



Industrial Sectional Doors Depth 67 mm

Technical Manual: Issue 01.04.2016



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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. No part may be reproduced without our prior permission. All rights reserved.

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 installed in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket doors with trip-free thresholds, 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 installed in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket doors with trip-free thresholds, 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 installed in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket doors with trip-free thresholds, 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 installed in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket doors with trip-free thresholds, 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 (on request for track applications that have low-mounted torsion spring shaft) 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, tubular 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, 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	

The exception are doors with wicket doors with trip-free threshold and leading photocell VL 2, which are not available with the light grille HLG 550.

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 listed colour shades, the sectional doors SPU 67 Thermo, APU 67 Thermo and ALR 67 Thermo with door width 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 fitted with door leaf reinforcement to reduce any possible 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

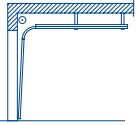
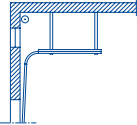
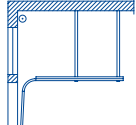
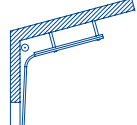
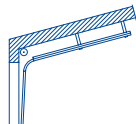
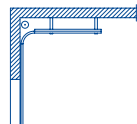
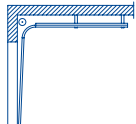
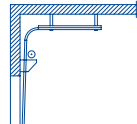
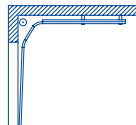
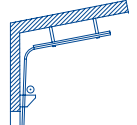
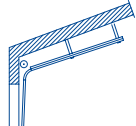
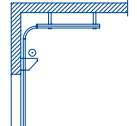
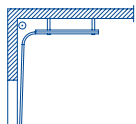
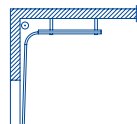
Technical Data Overview

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/(m ² ·K) ²⁾	0.62 (0.51 ³⁾)	2.1 (2.0 ³⁾)	2.2 (2.1 ³⁾)	–
	– Optional quadruple glazing, U = W/(m ² ·K) ²⁾	–	1.8 (1.7 ³⁾)	1.9 (1.8 ³⁾)	–
	– Optional climatic double panes made of single-pane safety glass, U = W/(m ² ·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/(m ² ·K) ²⁾	–	2.6 (2.5 ³⁾)	2.7 (2.6 ³⁾)	3.0 (2.9 ³⁾)
	Door with wicket door, U = W/(m ² ·K) ²⁾	0.82 (0.75 ³⁾)	2.3 (2.2 ³⁾)	2.4 (2.3 ³⁾)	–
	– Optional quadruple glazing, U = W/(m ² ·K) ²⁾	–	2.0 (1.9 ³⁾)	2.1 (2.1 ³⁾)	–
	– Section, U = W/(m ² ·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 35				
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

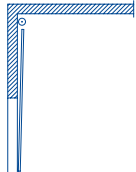
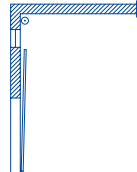
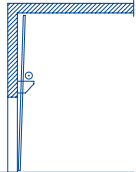
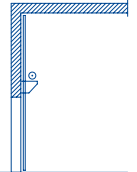
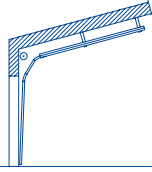
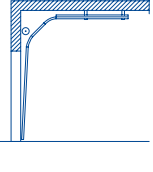
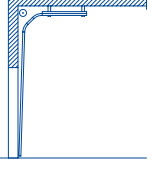
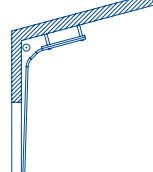
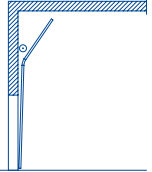
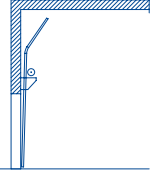
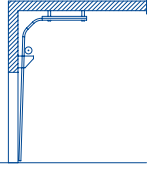
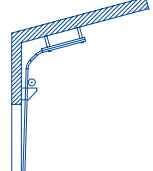
- 1) With optional double pane (single-pane safety glass)
- 2) For a door surface of 5000 × 5000 mm
- 3) Optionally with ThermoFrame
- 4) Door width up to 5500 mm
- 5) Class 3 = 0.7 kN/m² or 120 km/h
- 6) Class 2 = 0.45 kN/m² or 96 km/h
- 7) Class 2 = 12 m³/m²h
- 8) Class 1 = 24 m³/m²h

Overview of Track Applications

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

* For information on trap guard, see page 5

Overview of Track Applications

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

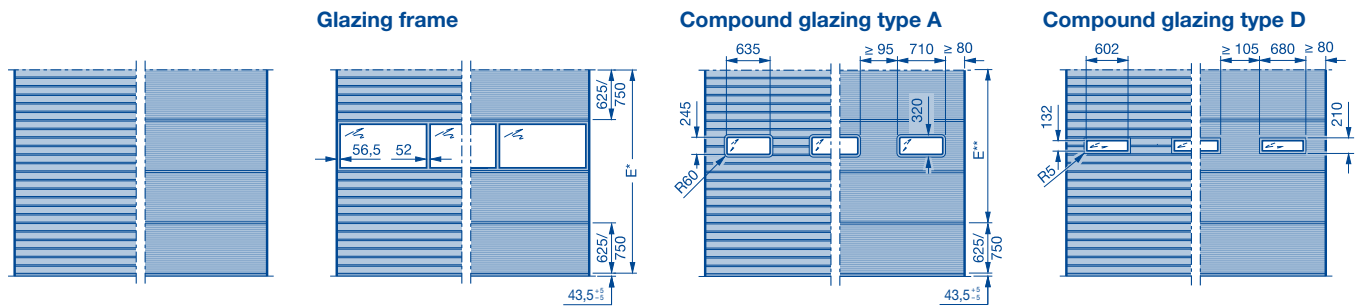
Sectional Door SPU 67 Thermo

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.

RM	TH 625	n ₁		TH 750
		1	2	
7500	-	-	-	10
7375	1	+	-	9
7250	2	+	-	8
7125	3	+	-	7
7000	4	+	-	6
6875	5	+	-	5
6750	-	-	-	9
6625	1	+	-	8
6500	2	+	-	7
6375	3	+	-	6
6250	4	+	-	5
6125	5	+	-	4
6000	-	-	-	8
5875	1	+	-	7
5750	2	+	-	6
5625	3	+	-	5
5500	4	+	-	4
5375	5	+	-	3
5250	-	-	-	7
5125	1	+	-	6
5000	2	+	-	5
4875	3	+	-	4
4750	4	+	-	3
4625	5	+	-	2
4500	-	-	-	6
4375	1	+	-	5
4250	2	+	-	4
4125	3	+	-	3
4000	4	+	-	2
3875	5	+	-	1
3750	-	-	-	5
3625	1	+	-	4
3500	2	+	-	3
3375	3	+	-	2
3250	4	+	-	1
3125	5	+	-	-
3000	-	-	-	4
2875	1	+	-	3
2750	2	+	-	2
2625	3	+	-	1
2500	4	+	-	-
2375	4****	-	-	-
2250	-	-	-	3
2125	1	+	-	2
2000	2	+	-	1
1875	3	+	-	-

RM	1	2	3	4	5	Number of infills / fields per aluminium frame
[1]	2	3	4	5	5	Number of compound glazings per door section

SPB 52	LZ
1500	1500
2000	2000
2250	2250
2500	2500
2750	2750
3000	3000
3250	3250
3500	3500
3750	3750
4000	4000
4250	4250
4500	4500
4750	4750
5000	5000
5250	5250
5500	5500
5750	5750
6000	6000

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 with 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

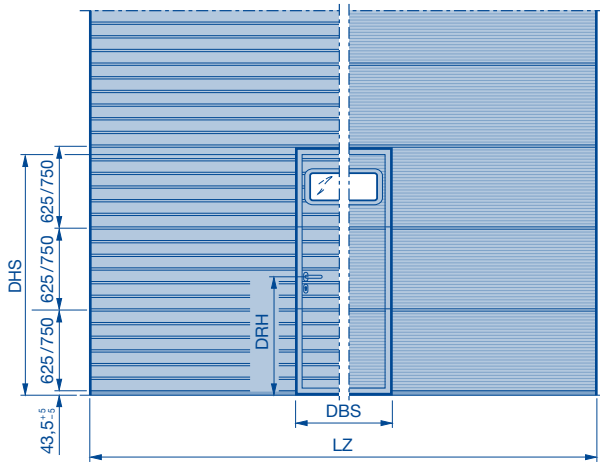
- [1] Type A → 1670, Type D → 1630
n₁ No. of door sections
RM Grid height
LZ Clear frame dimensions (from 1200) up to LZ
→ Rail width
SPB Door section height
TH Top door section 500 mm

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.

