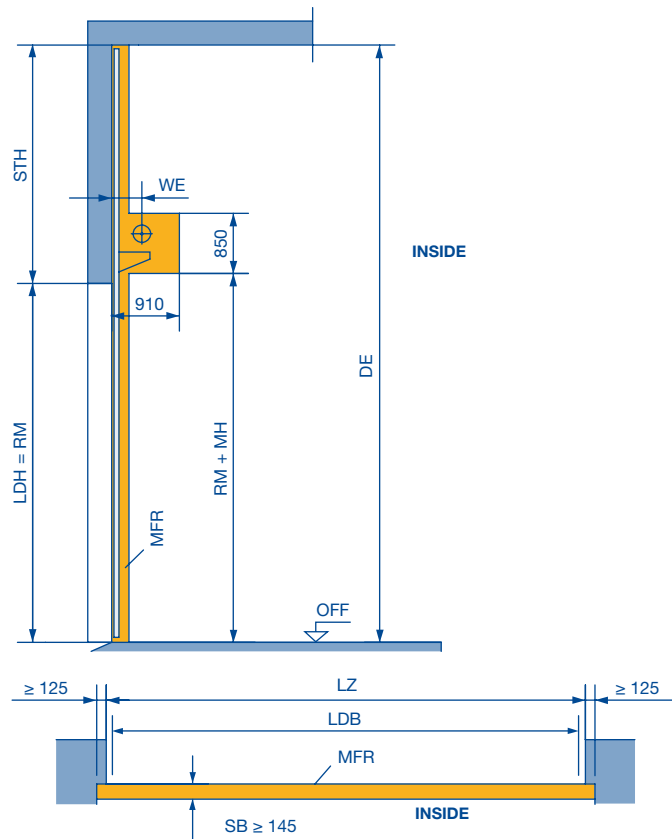
Dimensions in mm

Track Application: WG

Vertical track application

with low-mounted torsion spring shaft and steep track

(Application for loading ramp doors)

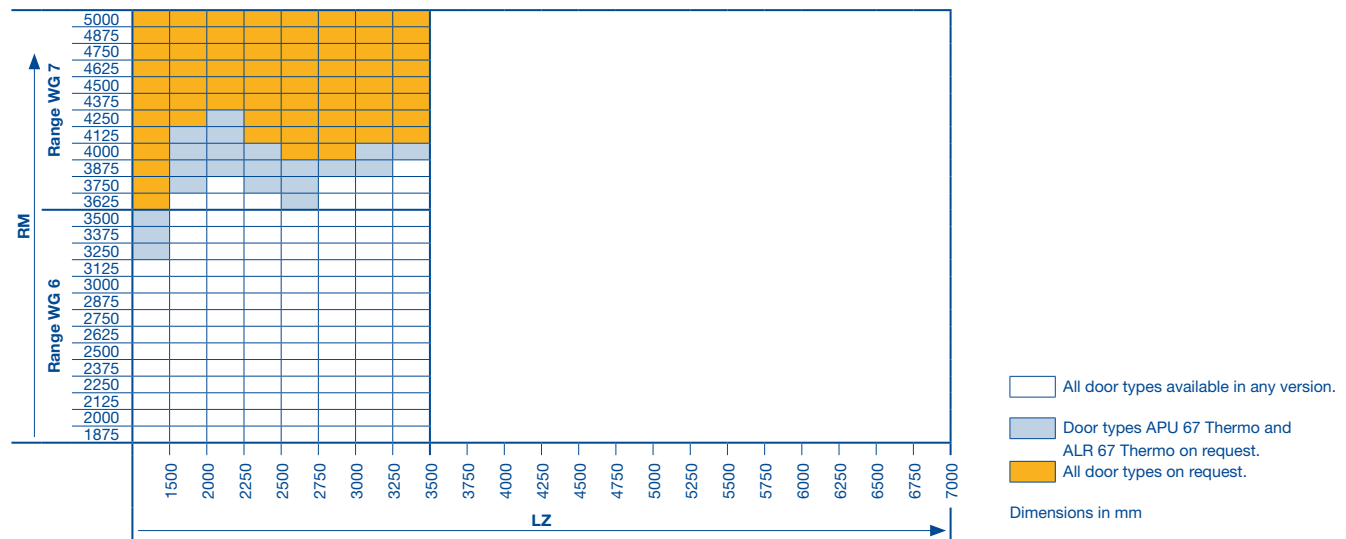


Notes:

- Door type ALR 67 Thermo Glazing, doors with real glass infill and wicket doors are not possible.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size ranges of the door types on pages 9–14 and 17–25 under all circumstances!
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.

Observe min. sideroom, see page 55.

DE	Ceiling height = $2 \times RM + 350$
Ship-to	Shaft centre from lintel WG 6 = 295 WG 7 = 315
STH	Min. headroom (see page 36)
SB	Slot width
LDB	Clear passage width with ThermoFrame (see page 55)
LDH	Clear passage height
RM	Grid height
LZ	Clear frame dimensions (from 1200)
MFR	Space for fitting the door
MH	Fitting height 400

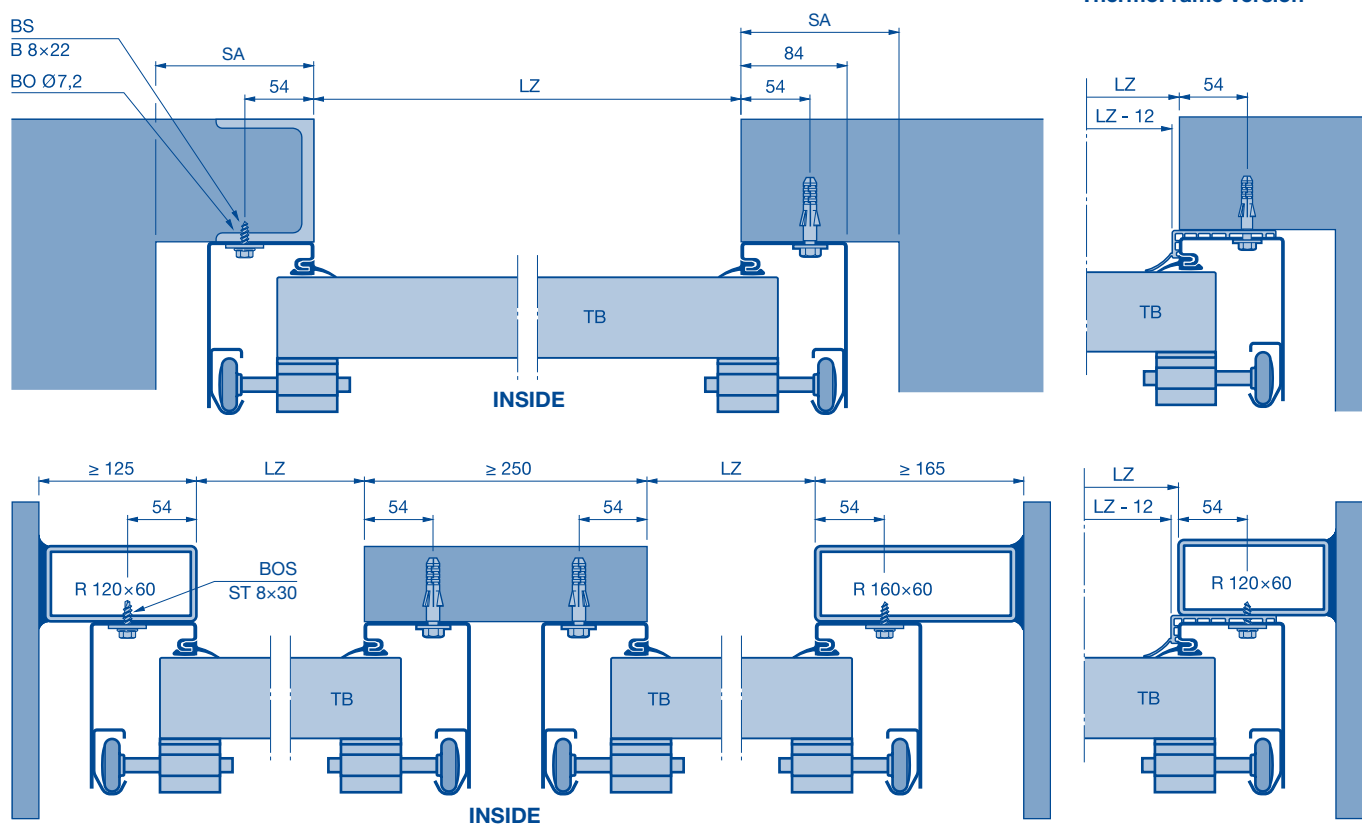


Sideroom

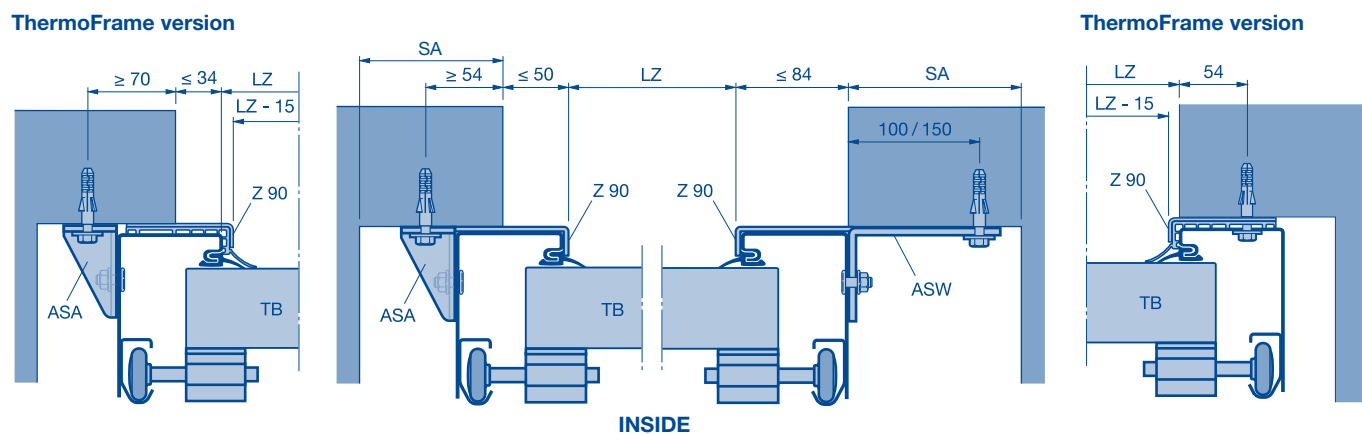
Required sideroom

Track application / designation		SA	Track application / designation	SA
N, NA, ND, NH, NS, GD, V, VA, VU, WG		125	Chain Hoist	Page 58
H, HA, HD, HG, HU, RD, RG		150	Shaft operators	Pages 60–67
Hand Pulley	N, NA, ND, NH, NS, GD	140	Direct drive operators	Page 72
	H, HA, HD, HG, HU, RD, RG	150		
	V, VA, VU, WG	125		

Sideroom



Sideroom with frame covering



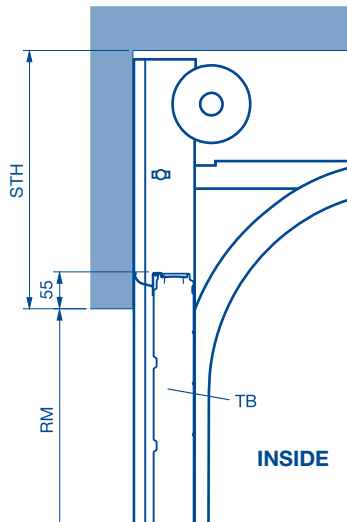
LZ Clear frame dimensions
BO Hole
BOS Drilling screw

BS Self-tapping screw
TB Door leaf
R Box section

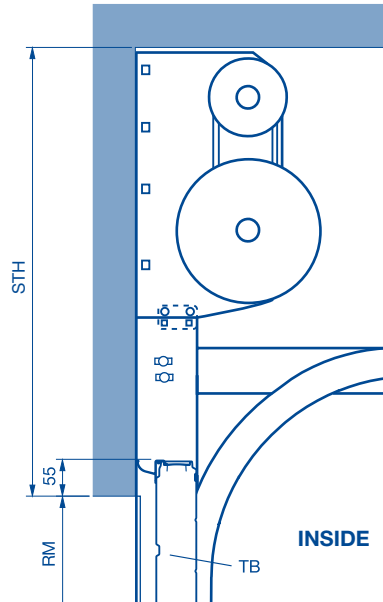
SA Sideroom
ASA Screw-on anchor 70 x 40
ASW Screw-on bracket 70 x 120/170

Lintel Fitting

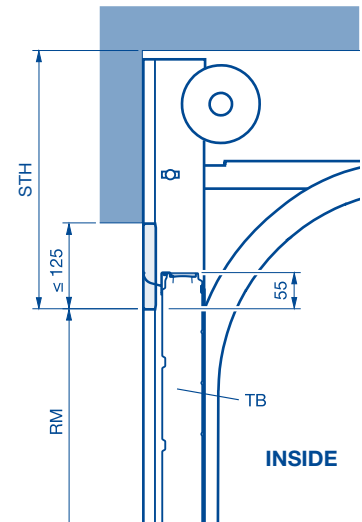
Normal lintel fitting
Lintel variation up to 30 mm high



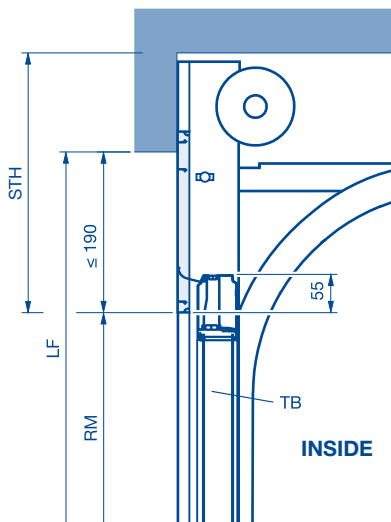
Normal lintel fitting
Double spring shaft



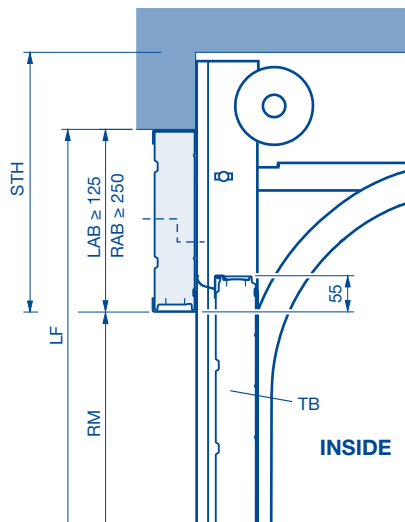
Single-skinned steel fascia for SPU 67 Thermo to make up for insufficient headroom up to 125 mm and LZ ≤ 8000 mm (only for track application N)



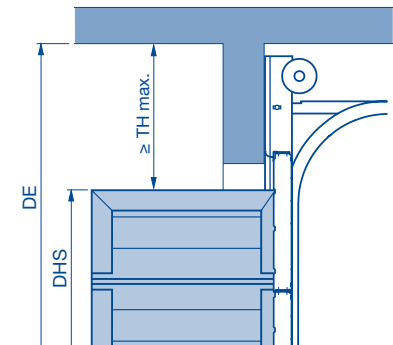
Smooth panel, anodised, for APU 67 Thermo, ALR 67 Thermo and ALR 67 Thermo Glazing to make up for insufficient headroom from 31 to 190 mm and LZ ≤ 7000 mm (only for track application N)



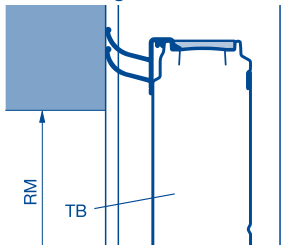
PU fascia panel to make up for insufficient headroom from 125 mm Aluminium fascia profile to make up for insufficient headroom (see table)



Fitting clearance for multiple-point locking



Lintel fitting with ThermoFrame



Aluminium fascia profiles

Height	Infill type
≥ 250	FU, XU, S3, S4, U3, U4, A3, A4, B3, B4, M3, M4

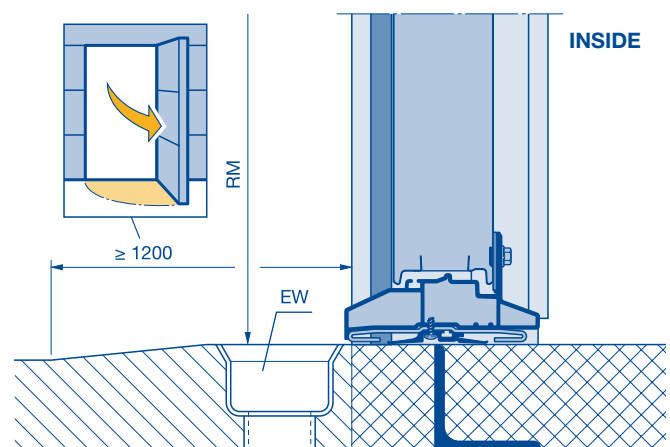
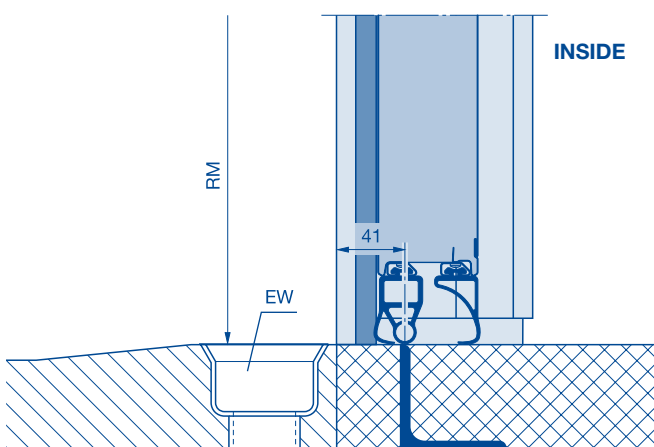
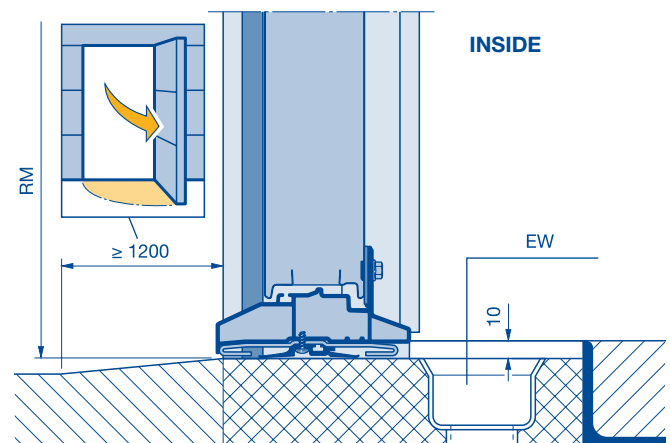
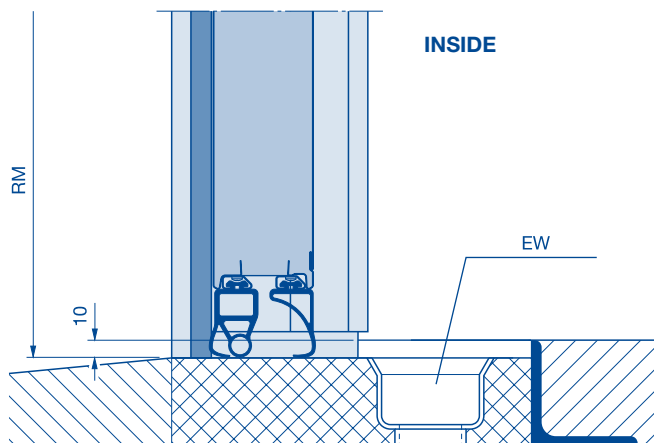
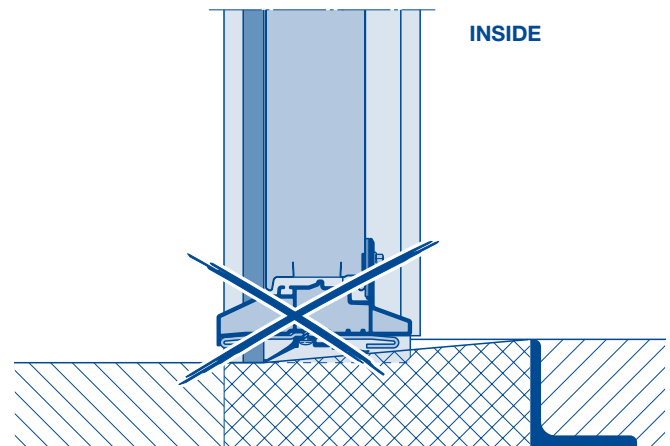
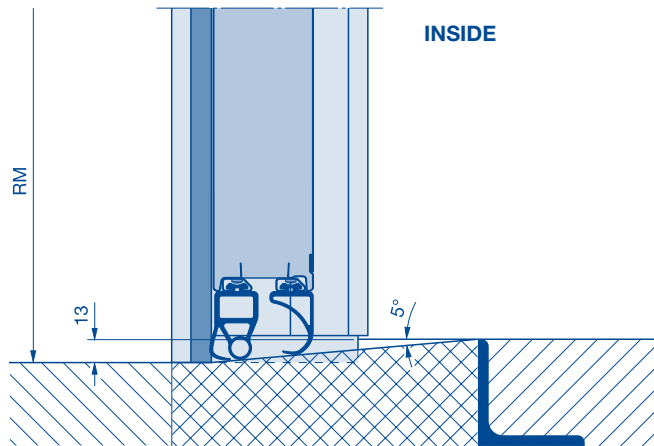
- Aluminium frame fascia panel with real glass infill E2 and G2 on request.