RM	SH	n ₁		DHS															
		TH 625	TH 750																
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															
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															
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															
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															
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**														
	2	3	4	5															
	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 frames

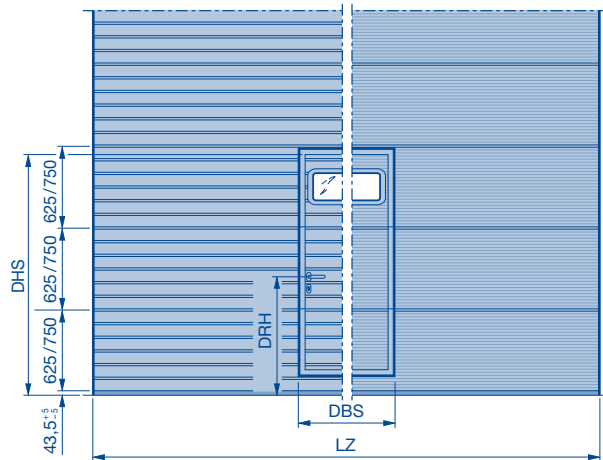
- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- SH Threshold height (rising from 5 to 10)
- SPB Rail width
- TH Door section height
- RM Grid height
- DBS Wicket door clear passage width
- DRH Lever height
- LZ Clear frame dimensions (from 1750)
- *** Top door section 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 (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. Every door width in 10 mm increments is possible. Intermediate heights using aluminium glazing frames or shortened door section above wicket door are possible.

RM	SH				n ₁		DHS	
	TH 625	TH 750	TH 625	TH 750	TH 625	TH 750	DHS	
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	—	—	—	
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	—	—	—	
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	—	—	—	
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	—	—	—	
2500	4	+	—	1820	—	—	—	
2375	4***	+	—	1820	—	—	—	
2250	—	—	3	2195	—	—	—	
2125	1	+	2	2070	—	—	—	
2000	2	+	1	1945	—	—	—	
	Number of infills/ fields per aluminium frame							
	2	3	3	4				
	Number of compound glazings per door section**							
	2	3	3	4				

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

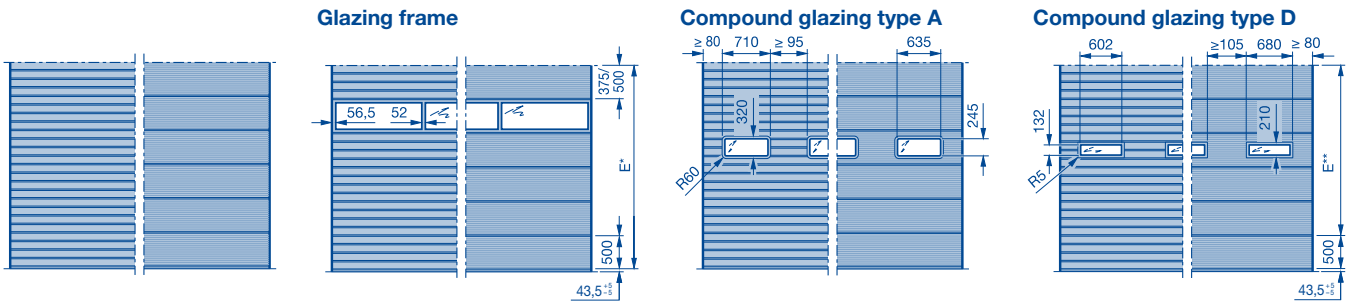
Sectional Door SPU 67 Thermo

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

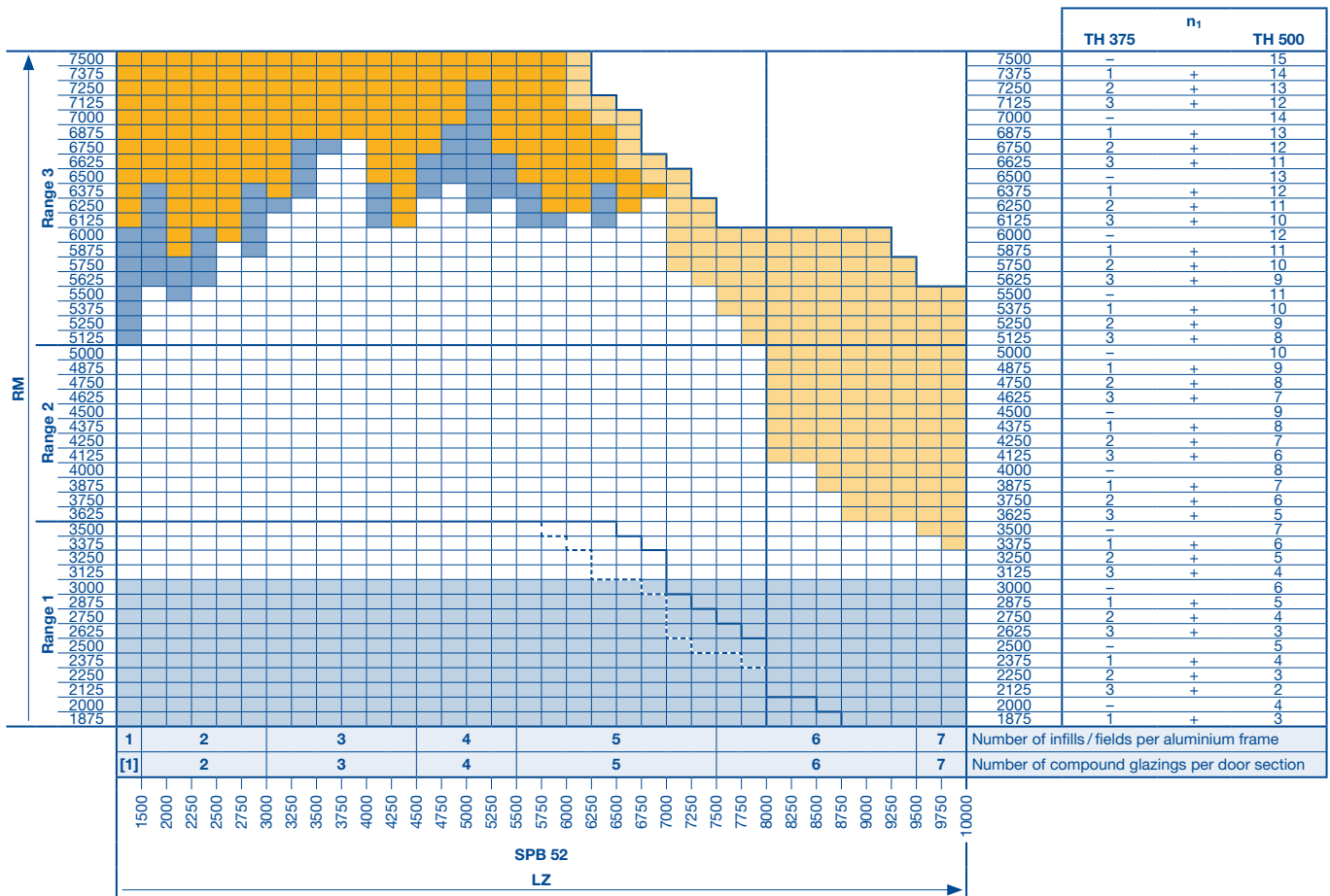
The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using aluminium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

Notes:

- For a view of the matching appearance with doors with wicket 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
- 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** Rail width
- TH** Door section height

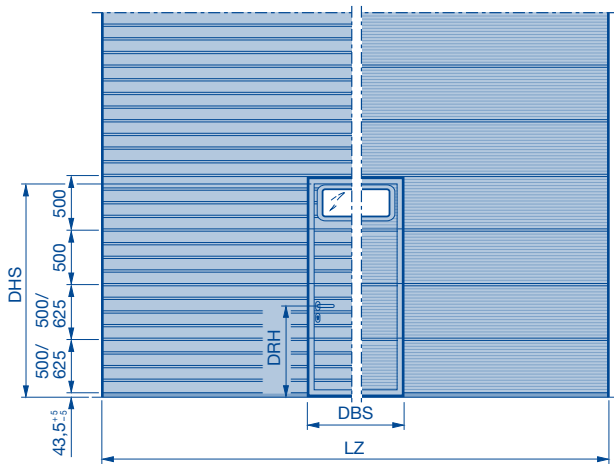


Sectional Door SPU 67 Thermo with Wicket Door with Trip-Free Threshold

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 (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.