STH	Min. headroom (see page 36)
DHS	Clear passage heights of wicket door to grid height
RM	Grid height
TB	Door leaf
TH	Door section height
LAB	Fascia panel
RAB	Frame fascia panel
LF	Structural opening
LZ	Clear frame dimensions

Bottom Edge

Without wicket door / with wicket door and threshold rail

With wicket door with trip-free threshold



EW Drainage
RM Grid height

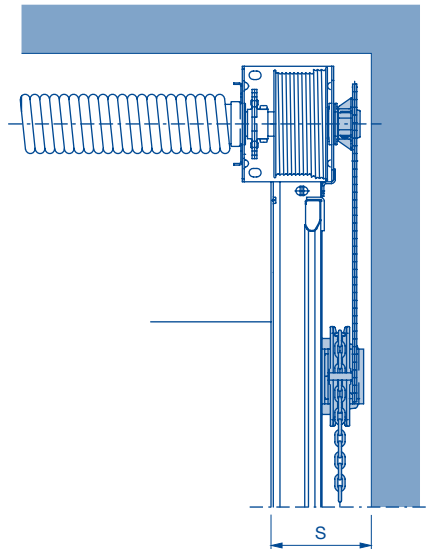
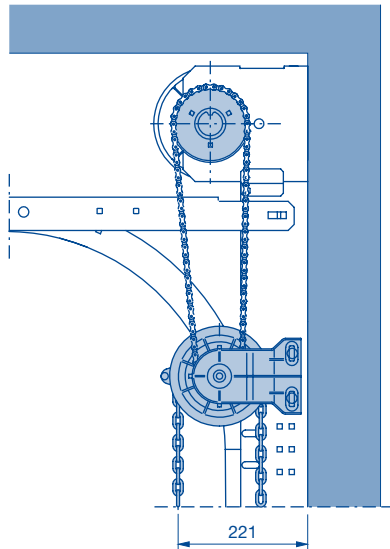
Chain Hoist

Hand Pulley

With rope or link steel chain

Chain Hoist

Track applications **N*, NA*, ND*, NH, NS*, GD*, H*, HA*, HD*, HG*, HU, RD, RG, VU, WG**



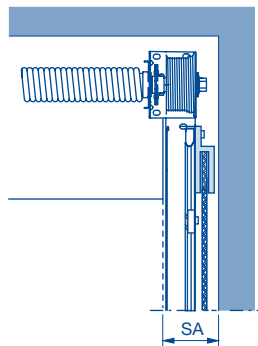
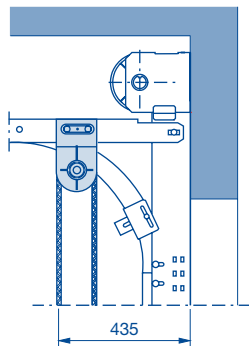
Track application	SA
N*, NA*, ND*, NH, NS*, GD*, V, VU, WG	165
H*, HA*, HD*, HG*, HU, RD, RG	185

Hand pulley with rope or link steel chain

Track applications up to 20 m² door surface

N*, NA*, ND*, NH, NS*, GD*, H*, HA*, HD*, HG*, HU, RD, RG

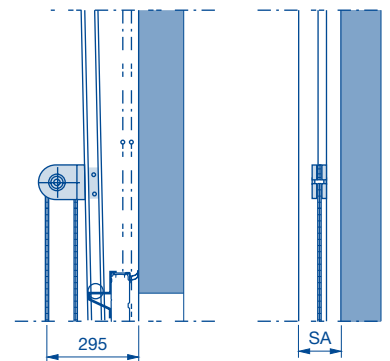
With rope or link steel chain



Track application	SA
N*, NA*, ND*, NH, NS*, GD*	140
H*, HA*, HD*, HG*, HU, RD, RG	150

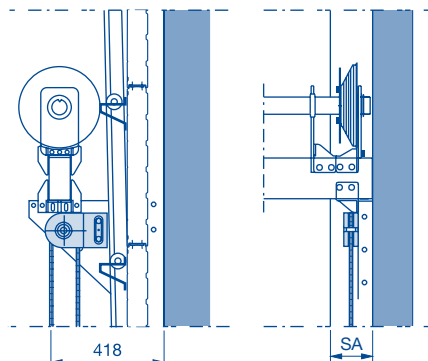
V, VA

With rope or link steel chain



HU, RG, RD, VU, WG

With rope or link steel chain



Track application	SA
V, VA, VU, WG	125
HU, RG, RD	150

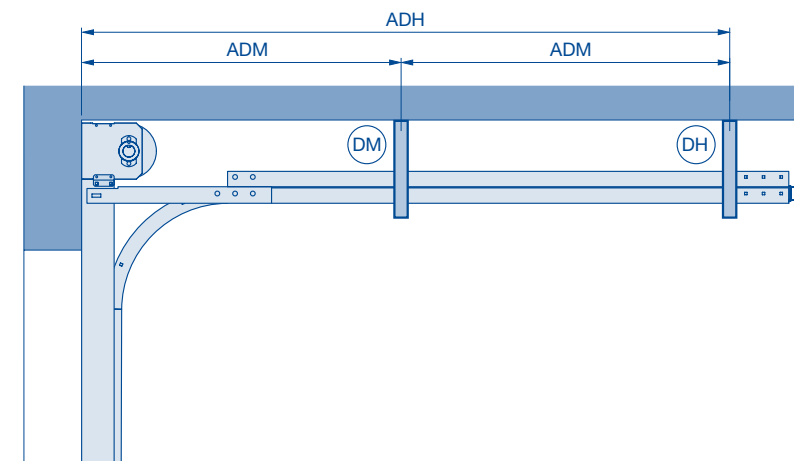
* For information on trap guard, see page 5
SA Sideroom

Ceiling Anchors

Track suspensions for all track applications except V, VA, VU and WG

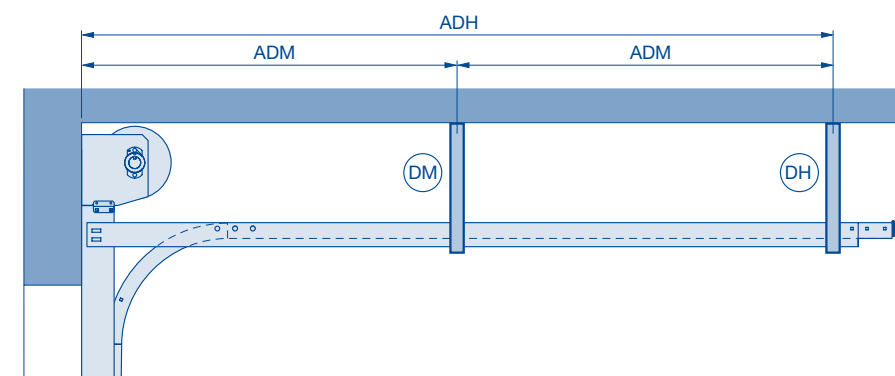
Track suspensions as ceiling anchors in five lengths, standard length 469 mm.

DH = rear ceiling anchor (see pages 36–54), door weights for roof loads (see page 36).



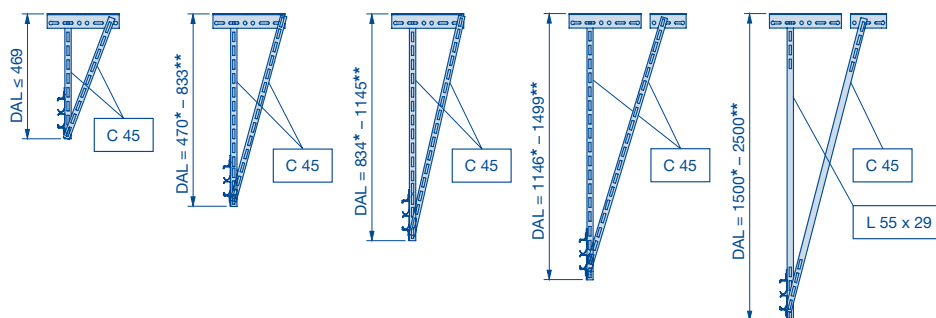
Double track (suspensions), door heights RM ≤ 5000

Double track (suspensions), Door heights RM ≤ 5000				
LZ	ADH	DM	DH	ADM
≤ 7000	– 1580	–	1	–
	1585 – 3745	1	1	ADH/2
	3755 – 5220	2	1	ADH/3
> 7000	– 1320	–	1	–
	1325 – 2220	1	–	ADH/2
	2225 – 3470	2	1	ADH/3
	3475 – 5220	3	1	ADH/4



C-rail (suspensions) all track sizes, Door heights RM > 5000

C-rail (suspensions) all track sizes, Door heights RM > 5000			
ADH	DM	DH	ADM
≤ 6320	1	1	ADH/2
> 6320	2	1	ADH/2



Note:

- On-site fastening elements must be able to absorb forces up to 1.5 kN per fixing point!
- Always obtain the permission of the structural engineer before fastening the door system to supporting structural elements.

Max. distance of suspensions (ADM)	
LZ	Max. ADM ***
≤ 3000	2300
3010 – 4000	2200
4010 – 5000	2100
5010 – 8000	1850

* Min.

** Max.

*** Except for doors with wicket door, real glass infill, Vitraplan, facade doors, ALR / APU 67 Thermo. Then the following applies: max. ADM = 1850 mm.

DH Rear ceiling anchor
DM Central ceiling anchor
DAL Ceiling anchor length

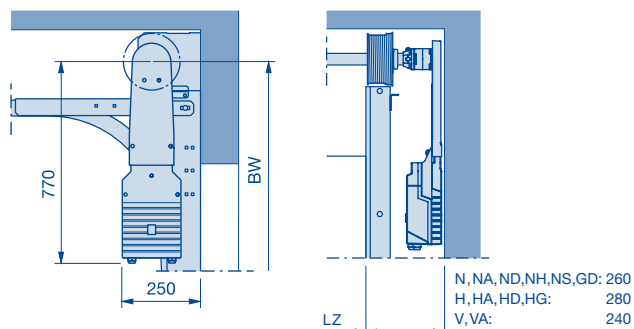
ADH Distance to rear ceiling anchor
ADM Distance to central ceiling anchor

Shaft Operator WA 300

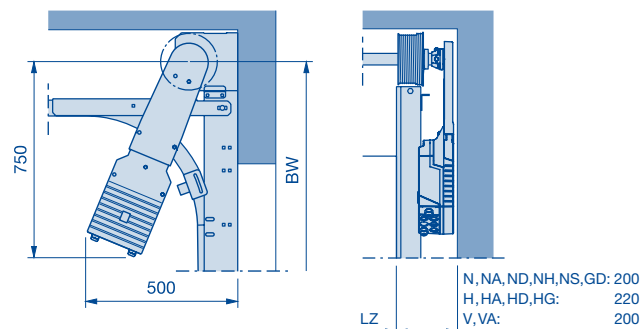
Shaft operator WA 300 for track applications N, NA, ND, NH, NS, GD, H, HA, HD, HG, V and VA

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

Fitting example ⑧ right



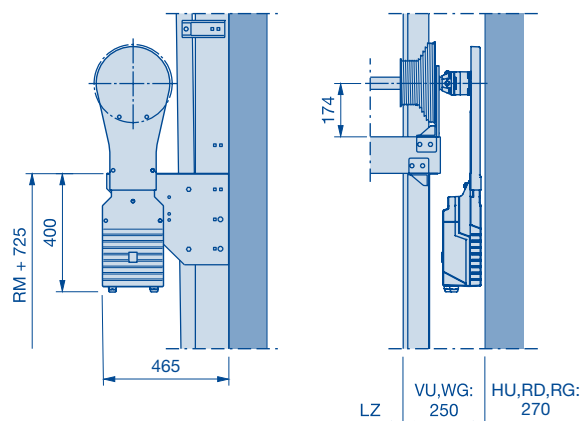
Fitting example ⑨ right



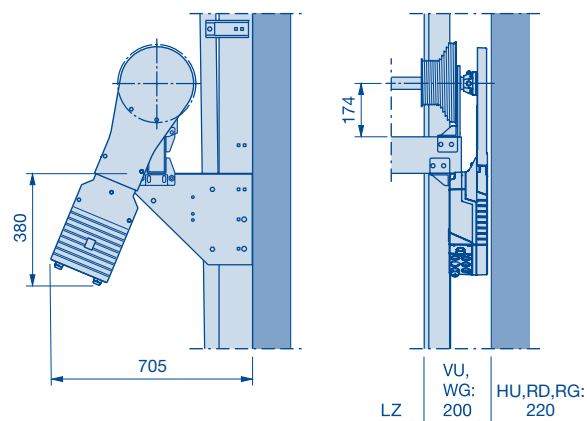
Shaft operator WA 300 for track applications HU, RD, RG, VU and WG

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

Fitting example ⑧ right



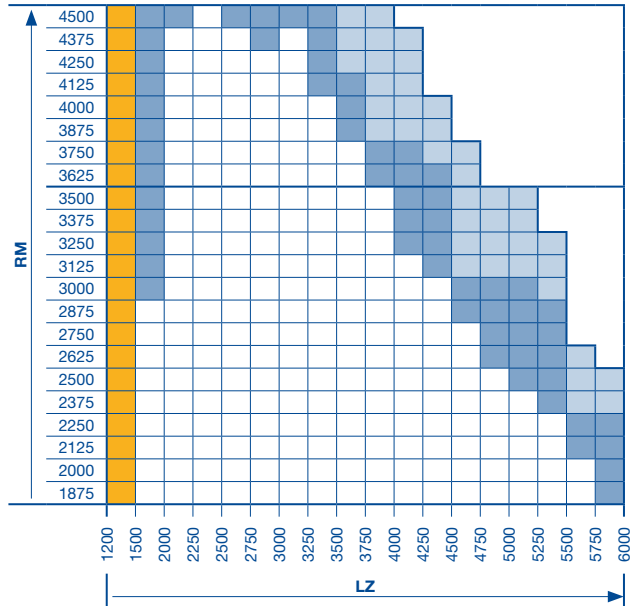
Fitting example ⑨ right



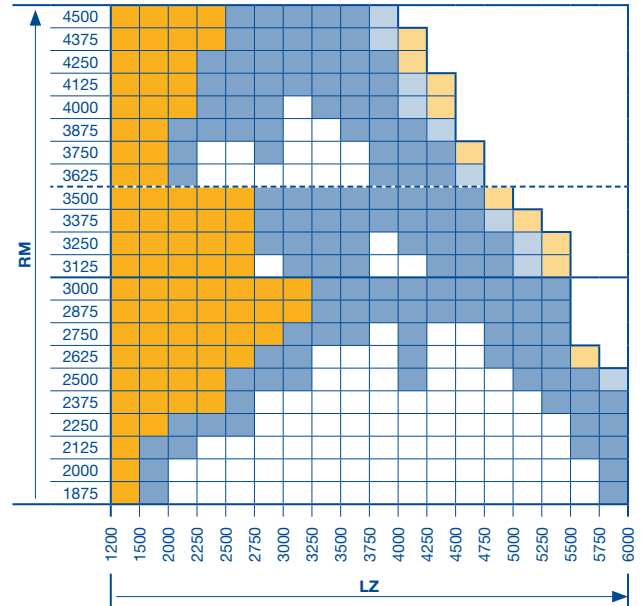
Shaft Operator WA 300

Size range WA 300

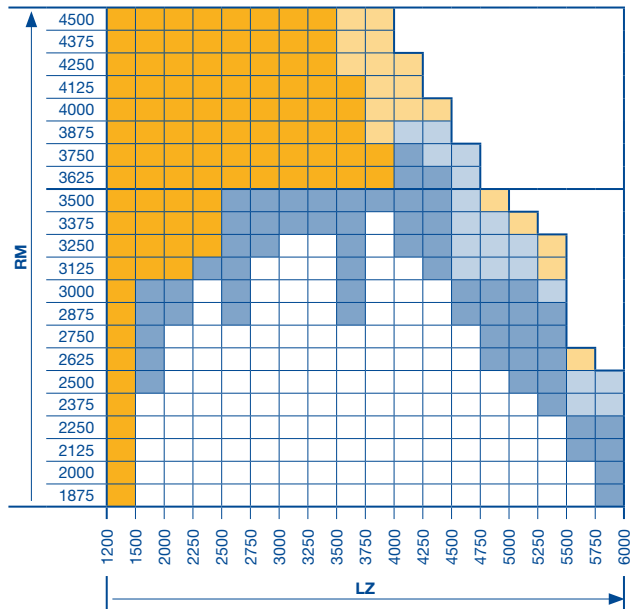
Track applications: N, NA and NH



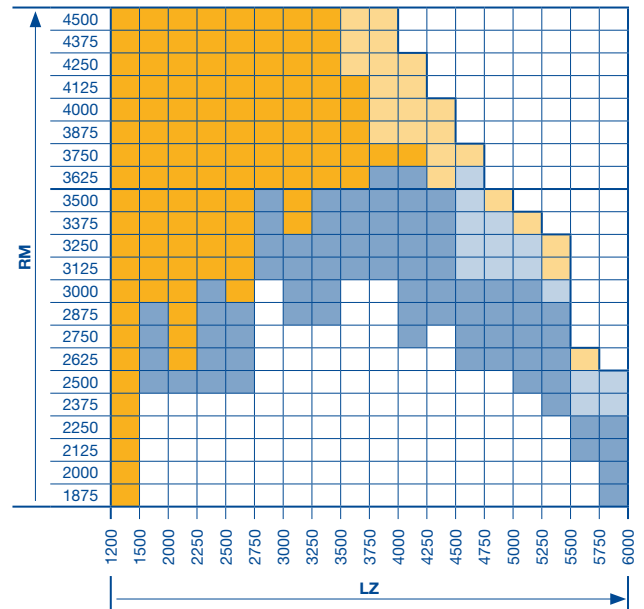
Track applications: ND and GD



Track application: H, HA, HG, HU and RG



Track application: HD and RD



- All door types available in any version.
- Only door type SPU 67 Thermo possible. Door type APU 67 Thermo and ALR 67 Thermo not possible.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Only door type SPU 67 Thermo on request. Door type APU 67 Thermo and ALR 67 Thermo not possible.
- All door types and versions on request.

Note:
Track application NS on request!

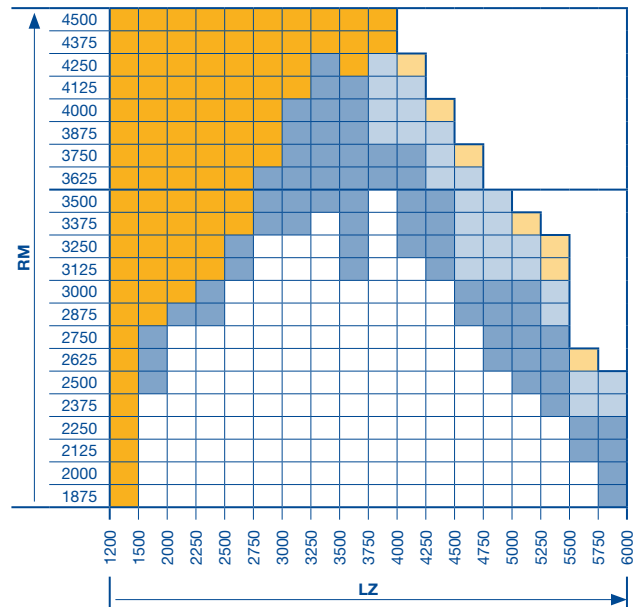
LZ Clear frame dimensions
RM Grid height

Dimensions in mm

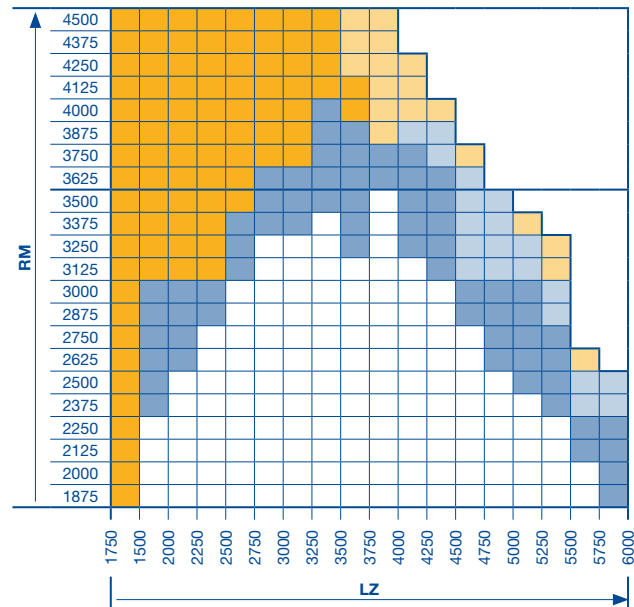
Shaft Operator WA 300

Size range WA 300

Track application: V and VA



Track application: VU and WG



- All door types available in any version.
- Only door type SPU 67 Thermo possible. Door type APU 67 Thermo and ALR 67 Thermo not possible.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Only door type SPU 67 Thermo on request. Door type APU 67 Thermo and ALR 67 Thermo not possible.
- All door types and versions on request.