RM	SH ₁		SH ₂		n ₁		DHS
	TH 375	TH 500	TH 375	TH 500	TH 375	TH 500	
7500					-	15	1945
7375					1	14	1945
7250					2	13	1945
7125					3	12	1945
7000					-	14	1945
6875					1	13	1945
6750					2	12	1945
6625					3	11	1945
6500					-	13	1945
6375					1	12	1945
6250					2	11	1945
6125					3	10	1945
6000					-	12	1945
5875					1	11	1945
5750					2	10	1945
5625					3	9	1945
5500					-	11	1945
5375					1	10	1945
5250					2	9	1945
5125					3	8	1945
5000					-	10	1945
4875					1	9	1945
4750					2	8	1945
4625					3	7	1945
4500					-	9	1945
4375					1	8	1945
4250					2	7	1945
4125					3	6	1945
4000					-	8	1945
3875					1	7	1945
3750					2	6	1945
3625					3	5	1945
3500					-	7	1945
3375					1	6	1945
3250					2	5	1945
3125					3	4	1945
3000					-	6	1945
2875					1	5	1945
2750					2	4	1945
2625					1***	4	2070
2500					-	5	1945
2375					1	4	1945
2250					2***	2	2115
2125					1***	3	1990
2000					-	4	1865

3		4		5		Number of infills / fields per aluminium frame	
2		3		4		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							

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.
- 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
- Glazings on request
- Range change
- Range change with glazing frame

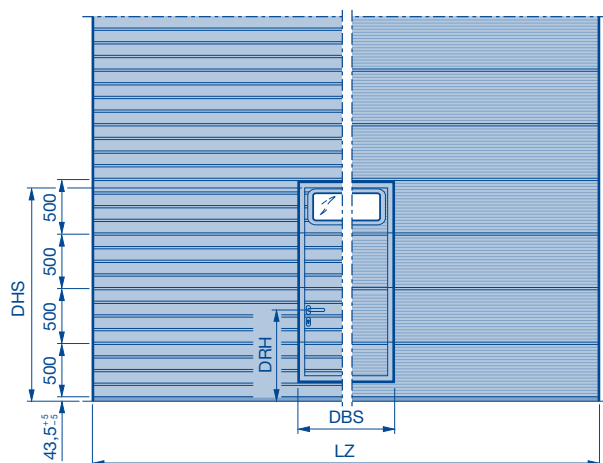
- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- RM Grid height
- LZ Clear frame dimensions (from 1750)
- SH₁ Threshold height (rising from 5 to 10)
- SH₂ Threshold height (approx. 13)
- SPB Rail width
- TH Door section height
- DBS Wicket door clear passage width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

RM	SH ₁				SH ₂				n ₁		DHS		
	TH 375	TH 500			TH 375	TH 500			TH 375	TH 500	DHS		
7500									-	15	1945		
7375									1	+	14	1945	
7250									2	+	13	1945	
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
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
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
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	
2375									2375	1	+	4	1945
2250									2250	2	+	3	1820
2125									2125	-	4***	2070	
2000									2000	-	4	1945	

3				4				5												
2				3				5												
Number of infills / fields per aluminium frame																				
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

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 x 125 mm aluminium bottom profile).
- For a view of the matching appearance with doors without wicket doors see page 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
 - 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

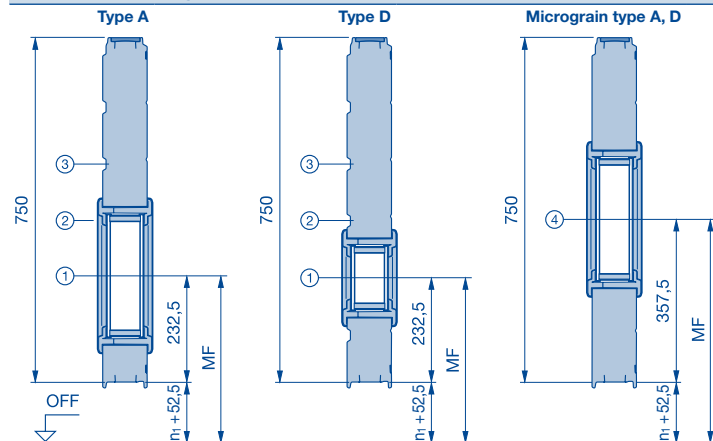
Calculating the Glazing Heights for SPU 67 Thermo

(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.

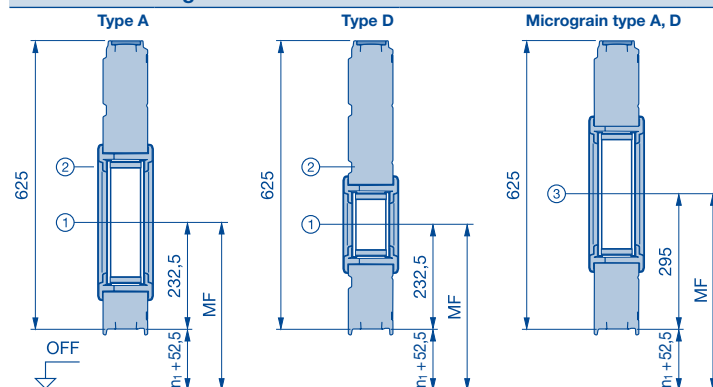
Door section height 750 mm



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 = $n_1 + 52.5 + 357.5$

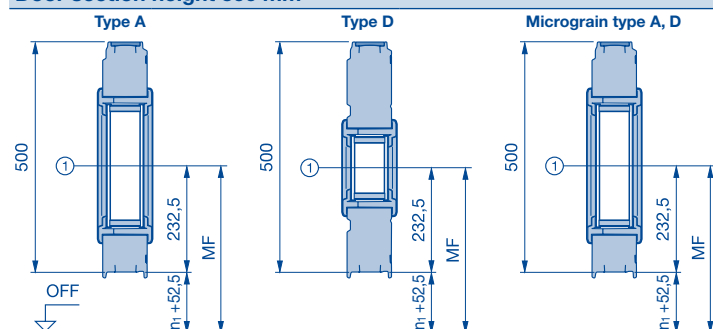
Door section height 625 mm



Glazing height type A and D

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

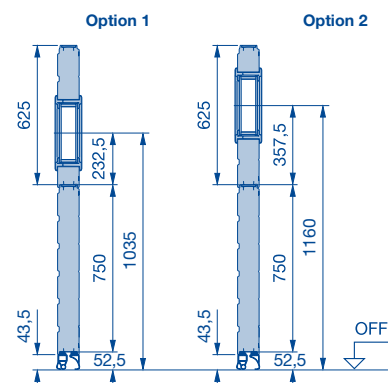
Door section height 500 mm



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

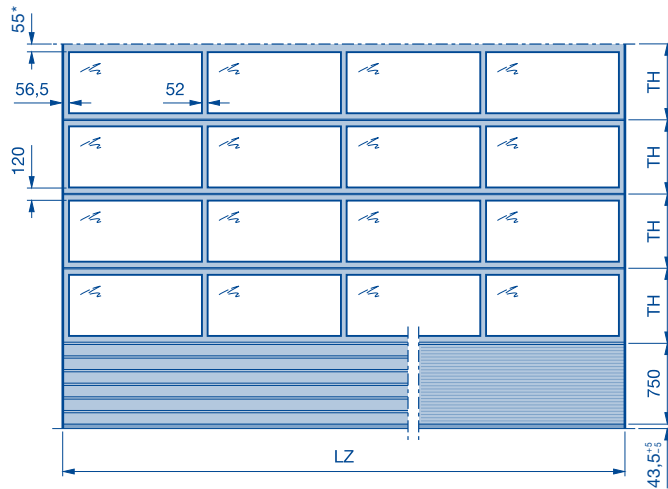
n₁ No. of door sections

Sectional Door APU 67 Thermo

Aluminium extrusions with thermal break

Double-skinned bottom section

External view



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

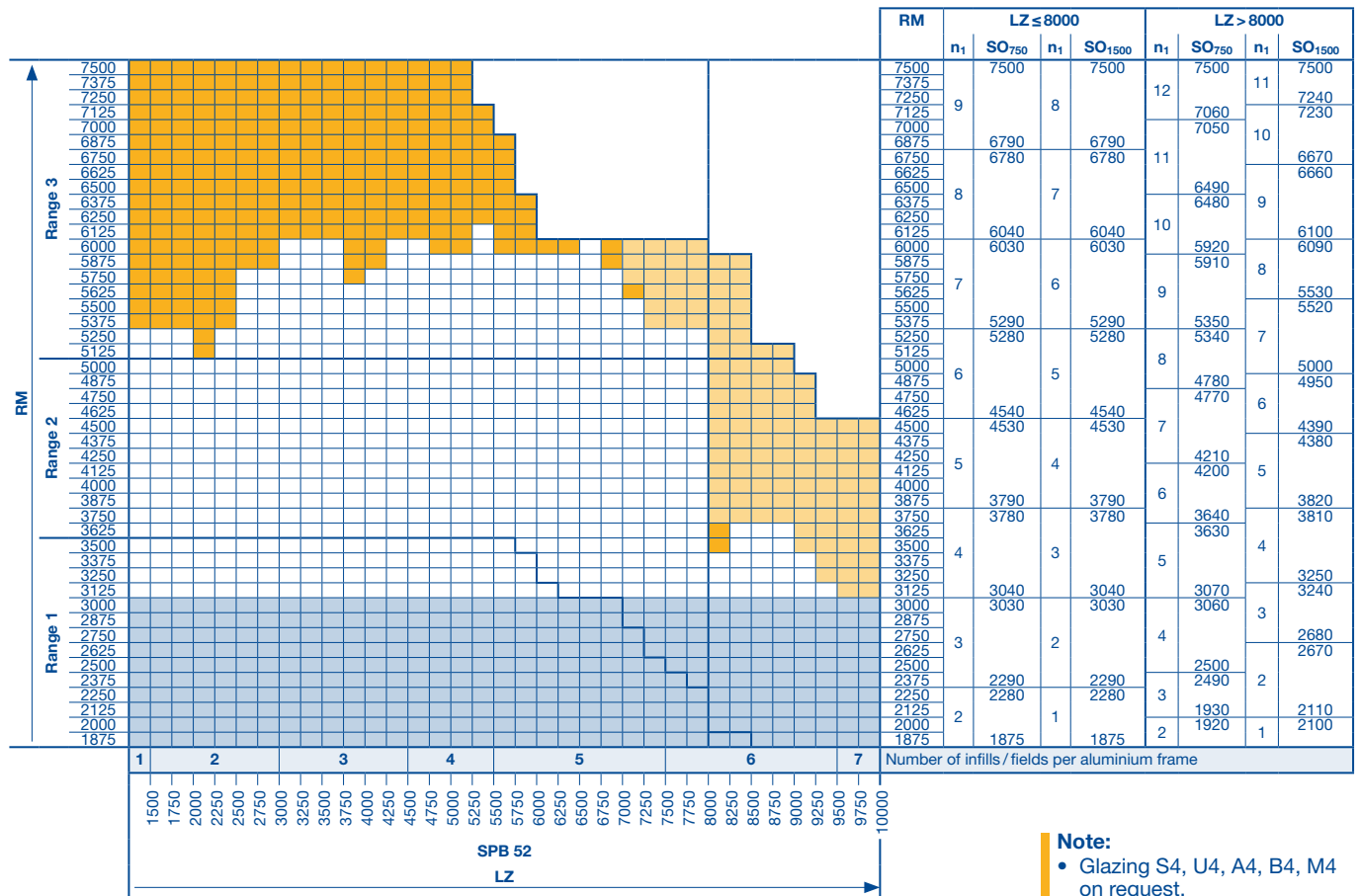
* On request 115 mm, so as to match the appearance of a sectional door with wicket door with trip-free threshold with the same door height.