LZ Clear frame dimensions
RM Grid height

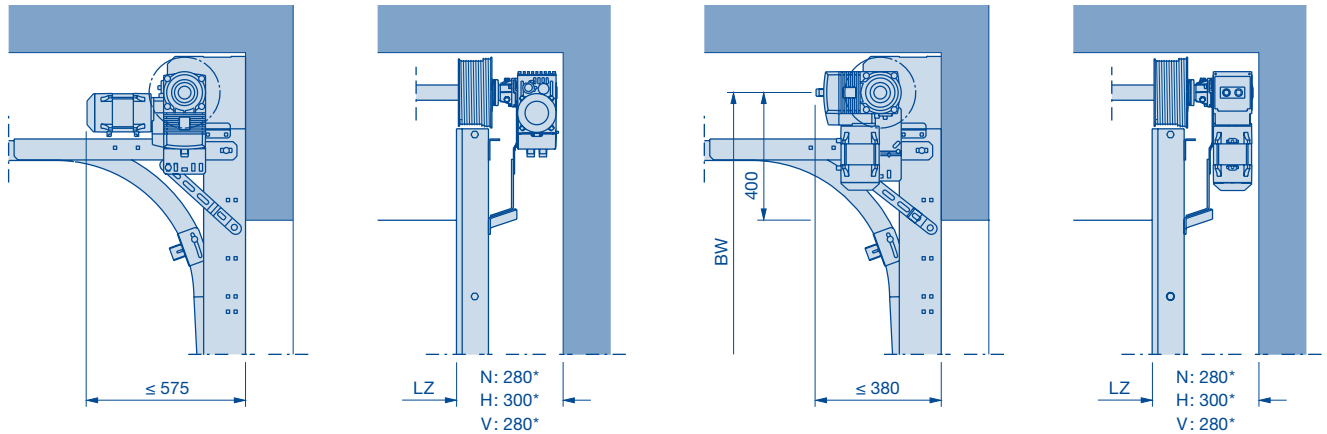
Dimensions in mm

Shaft operator WA 400

As a frame-mounted operator

Shaft operator WA 400 for all track applications, except HU, RD, RG, VU and WG

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

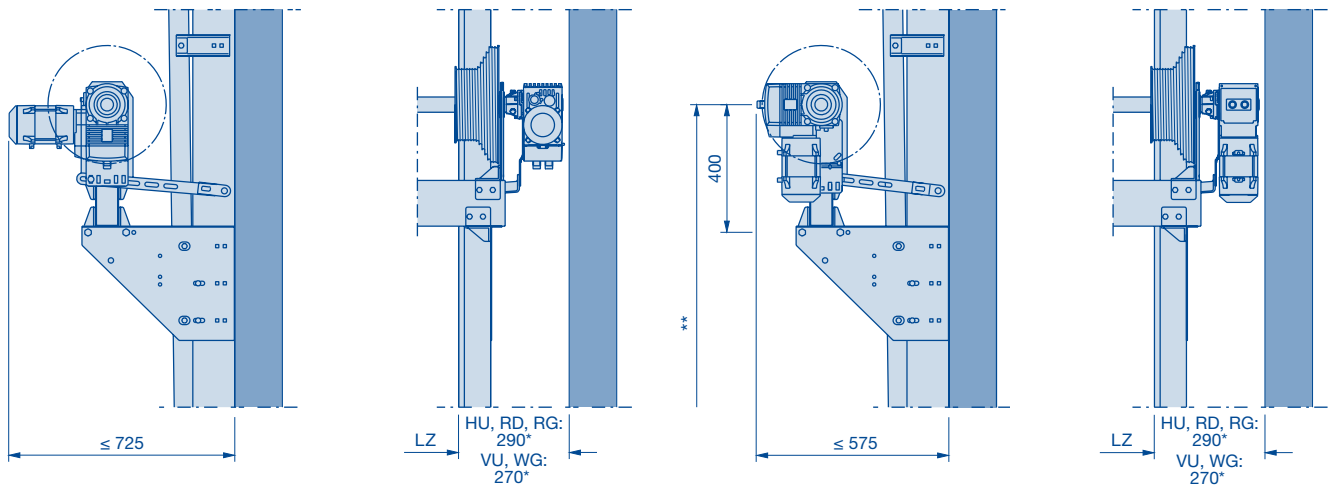


*** Note:**

Dimension + 75 mm if using a non-jointed emergency crank handle

Shaft operator WA 400 for track applications HU, RD, RG, VU and WG

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.



*** Note:**

Dimension + 75 mm if using a non-jointed emergency crank handle

** On request

LZ Clear frame dimensions

Shaft Operator WA 400

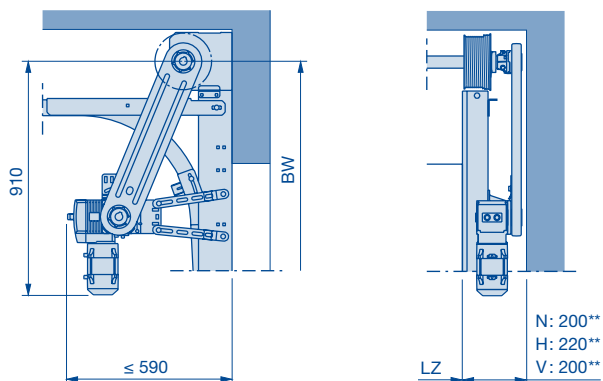
With chain box

Shaft operator WA 400 for all track applications, except HU, RD, RG, VU and WG

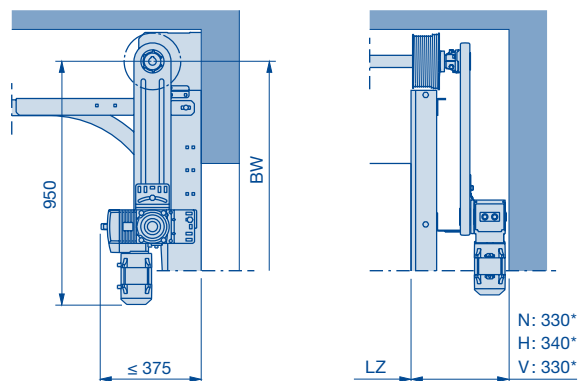
As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

In fitting example 5: on the side opposite the door lock.

Fitting example ⑤ right



Fitting example ⑥ right

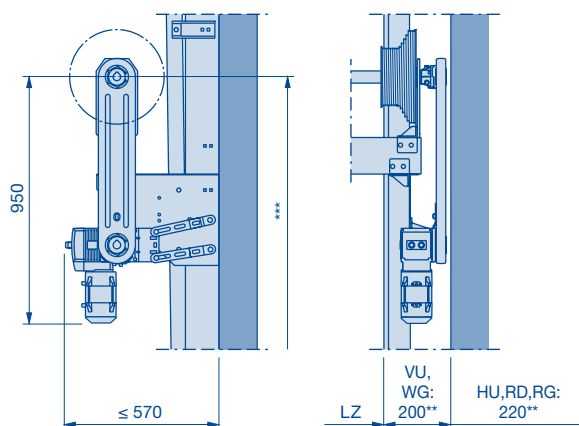


Shaft operator WA 400 for track applications HU, RD, RG, VU and WG

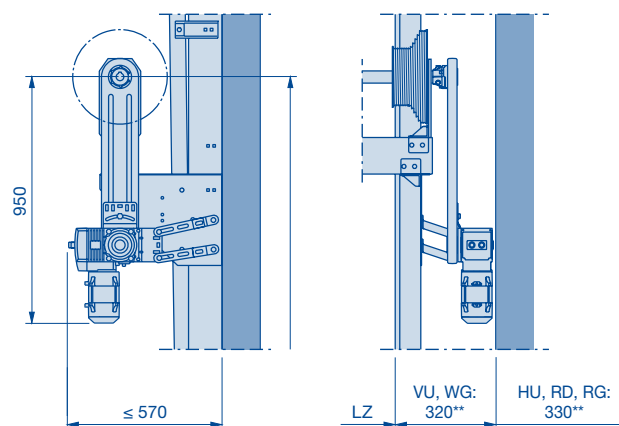
As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

In fitting example 5: on the side opposite the door lock.

Fitting example ⑤ right



Fitting example ⑥ right



Note:

* Dimension + 75 mm if using a non-jointed emergency crank handle

** Dimension + 40 mm if using a non-jointed emergency crank handle

*** On request

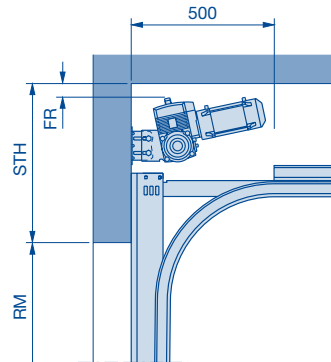
BW Position of shaft support
LZ Clear frame dimensions

Shaft Operator WA 400

For central mounting

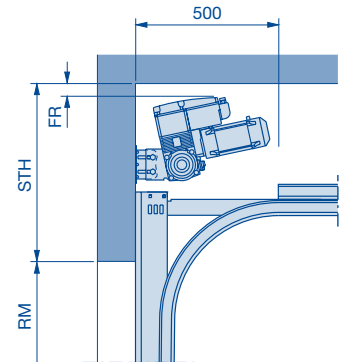
Shaft operator WA 400 for track applications N and ND

Control A / B 445, 460



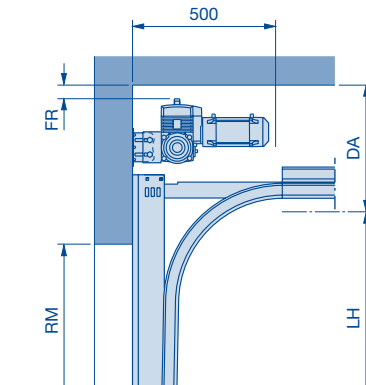
Track application	A / B 445, 460		B 460 FU	
	STH min.	FR min.	STH min.	FR min.
N 1	555	45	625	45
N 2	585	50	650	45
N 3 (RM > 7000)	–	–	710 (810)	45
ND 1	555	65	585	48
ND 2	585	75	605	48
ND 3 (RM > 7000)	–	–	710 (810)	48

Control B 460 FU



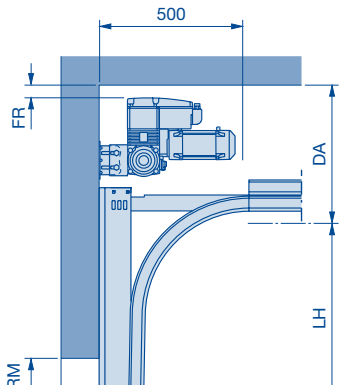
Shaft operator WA 400 for the track applications NH and GD

Control A / B 445, 460



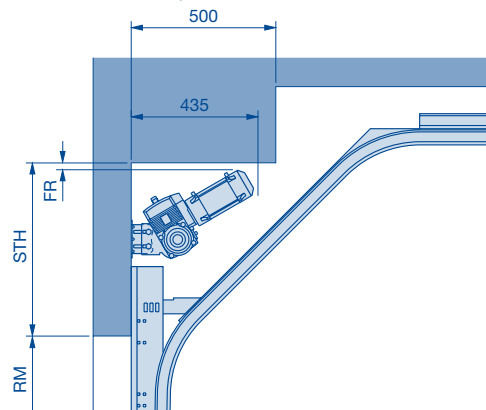
Track application	A / B 445, 460		B 460 FU	
	Min. DA	FR min.	Min. DA	FR min.
NH 1/GD 1	415	50	480	45
NH 2/GD 2	440	50	485	45
NH 3	–	–	565	45

Control B 460 FU

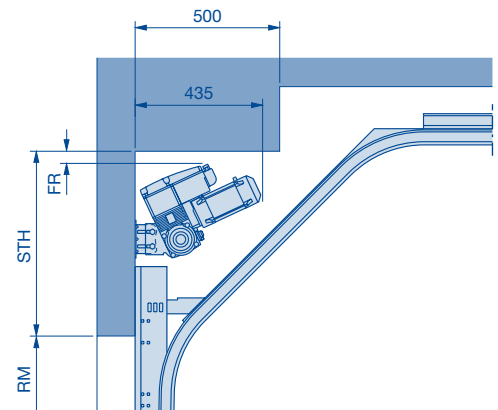


Shaft operator WA 400 for track application NS

Control A / B 445, 460



Control B 460 FU



Track application	A / B 445, 460		B 460 FU	
	STH min.	FR min.	STH min.	FR min.
NS 1	605	20	650	45
NS 2	635	25	675	45

Note:

WA 400 as a centre motor in conjunction with double spring shaft on request!