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 doors see page 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 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

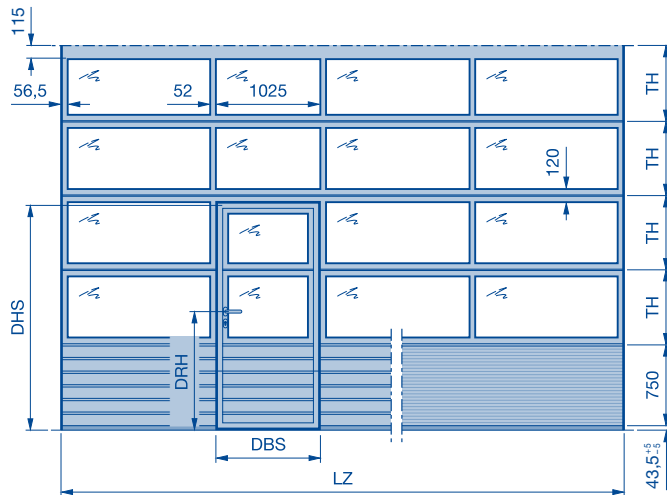
- Number of door section frames:**
- SO₇₅₀ Bottom section height 750 mm (standard)
 - SO₁₅₀₀ Bottom section height 1500 mm
 - n₁ Number of aluminium frames
 - RM Grid height
 - LZ Clear frame dimensions (from 1200)
 - SPB Rail width
 - TH Door section height

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)
= $S_{n1} \times TH + (\text{bottom section height} - 55^*)$

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 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 page 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.

RM	SH ₁										SH ₂										n ₁	Height	RM	DHS	Sn ₁	Height																		
	2000	2125	2250	2375	2500	2625	2750	2875	3000	3125	3250	3375	3500	3625	3750	3875	4000	4125	4250	4375							4500	4625	4750	4875	5000	5125	5250	5375	5500	5625	5750	5875	6000	6125	6250	6375	6500	6625
Range 3	[Valid]										[Valid]										9	7500	7500	2187	2																			
Range 2	[Valid]										[Valid]										8	6790	6780	2048	2																			
	[Valid]										[Valid]											6040	6030	2030																				
Range 1	[Valid]										[Valid]										7	5290	5280	2006	2																			
	[Valid]										[Valid]											4540	4530	1975																				
Range 1	[Valid]										[Valid]										6	3790	3780	1931	2																			
	[Valid]										[Valid]											3040	3030	1865																				
Range 1	[Valid]										[Valid]										5	2290	2280	1838	2	2430																		
	[Valid]										[Valid]											2125	2115	1815		2	2420																	
Range 1	[Valid]										[Valid]										4	2000	2000	1865	2	2000																		
	[Valid]										[Valid]											2290	2280	1838		3	2430																	
[Valid]										[Valid]										2	2000	2000	1865	2	2000																			

Number of infills / fields per aluminium frame

SPB 52
LZ

Note:

- 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
- For information on trap guard, see page 5
- Range change
- DHS** Wicket door clear passage height
- DBS** Wicket door clear passage width

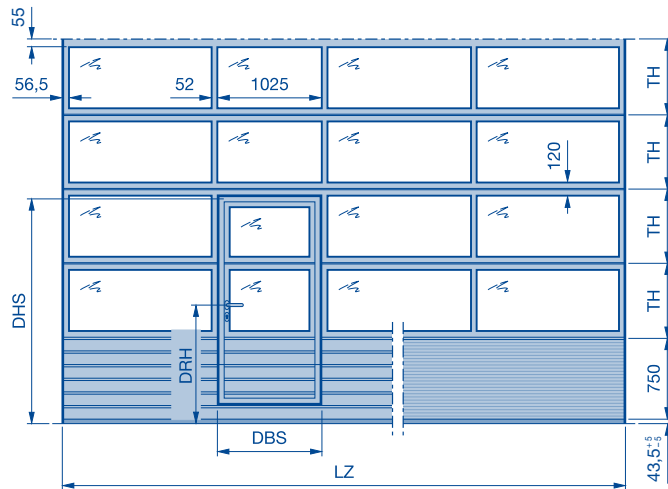
- DRH** Lever height
- LZ** Clear frame dimensions (from 1750)
- RM** Grid height
- SPB** Rail width
- SH₁** Threshold height (rising from 5 to 10)
- SH₂** Threshold height (approx. 13)
- n₁** Number of aluminium frames
- Sn₁** Number of aluminium frames in the wicket door
- TH** Door section height

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

n_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 page 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.

RM	SH ₁				SH ₂				n ₁	Height	RM	DHS	Sn ₁	Height
	3	4	5	6	3	4	5	6						
7500									9	7500	7500	2187		
7375										7375	2159			
7250										7250	2132		2	
7125										7125	2104			
7000										7000	2076			
6875										6875	2048			
6750										6750	2186			
6625										6625	2158			
6500										6500	2124		2	
6375										6375	2093			
6250										6250	2061			
6125										6040	6125	2030		
6000										6030	6000	2185		
5875											5875	2149		
5750											5750	2114		
5625											5625	2078		2
5500											5500	2042		
5375										5290	5375	2006		
5250										5280	5250	2183		
5125											5125	2142		
5000											5000	2100		2
4875											4875	2058		
4750											4750	2017		
4625										4540	4625	1975		
4500										4530	4500	2181		
4375											4375	2131		
4250											4250	2081		2
4125											4125	2031		
4000											4000	1981		
3875										3790	3875	1931		
3750										3780	3750	2178		
3625											3625	2115		
3500											3500	2053		2
3375											3375	1990		
3250											3250	1928		
3125										3040	3125	1865		
3000										3030	3000	2172		
2875											2875	2088		2
2750											2750	2005		
2625											2625	1922		
2500											2500	1839		
2375										2290	2375	2285		3
2250										2280	2250	2160		2430
2125											2125	2035		2420
2000										2000	2000	1910		2000

Note:

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

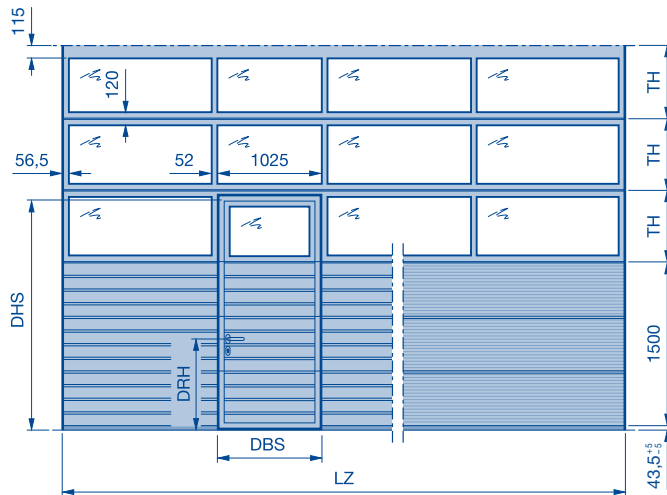
	On request: torsion spring shaft or direct drive operator	DRH	Lever height
	On request and only direct drive operator S140 with high-lift track application	LZ	Clear frame dimensions (from 1750)
	For information on trap guard, see page 5	RM	Grid height
	Range change	SPB	Rail width
DHS	Wicket door clear passage height	SH₁	Threshold height (215)
DBS	Wicket door clear passage width	SH₂	Threshold height (312)
		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 with Trip-Free Threshold

Aluminium extrusions with thermal break

Bottom section height 1500

External view



Lever height (DRH):

LZ ≤ 6000 = 1080.5

LZ > 6000 = 830.5

Wicket door clear passage (DBS) = 905 mm*

Clear passage height of wicket door (DHS)

= Sn₁ × TH + (bottom section height - 55*)

Sn₁ 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 page 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.