STH Headroom
RM Grid height
da Distance to ceiling

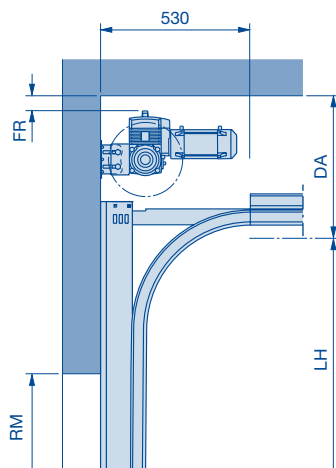
LH Track height
FR Clearance ceiling / shaft operator

Shaft Operator WA 400

For central mounting

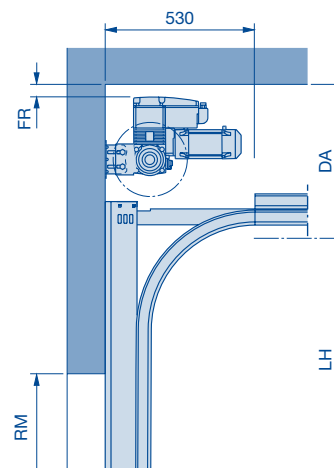
Shaft operator WA 400 for track applications H, HG and HD

Control A / B 445, 460



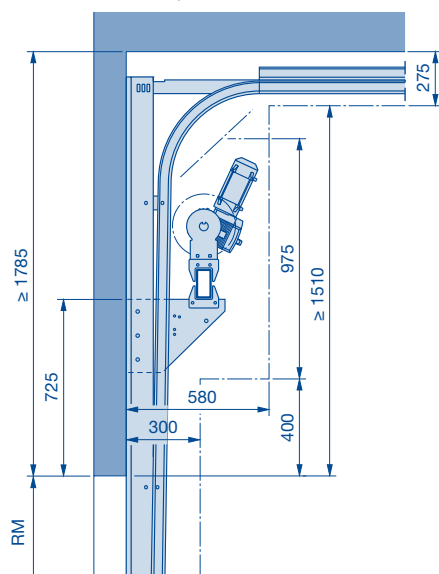
Track application	A / B 445, 460		B 460 FU	
	Min. DA	FR min.	Min. DA	FR min.
H 4, HG 4	500	55	540	45
H 5, HG 5	500	55	540	45
H 8	-	-	565	45
HD	On request			

Control B 460 FU

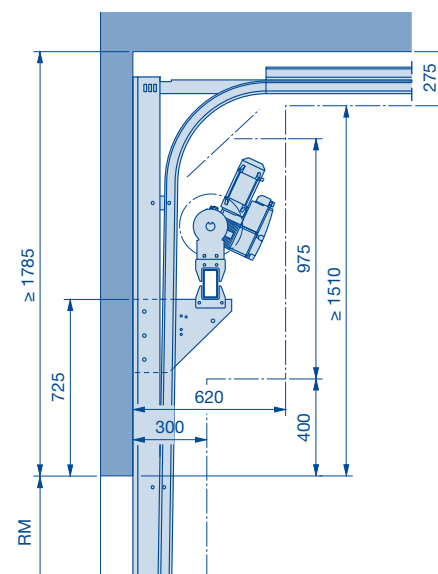


Shaft operator WA 400 for the track applications HU, RD and RG

Control A / B 445, 460



Control B 460 FU



Note:

WA 400 as a centre motor in conjunction with double spring shaft on request!

RM Grid height
da Distance to ceiling
LH Track height

FR Clearance ceiling / shaft operator

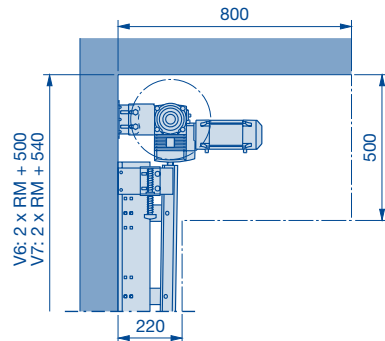
Shaft Operator WA 400

For central mounting

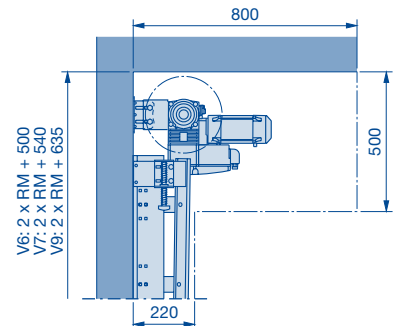
Chain Drive Operator ITO 400

Shaft operator WA 400 for track application V

Control A / B 445, 460

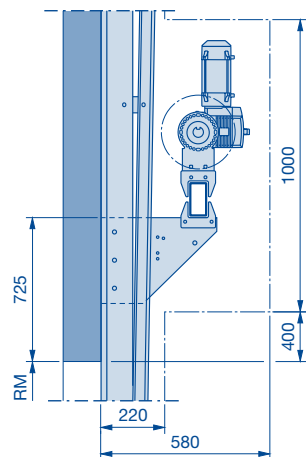


Control B 460 FU

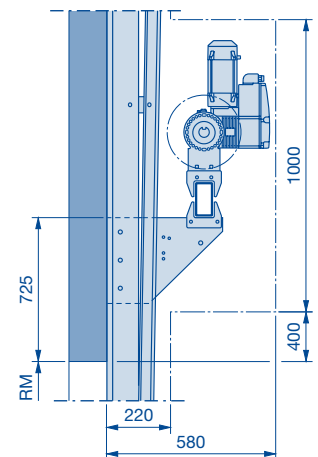


Shaft operator WA 400 for track applications VU and WG

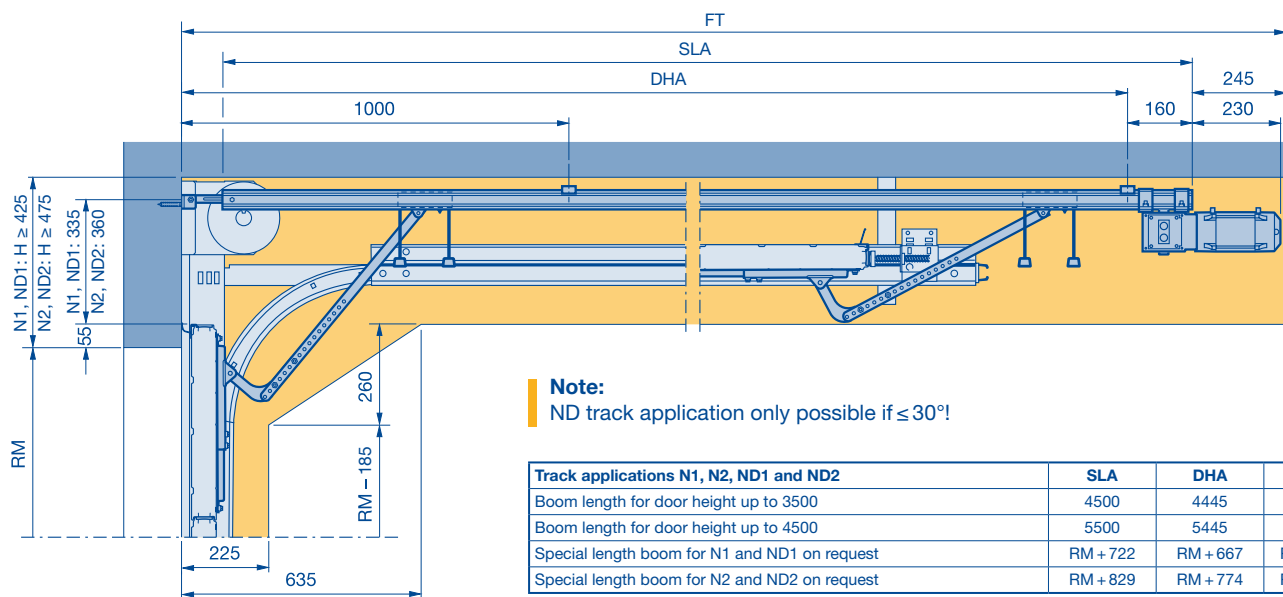
Control A / B 445, 460



Control B 460 FU



ITO 400 track application N and ND up to LZ ≤ 8000 (doors with wicket door on request)



Note:
ND track application only possible if $\leq 30^\circ$

Track applications N1, N2, ND1 and ND2	SLA	DHA	FT
Boom length for door height up to 3500	4500	4445	4850
Boom length for door height up to 4500	5500	5445	5850
Special length boom for N1 and ND1 on request	RM + 722	RM + 667	RM + 1072
Special length boom for N2 and ND2 on request	RM + 829	RM + 774	RM + 1179

Note:

WA 400 as a centre motor in conjunction with double spring shaft on request!

H Headroom
RM Grid height
da Distance to ceiling

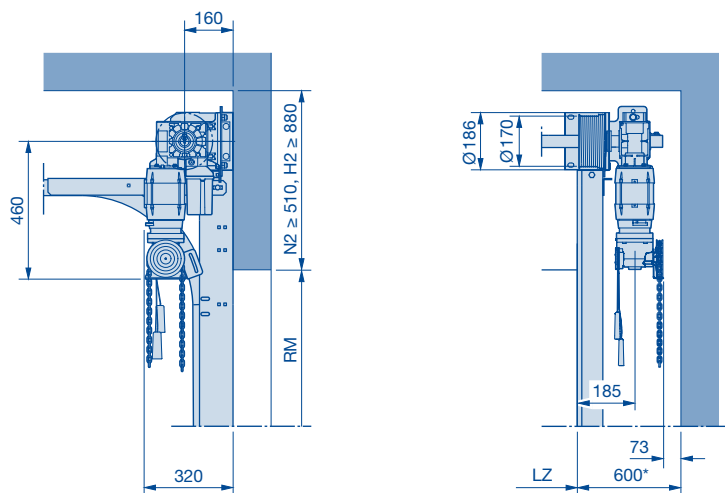
LH Track height
F Clearance ceiling / shaft operator
FT Clearance for door operator

SLA Operator boom length
DHA Operator rear ceiling anchor

Direct Drive Operators S17.24 and S35.30

With Door Leaf Speeds

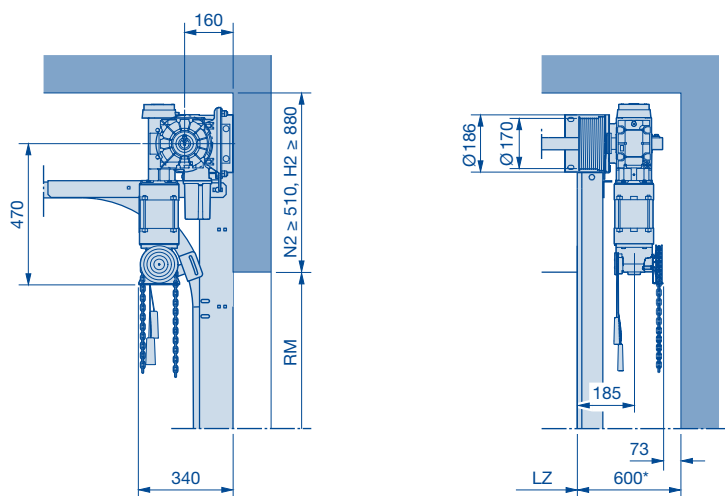
Direct drive operator S17.24



Door leaf speeds – Control 445 R and 460 R

Direct drive operator	Cable drum diameter in mm	Max. speed in mm/s – open/close
S17.24	170	210

Direct drive operator S35.30



Door leaf speeds – Control 445 R and 460 R

Direct drive operator	Cable drum diameter in mm	Max. speed in mm/s – open/close
S35.30	170	265

LZ Clear frame dimensions

RM Grid height

* 355 mm for complete assembly with operator shaft

Shaft Operator WA 300 / WA 400

Door Leaf Speeds

Door leaf speeds WA 300 / WA 400

(ATTENTION! The stated speeds can **only be achieved under optimum conditions** regarding door size and track size.
More detailed information on request, as it is dependent on door heights and track heights.)