RM	SH ₁					SH ₂					n ₁	Height	RM	DHS	Sn ₁	Height	
	3	4	5	6	7	8	9	10	11	12							13
7500												8	7500	7500	2191		
7375												7375	7375	2175			
7250												7250	7250	2159	1		
7125												7125	7125	2144			
7000												7000	7000	2128			
6875												6875	6875	2113			
6750												6750	6750	2190			
6625												6625	6625	2172			
6500												6500	6500	2154	1		
6375												6375	6375	2136			
6250												6250	6250	2119			
6125												6125	6125	2101			
6000												6000	6000	2189			
5875												5875	5875	2168			
5750												5750	5750	2148	1		
5625												5625	5625	2127			
5500												5500	5500	2106			
5375												5375	5375	2085			
5250												5250	5250	2188			
5125												5125	5125	2163			
5000												5000	5000	2138	1		
4875												4875	4875	2113			
4750												4750	4750	2088			
4625												4625	4625	2063			
4500												4500	4500	2186			
4375												4375	4375	2155			
4250												4250	4250	2124	1		
4125												4125	4125	2093			
4000												4000	4000	2061			
3875												3875	3875	2030			
3750												3750	3750	2183			
3625												3625	3625	2142			
3500												3500	3500	2100	1		
3375												3375	3375	2058			
3250												3250	3250	2017			
3125												3125	3125	1975			
3000												3000	3000	2178			
2875												2875	2875	2115	1		
2750												2750	2750	2053			
2625												2625	2625	1990			
2500												2500	2500	1928			
2375												2375	2375	1865			
2250												2250	2250	2115			
2125												2125	2125	1990			
2000												2000	2000	1865			

Number of infills / fields per aluminium frame

SPB 52 LZ

Note:

- 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
- For information on trap guard, see page 5

Range change

DHS Wicket door clear passage height
DBS Wicket door clear passage width

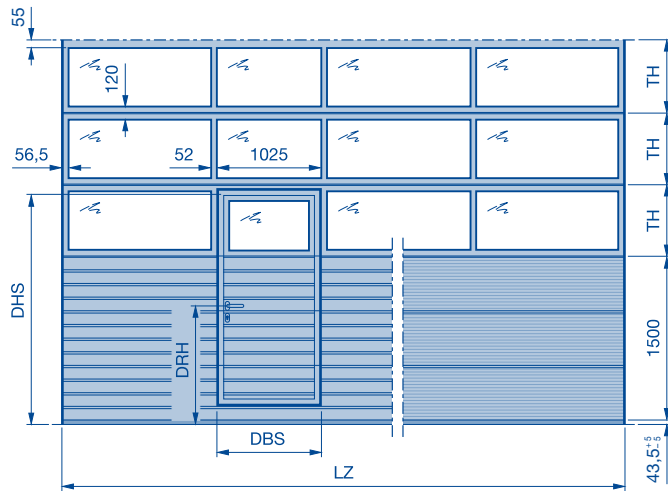
DRH Lever height
LZ Clear frame dimensions (from 1750)
RM Grid height
SPB Rail width
SH₁ Threshold height (rising from 5 to 10)
SH₂ Threshold height (approx. 13)
n₁ Number of aluminium frames
Sn₁ Number of aluminium frames in the wicket door
TH Door section height

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 width (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 page 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.

RM	SH ₁	SH ₂	n ₁	Height	RM	DHS	Sn ₁	Height
Range 3	7500		8	7500	7500	2191	1	
	7375			7375	7375	2175		
	7250			7250	7250	2159		
	7125			7125	7125	2144		
	7000			7000	7000	2128		
	6875			6875	6875	2113		
	6750		7	6780	6750	2190	1	
	6625			6625	6625	2172		
	6500			6500	6500	2154		
	6375			6375	6375	2136		
	6250			6250	6250	2119		
	6125		6040	6125	2101	6	1	
	6000		6030	6000	2189			
	5875		5875	5875	2168			
	5750		5750	5750	2148			
5625			5625	2127	5	1		
5500			5500	2106				
5375			5290	5375			2085	
5250			5280	5250	2188	4	1	
5125			5125	5125	2163			
5000			5000	5000	2138			
4875				4875	2113	3	1	
4750				4750	2088			
4625				4625	2063			
4500			4	4540	4500	2186	1	
4375				4530	4375	2155		
4250				4250	4250	2124		
4125				4125	2093	3	1	
4000				4000	2061			
3875				3790	3875			2030
3750			2	3780	3750	2183	1	
3625					3625	2142		
3500					3500	2100		
3375			1		3375	2058	1	
3250					3250	2017		
3125					3040	3125		1975
3000			1	3030	3000	2178	1	
2875					2875	2115		
2750					2750	2053		
2625					2625	1990	1	
2500					2500	1928		
2375					2375	1865		
2250			1	2290	2250	2115	1	
2125					2280	2125		1990
2000					2000	2000		1865

Note:

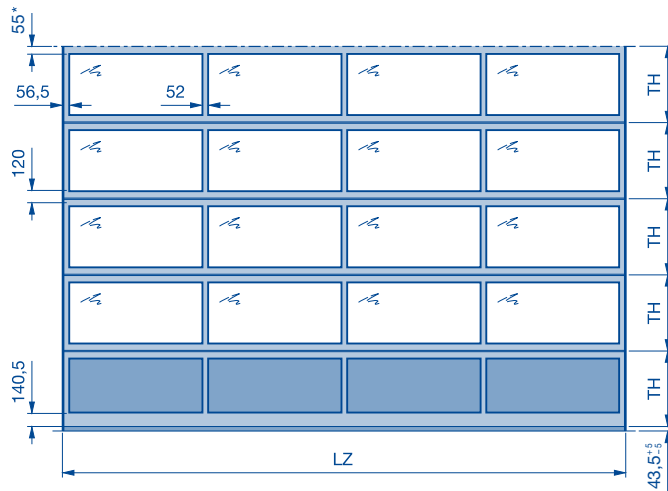
- Glazing S4, U4, A4, B4, M4 on request.

On request: torsion spring shaft or direct drive operator	DBS Wicket door clear passage width	TH Door section height
On request and only direct drive operator S140 with high-lift track application	DRH Lever height	
For information on trap guard, see page 5	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	

Sectional Door ALR 67 Thermo

Door leaf made of aluminium extrusions with thermal break

External view



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

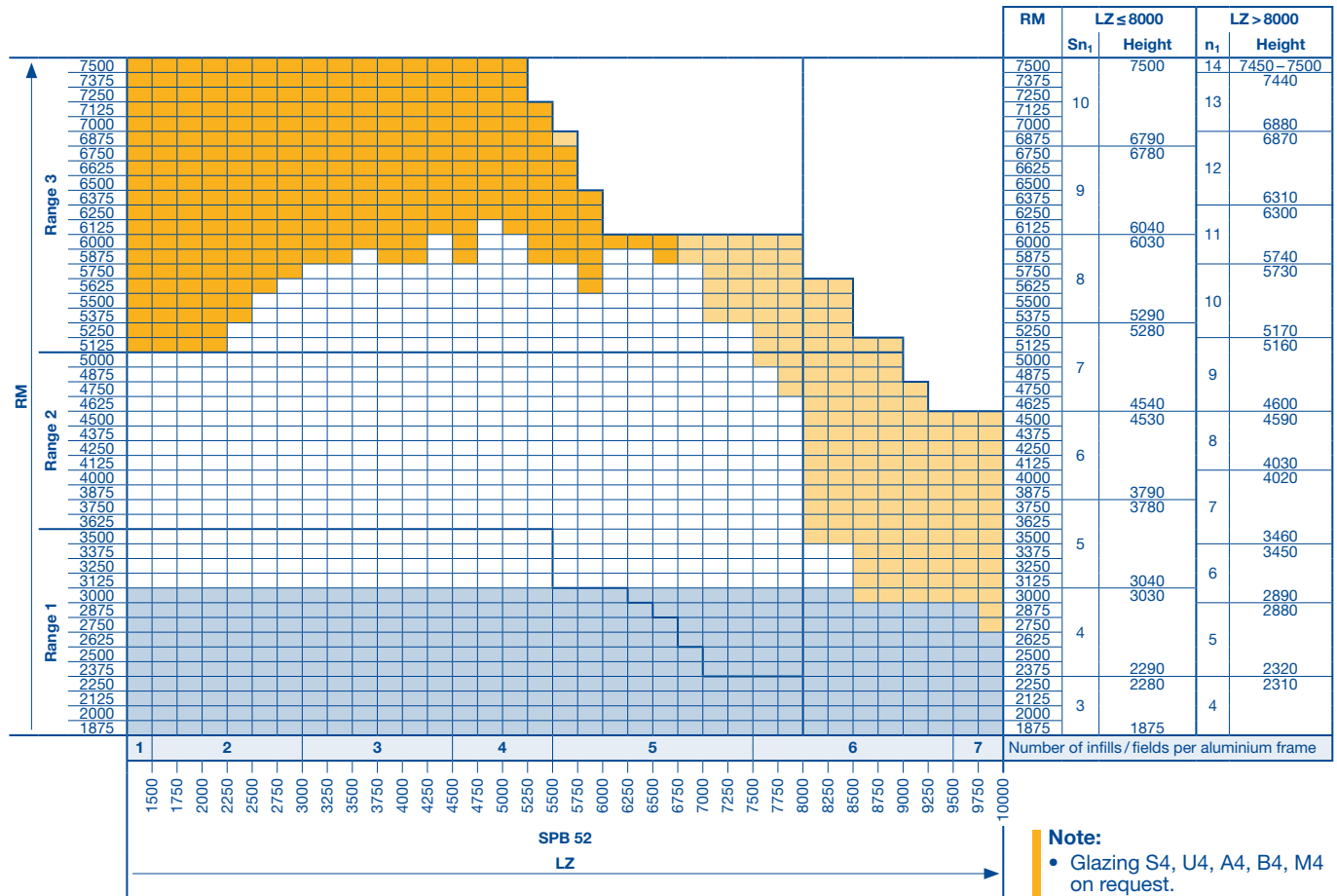
* On request 115 mm, so as to match the appearance of a sectional door with wicket door with trip-free threshold with the same door height.