Fitting	WA 300 S4		WA 400													
	Integrated / external control 360		Control 445 and 460								Control B 460 FU					
			Frame-mounted operator				Chain box operator				Frame-mounted operator [1]	Chain box operator [1]	Without twin roller	With twin roller	Without twin roller	With twin roller
			A control with optosensors	A control VL 1, VL 2; HLG	A control with optosensors	A control VL 1, VL 2; HLG										
			B control with optosensors or VL 1/2; HLG		B control with optosensors or VL 1/2; HLG											
Max. speed in mm/s, open / close [5]	Max. speed in mm/s, open / close [6]	rpm [1]	Max. speed in mm/s, open / close	rpm [1]	Max. speed in mm/s, open / close	rpm [1]	Max. speed in mm/s, open / close	rpm [1]	Max. speed in mm/s, open / close	Max. speed in mm/s, open / close	Max. speed in mm/s, open / close	Max. speed in mm/s, open / close	Max. speed in mm/s, open / close			
N1, NA1, NH1	190	95	24	150	30	190	24	150	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
N2, NA2, NH2	210	105	19	170	30	265	19	170	30	265	Yes	Yes	300/200	450/200	300/300	450/300 (450)
N3	-	-	-	-	-	-	13	155	16	190	Yes	Yes	300/200	450/200	300/300	450/300 (450)
ND1, ≤ 30°	190	95	30	190	30	190	30	190	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
ND2, ≤ 30°	210	105	24	210	30	265	24	210	30	265	Yes	Yes	300/200	450/200	300/300	450/300 (450)
ND1, > 30°	160/190	80/95	19	190	24	300	19	190	24	300	Yes	Yes	300/200	450/200	300/300	450/300 (450)
ND2, > 30°	-	-	16	190	19	275	16	190	19	275	Yes	Yes	300/200	375/200	300/300	375/300 (375)
ND3	-	-	-	-	-	-	13	155	16	190	Yes	Yes	300/200	450/200	300/300	450/300 (450)
NH3	-	-	-	-	-	-	13	155	16	190	Yes	Yes	300/200	450/200	300/300	450/300 (450)
NS1	190	95	24	150	30	190	24	150	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
NS2	210	105	19	170	30	265	19	170	30	265	Yes	Yes	300/200	450/200	300/300	450/300 (450)
GD1	190	95	24	150	30	190	24	150	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
GD2	210	105	19	170	30	265	19	170	30	265	Yes	Yes	300/200	450/200	300/300	450/300 (450)
H4	160/190 [1;4]	80/95 [1;4]	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
H5	210	105	19/16 [2]	210 [2]	24/19	290	16/13	180	24/19	290	Yes	Yes	300/200	440/200	300/300	440/300 (440)
H8	-	-	-	-	-	-	16 [2]	250 [2]	16	250	Yes	Yes	300/200	450/200	300/300	450/300 (450)
HA4, HG4	160/190 [1;4]	80/95 [1;4]	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
HA5, HG5	210	105	19/16 [2]	210 [2]	24/19	290	16/13	180	24/19	290	Yes	Yes	300/200	440/200	300/300	440/300 (440)
HD4	160/190 [1;4]	80/95 [1;4]	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
HD5	210	105	19/16	210	24/19	290	16/13	180	24/19	290	Yes	Yes	300/200	440/200	300/300	440/300 (440)
HD8	-	-	-	-	-	-	16 [2]	250 [2]	16	250	Yes	Yes	300/200	450/200	300/300	450/300 (450)
HU4	160/190 [1;4]	80/95 [1;4]	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
HU5	210	105	19/16 [2]	210 [2]	24/19	290	16/13	180	24/19	290	Yes	Yes	300/200	440/200	300/300	440/300 (440)
RD4	160/190 [1;4]	80/95 [1;4]	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
RD5	210	105	19/16 [2]	210 [2]	24/19	290	16/13	180	24/19	290	Yes	Yes	300/200	440/200	300/300	440/300 (440)
RG4	160/190 [1;4]	80/95 [1;4]	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
RG5	210	105	19/16 [2]	210 [2]	24/19	290	16/13	180	24/19	290	Yes	Yes	300/200	440/200	300/300	440/300 (440)
V6	160/190 [1;4]	80/95 [1;4]	16	180	24	300	16	180	24	300	Yes	Yes	450/200 [3]		450/200 (450) [3]	
V7	190	95	19/16 [2]	210 [2]	19	275	13	170	19	275	Yes	Yes	440/200 [3]		440/200 (440) [3]	
V9	-	-	-	-	-	-	16 [2]	250 [2]	16	250	Yes	Yes	440/200 [3]		440/200 (440) [3]	
VU6	160/190 [1;4]	80/95 [1;4]	16	180	24	300	16	180	24	300	Yes	Yes	450/200 [3]		450/200 (450) [3]	
VU7	190	95	19/16 [2]	210 [2]	19	275	13	170	19	275	Yes	Yes	440/200 [3]		440/200 (440) [3]	
VU9	-	-	-	-	-	-	16 [2]	250 [2]	16	250	Yes	Yes	440/200 [3]		440/200 (440) [3]	
VA6	160/190 [1;4]	80/95 [1;4]	16	180	24	300	16	180	24	300	Yes	Yes	450/200 [3]		450/200 (450) [3]	
WG6	160/190 [1;4]	80/95 [1;4]	16	180	24	300	16	180	24	300	Yes	Yes	450/200 [3]		450/200 (450) [3]	
WG7	190	95	19/16 [2]	210 [2]	19	275	13	170	19	275	Yes	Yes	440/200 [3]		440/200 (440) [3]	

[1] Speed corresponding to high-lift / door height (RM)

[2] Only possible with A445 control with press-and-hold operation

[3] Twin rollers not necessary with track applications V and VU!

[4] Max. speed depending on the clear frame dimensions

[5] With closing edge safety device (optosensors, VL 1 or VL 2)

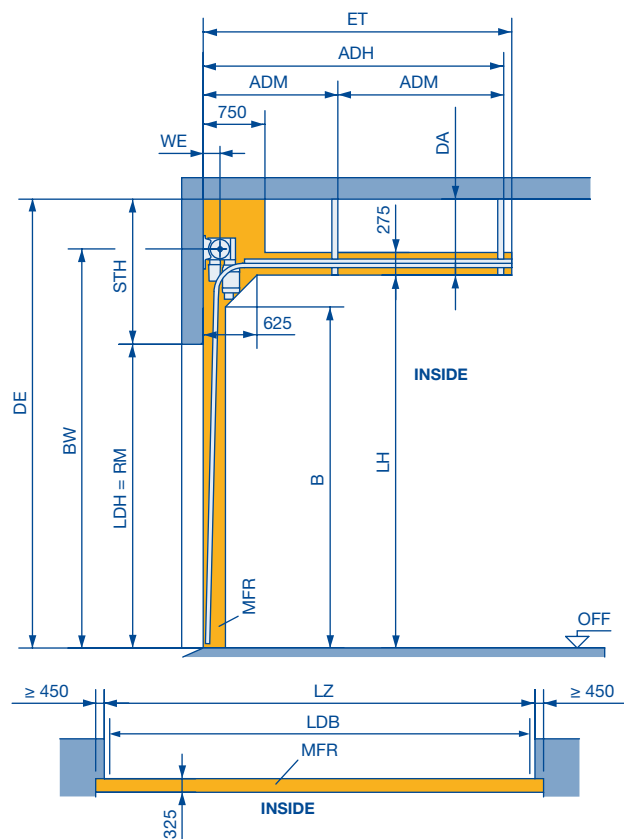
[6] From 2500 mm above FFL to FFL without closing edge safety device to comply with EN 13241-1

Note

Double spring shaft only possible in conjunction with control B 460 FU!

Track Application: H with Direct Drive Operator S75 / S140

High-lift track application



Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- The direct drive operator is generally available on request.

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

- Other versions on request
- Observe the min. sideroom, see page 55

LDH	Clear passage height
RM	Grid height
LH	Track height = ceiling height - 740 Max. LH = 2 × RM - 815 (max. LH ≤ 10200)
BW	Position of shaft support H 10 + H 11 = LH + 350
ET	Min. distance back H 10 + H 11 = 2 × RM - LH + 785
ADH	Distance to rear ceiling anchor H 10 + H 11 = 2 × RM - LH + 419
ADM	Distance between central ceiling anchor (see page 71)
Ship-to	Shaft centre from lintel

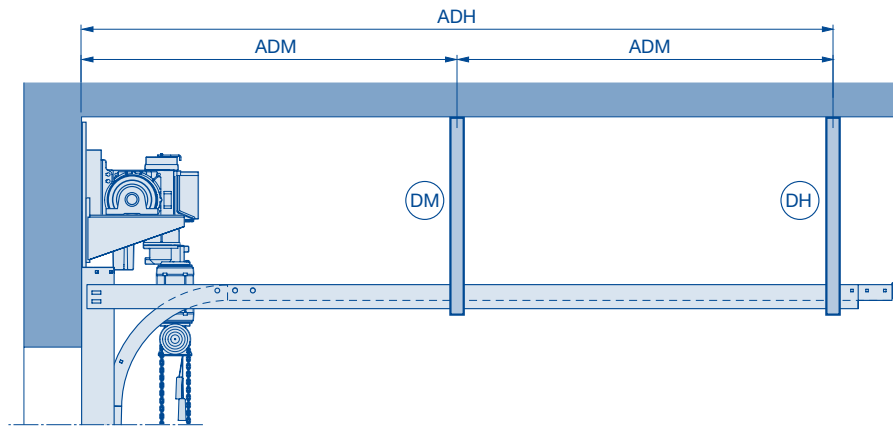
Ship-to	RM	Cable drum
145	≤ 6000	Ø 250
205	> 6000	Ø 355

STH	Min. headroom = 1200
da	Min. distance to ceiling H 10 + H 11 = 740
DE	Ceiling height
LZ	Clear frame dimensions
LDB	Clear passage width with ThermoFrame (see page 55)
MFR	Space for fitting the door
B	Start of double radius, LH - 325

Ceiling Anchors

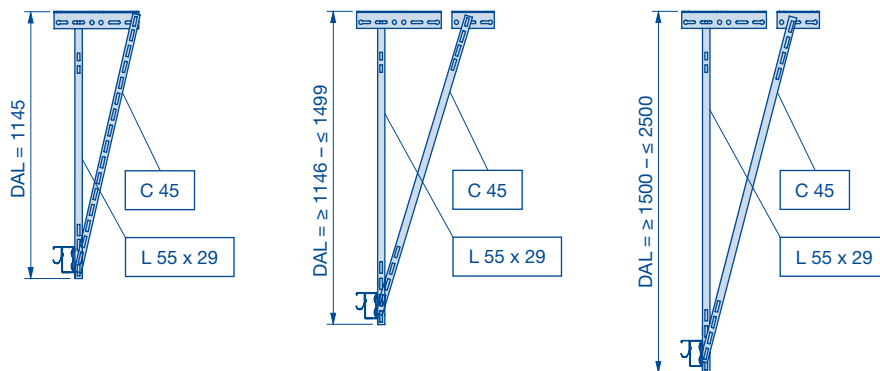
Track suspensions for track application H with direct drive operator

Track suspensions as ceiling anchors in five lengths, standard length 1145 mm.
DH = rear ceiling anchor (see page 70), door weights for roof loads (see page 70).