Note:

- When using a shaft operator (installation example 5), the door lock is always on the side opposite the operator.
- For door widths from 5500 mm, 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 page 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 on request.

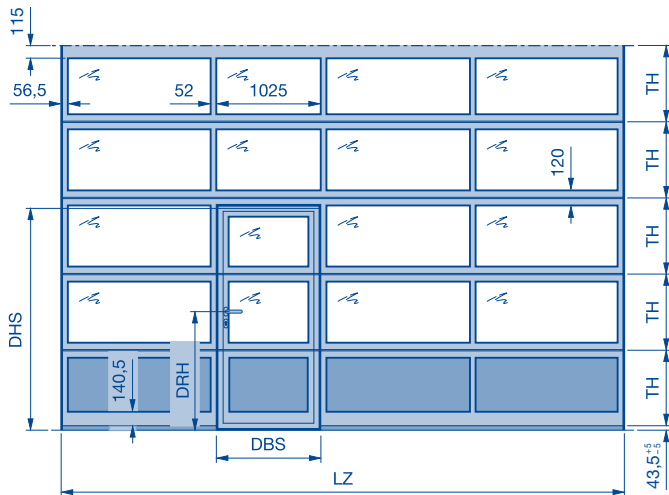
- On request: torsion spring shaft or direct drive operator
- On request and only direct drive operator S140 with high-lift track application
- For information on trap guard, see page 5
- Range change

- n₁ Number of aluminium frames
- 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

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) = $Sn_1 \times TH - 55^*$

Sn₁ 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 5500 mm, diagonal struts are fitted into the bottom door section (not visible with closed inflills).
- For a view of the matching appearance with doors without wicket doors see page 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															
Range 3	7500		10	7500	7500	2185	3																
	7375			7375	2147																		
	7250			7250	2110																		
Range 2	7125		9	7125	2072	3																	
	7000			7000	2035																		
	6875			6875	1997																		
	6750			6750	2183																		
	6625			6625	2142																		
	6500			6500	2100																		
	6375			6375	2058																		
	6250			6250	2017																		
	6125			6125	1975																		
	6000			6000	2182																		
Range 1	5875		8	5875	2135	3																	
	5750			5750	2088																		
	5625			5625	2041																		
	5500			5500	1994																		
	5375			5375	1948																		
	5250			5250	2180																		
	5125			5125	2126																		
	5000			5000	2073																		
Range 2	4875		7	4875	2019	3																	
	4750			4750	1966																		
	4625			4625	1912																		
	4500			4500	2178																		
	4375			4375	2115																		
	4250			4250	2053																		
	4125			4125	1990																		
	4000			4000	1928																		
	3875			3875	1865																		
	3750			3750	2174																		
Range 1	3625		6	3625	2099	3																	
	3500			3500	2024																		
	3375			3375	1949																		
	3250			3250	1874																		
	3125			3125	1799																		
	3000			3000	2169																		
	2875			2875	2075																		
	2750			2750	1981																		
	2625			2625	1888																		
	2500			2500	1794																		
Range 2	2375		5	2375	2285	3																	
	2250			2250	2115																		
	2125			2125	1990																		
	2000			2000	1865																		
Range 1			4			3																	
Range 2			3			3																	
			3	4	5	Number of inflills / fields per aluminium frame																	
			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:

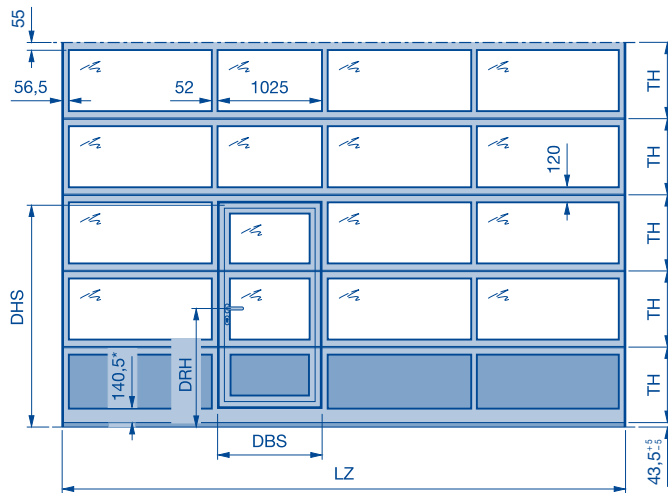
- Glazing S4, U4, A4, B4, M4 on request.

	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
	Range change	SPB	Rail width
DHS	Wicket door clear passage height	SH₁	Threshold height (rising from 5 to 10)
DBS	Wicket door clear passage width	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 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) = $Sn_1 \times TH - 55$

Sn_1 Number of frames in the wicket door

* 265.5 with SH_2

** 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 door widths from 5500 mm, 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 page 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.

RM	SH ₁	SH ₂	n ₁	Height	RM	DHS	Sn ₁	Height
Range 3	7500		10	7500	7500	2185	3	
	7375			7375	7375	2147		
	7250			7250	7250	2110		
	7125			7125	7125	2072		
	7000			7000	7000	2035		
	6875			6875	6875	1997		
	6750			6750	6750	1960		
	6625			6625	6625	1922		
	6500			6500	6500	1885		
	6375			6375	6375	1847		
Range 2	6250		9	6250	6250	2058	3	
	6125			6125	6125	2017		
	6000			6040	6125	1975		
	5875			6030	6000	1932		
	5750			5875	6000	1890		
	5625			5750	5875	1847		
	5500			5625	5750	1805		
	5375			5500	5625	1762		
	5250			5375	5500	1720		
	5125			5250	5375	1677		
Range 1	5000		8	5000	5000	2073	3	
	4875			4875	4875	2031		
	4750			4750	4750	1989		
	4625			4625	4625	1947		
	4500			4540	4500	1905		
	4375			4530	4500	1863		
	4250			4375	4375	1821		
	4125			4250	4250	1779		
	4000			4125	4125	1737		
	3875			4000	4000	1695		
Range 1	3750		7	3750	3750	2099	3	
	3625			3625	3625	2057		
	3500			3500	3500	2015		
	3375			3375	3375	1973		
	3250			3250	3250	1931		
	3125			3125	3125	1889		
	3000			3040	3000	1847		
	2875			3030	3000	1805		
	2750			2875	2875	1763		
	2625			2750	2750	1721		
Range 1	2500		6	2500	2500	2169	3	
	2375			2375	2375	2127		
	2250			2250	2250	2085		
	2125			2125	2125	2043		
	2000			2000	2000	2001		
				2290	2375	2285		
				2280	2250	2160		
				2125	2125	2035		
				2000	2000	1910		
				2000	2000	1910		

Note:

- 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
- For information on trap guard, see page 5
- Range change
- DHS Wicket door clear passage 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 (187)
- 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 Glazing

Door leaf made of aluminium extrusions with thermal break

External view



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

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

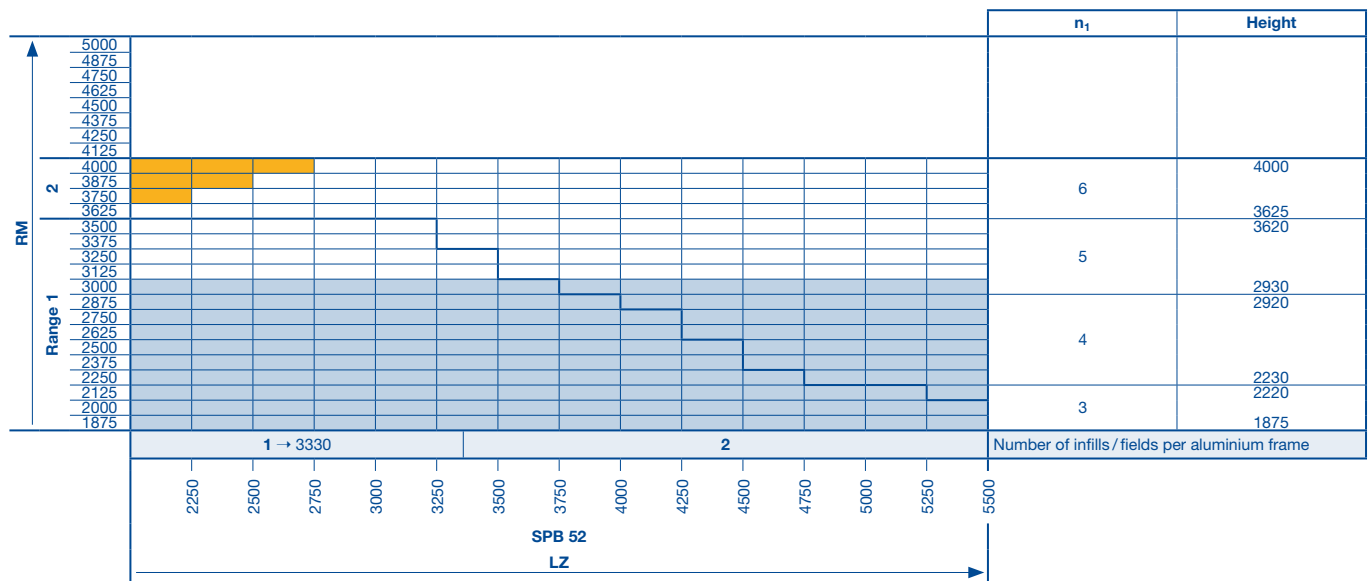
$$OTH = TH \cdot 35$$

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.



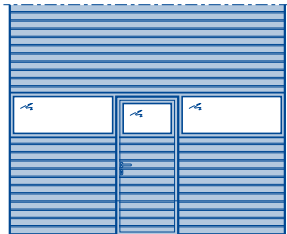
- On request
- For information on trap guard, see page 5
- Range change
- RM** Grid height
- LZ** Clear frame dimensions (from 2000)
- up to LZ
- SPB** Rail width
- n₁** Number of aluminium frames
- UTH** Bottom door section height
- TH** Door section height
- OTH** Upper door section height

Glazing / Wicket Door Arrangements

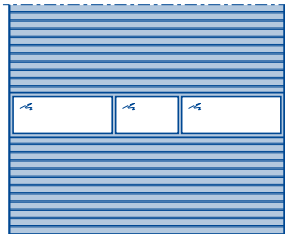
Sectional doors with 3 infills / fields

Glazing arrangements – external view

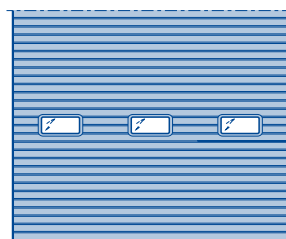
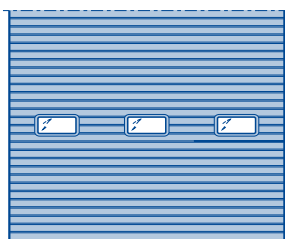
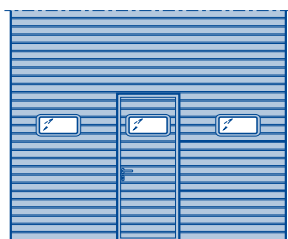
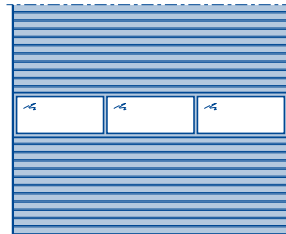
Sectional door SPU 67 Thermo with wicket door with trip-free threshold



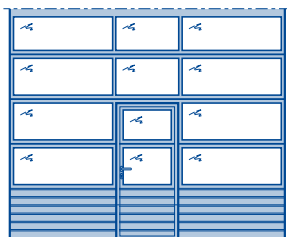
Sectional door SPU 67 Thermo, matching doors with wicket door



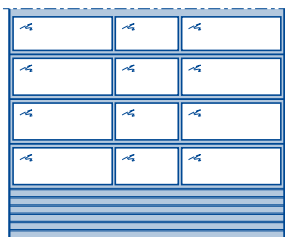
Sectional door SPU 67 Thermo with standard window division



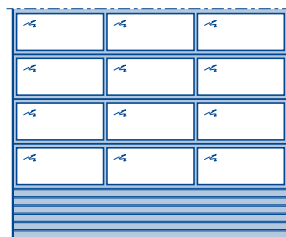
Sectional door APU 67 Thermo with wicket door with trip-free threshold



Sectional door APU 67 Thermo, matching doors with wicket door



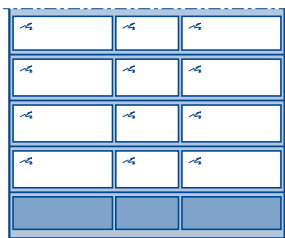
Sectional door APU 67 Thermo with standard window division



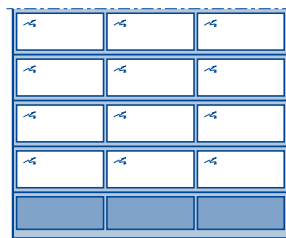
Sectional door ALR 67 Thermo with wicket door with trip-free threshold



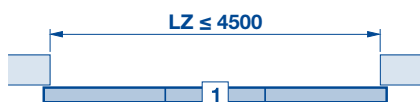
Sectional door ALR 67 Thermo, matching doors with wicket door



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

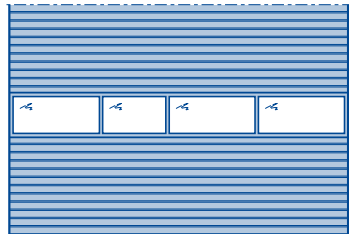
Sectional doors with 4 infills / fields

Glazing arrangements – external view

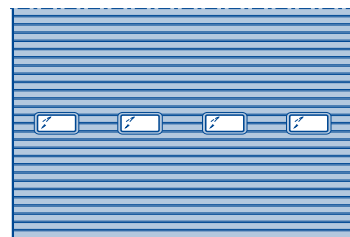
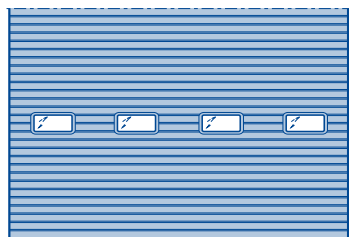
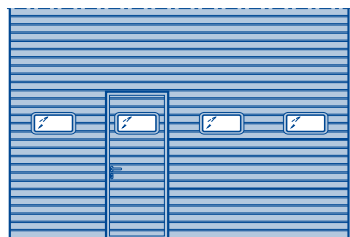
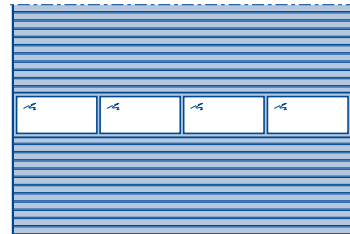
Sectional door SPU 67 Thermo with wicket door with trip-free threshold



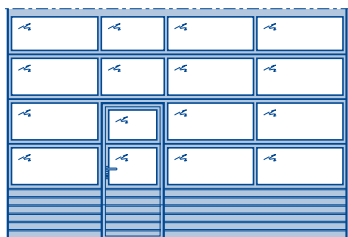
Sectional door SPU 67 Thermo, matching doors with wicket door



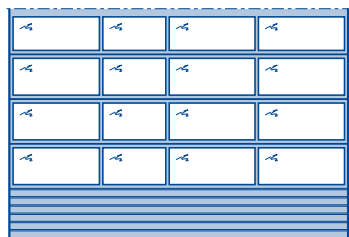
Sectional door SPU 67 Thermo with standard window division



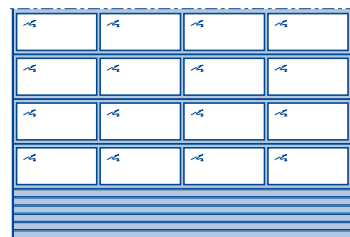
Sectional door APU 67 Thermo with wicket door with trip-free threshold



Sectional door APU 67 Thermo, matching doors with wicket door



Sectional door APU 67 Thermo with standard window division



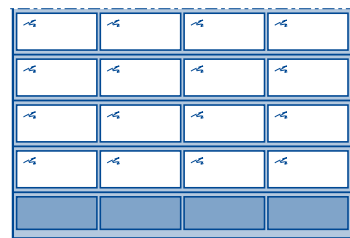
Sectional door ALR 67 Thermo with wicket door with trip-free threshold



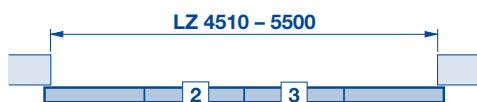
Sectional door ALR 67 Thermo, matching doors with wicket door



Sectional door ALR 67 Thermo with standard window division



Arrangement of the wicket door



Notes:

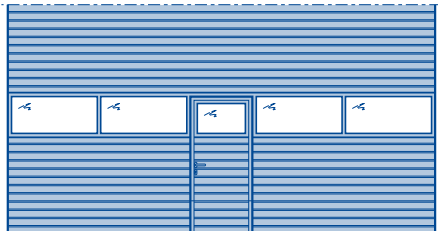
- Wicket door clear passage (DBS) = 905 mm.
- Wicket door only opening outwards.