C-rail (suspensions) only track application size H 10, H 11

LZ	ADH	DM	DH	ADM
≤ 6000	1234 ≤ 1561	–	1	–
	1562 ≤ 7976	1	1	ADH/2
> 6000	1234 ≤ 1561	–	1	–
	1562 ≤ 3726	1	1	ADH/2
	3727 ≤ 5976	2	1	ADH/3



DH Rear ceiling anchor
DM Central ceiling anchor

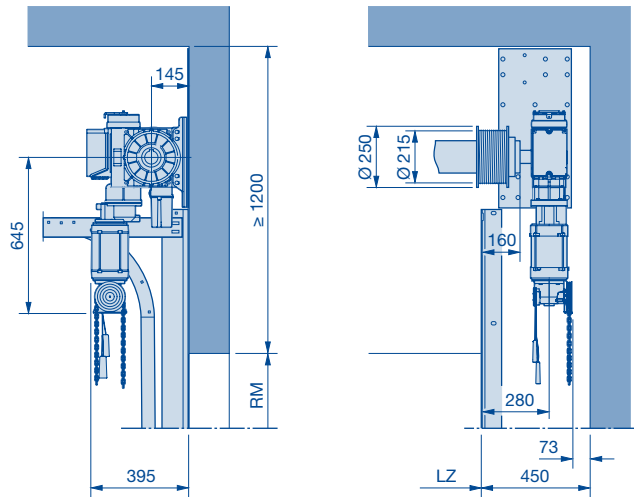
LZ Clear frame dimension
DAL Ceiling anchor length

ADH Distance to rear ceiling anchor
ADM Distance to central ceiling anchor

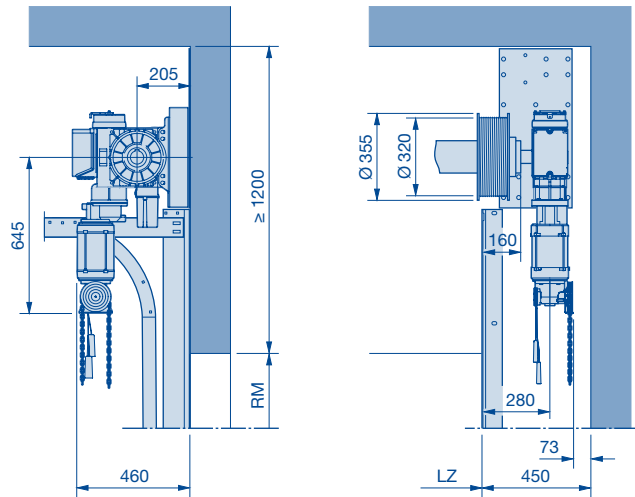
Direct Drive Operators S75 and S140

Direct drive operators S75 and S140 for track application H

RM ≤ 6000



RM > 6000



Door leaf speeds – Control 445 R and 460 R

Direct drive operator	Cable drum diameter in mm	Max. speed in mm / s – open / close
S75	215	110
S75	320	170
S140	215	80
S140	320	120

LZ Clear frame dimensions
RM Grid height

Infill Overview

Determination of the Roof Slope

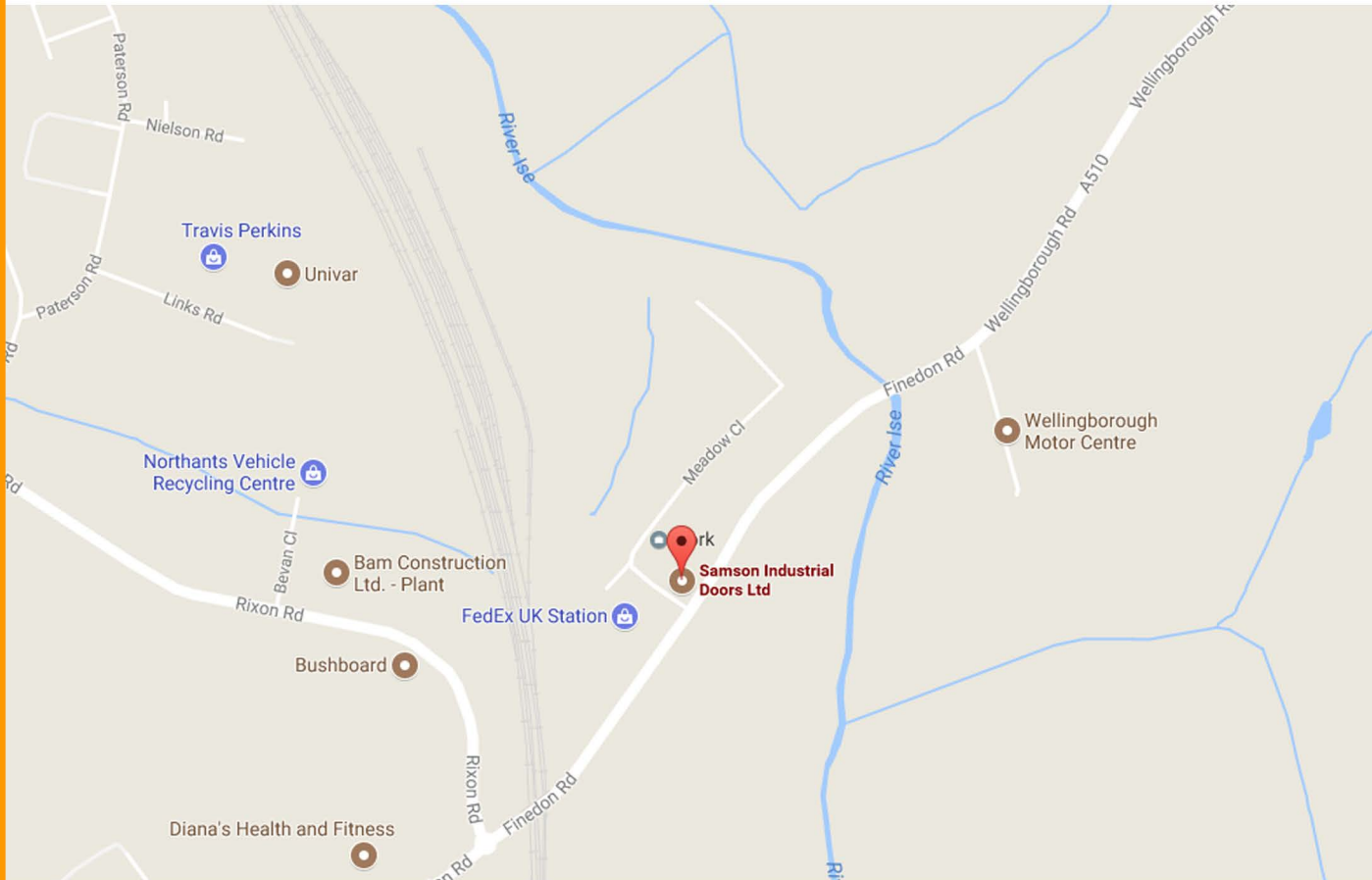
Infill Overview	SPU 67 Thermo	APU 67 Thermo	ALR 67 Thermo	ALR 67 Thermo Glazing
Infill type	Abbreviation			
PU infill, 51 mm with Stucco-textured aluminium sheet cover on both sides, $U_g = 0.54 \text{ W/(m}^2\text{K)}$	–	FU	FU	–
PU infill, 51 mm with anodised smooth aluminium sheet cover on both sides, $U_g = 0.54 \text{ W/(m}^2\text{K)}$	–	XU	XU	–
PU infill, 26 mm with anodised smooth aluminium sheet cover on both sides, $U_g = 1.2 \text{ W/(m}^2\text{K)}$	TU	TU	TU	–
Synthetic triple pane, clear, 51 mm, $U_g = 1.8 \text{ W/(m}^2\text{K)}$	S3	S3	S3	–
Synthetic triple pane, crystal structure, 51 mm, $U_g = 1.6 \text{ W/(m}^2\text{K)}$	U3	U3	U3	–
Synthetic triple pane, grey tinted, 51 mm, $U_g = 1.6 \text{ W/(m}^2\text{K)}$	A3	A3	A3	–
Synthetic triple pane, brown tinted, 51 mm, $U_g = 1.6 \text{ W/(m}^2\text{K)}$	B3	B3	B3	–
Synthetic triple pane, white tinted (opal), 51 mm, $U_g = 1.6 \text{ W/(m}^2\text{K)}$	M3	M3	M3	–
Synthetic quadruple pane, clear, 51 mm, $U_g = 1.3 \text{ W/(m}^2\text{K)}$	S4	S4	S4	–
Synthetic quadruple pane, crystal structure, 51 mm, $U_g = 1.3 \text{ W/(m}^2\text{K)}$	U4	U4	U4	–
Synthetic quadruple pane, grey tinted, 51 mm, $U_g = 1.3 \text{ W/(m}^2\text{K)}$	A4	A4	A4	–
Synthetic quadruple pane, brown tinted, 51 mm, $U_g = 1.3 \text{ W/(m}^2\text{K)}$	B4	B4	B4	–
Synthetic quadruple pane, white tinted (opal), 51 mm, $U_g = 1.3 \text{ W/(m}^2\text{K)}$	M4	M4	M4	–
Double pane made of single-pane safety glass, 26 mm, $U_g = 2.6 \text{ W/(m}^2\text{K)}$ [1]	E2	E2	E2	E2
Double pane made of laminated safety glass P4A, 26 mm, $U_g = 1.3 \text{ W/(m}^2\text{K)}$ [3]	W2	W2	W2	–
Climatic double pane made of single-pane safety glass, 26 mm, $U_g = 1.1 \text{ W/(m}^2\text{K)}$ [1]	G2	G2	G2	G2
Prepared for on-site infill [2]	BS	BS	BS	–

[1] Only for door width up to 6000 mm; on request

[2] On request; infill weight and thickness must be specified (anodised glazing bead required)

[3] Only NT80 Thermo with RC 2 version

Determination of the roof slope in degrees (a°)								
								
a°	%	X (mm)	a°	%	X (mm)	a°	%	X (mm)
1	1,75	17,5	16	28,67	286,7	31	60,09	600,9
2	3,49	34,9	17	30,57	305,7	32	62,49	624,9
3	5,24	52,4	18	32,49	324,9	33	64,95	649,5
4	6,99	69,9	19	34,43	344,3	34	67,46	674,6
5	8,75	87,5	20	36,40	364,0	35	70,03	700,3
6	10,51	105,1	21	38,39	383,9	36	72,66	726,6
7	12,28	122,8	22	40,40	404,0	37	75,36	753,6
8	14,05	140,5	23	42,45	424,5	38	78,13	781,3
9	15,84	158,4	24	44,52	445,2	39	80,98	809,8
10	17,63	176,3	25	46,63	466,3	40	83,91	839,1
11	19,44	194,4	26	48,77	487,7	41	86,93	869,3
12	21,26	212,6	27	50,95	509,5	42	90,05	900,5
13	23,09	230,9	28	53,17	531,7	43	93,26	932,6
14	24,93	249,3	29	55,43	554,3	44	96,57	965,7
15	26,79	267,9	30	57,74	577,4	45	100	1000



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