Glazing / Wicket Door Arrangements

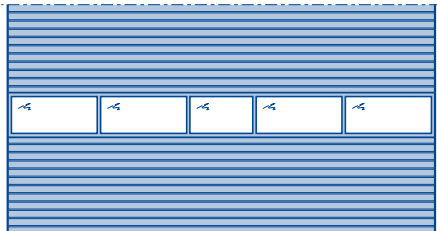
Sectional doors with 5 infills / fields

Glazing arrangements – external view

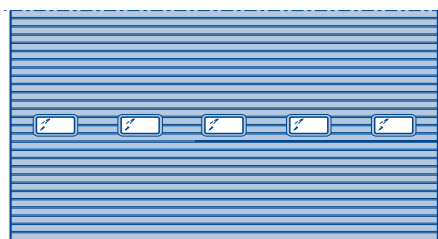
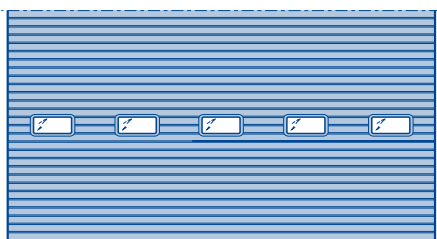
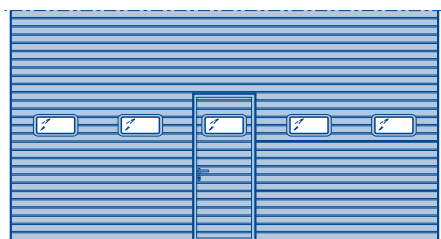
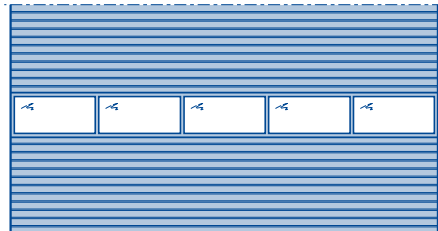
Sectional door SPU 67 Thermo with wicket door with trip-free threshold



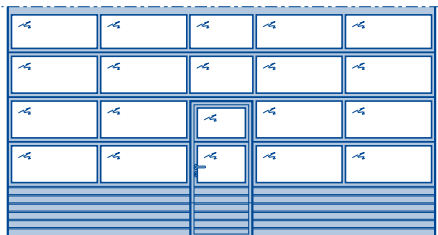
Sectional door SPU 67 Thermo, matching doors with wicket door



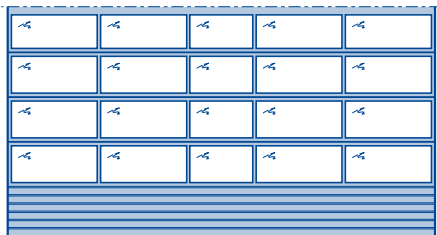
Sectional door SPU 67 Thermo with standard window division



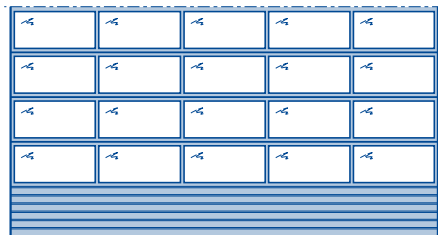
Sectional door APU 67 Thermo with wicket door with trip-free threshold



Sectional door APU 67 Thermo, matching doors with wicket door



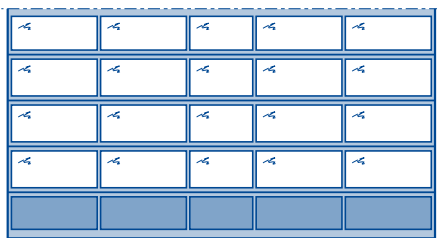
Sectional door APU 67 Thermo with standard window division



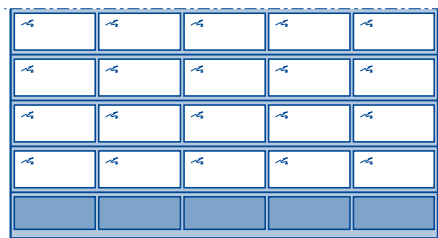
Sectional door ALR 67 Thermo with wicket door with trip-free threshold



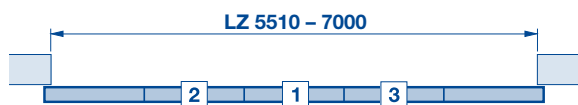
Sectional door ALR 67 Thermo, matching doors with wicket door



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

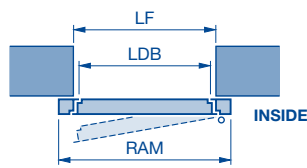


Fitting in the opening, opening inwards or outwards, RH or LH hinged



Fitting behind the opening

Only opening inwards, RH or LH 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 3-point locking: RAM ≥ 1940 mm

Clear passage dimensions:

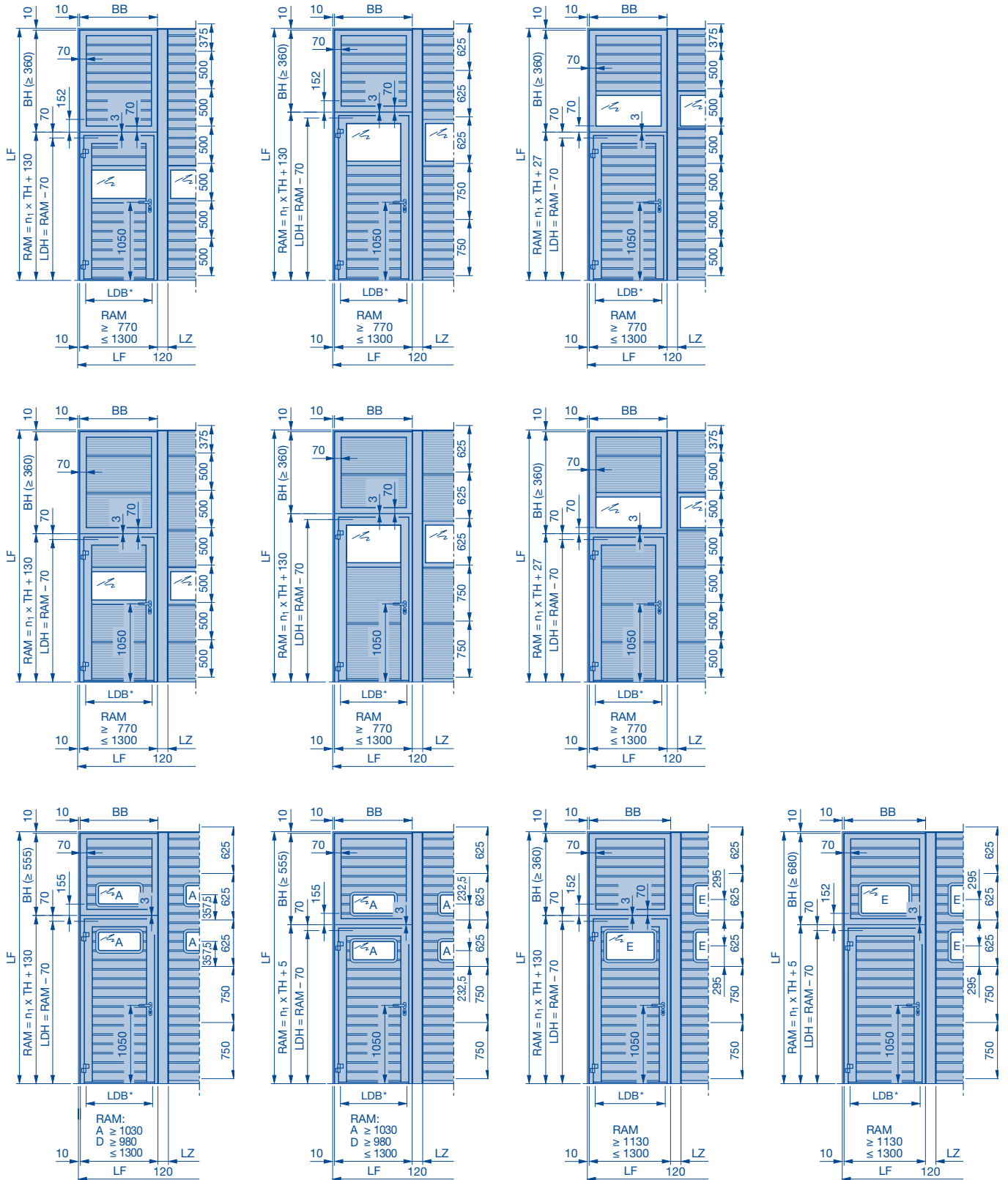
Opening angle	Width	Height
136°	RAM - 164	RAM - 70
90°	RAM - 215	

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

LZ Clear frame dimension

Side Door NT 80 Thermo

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



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

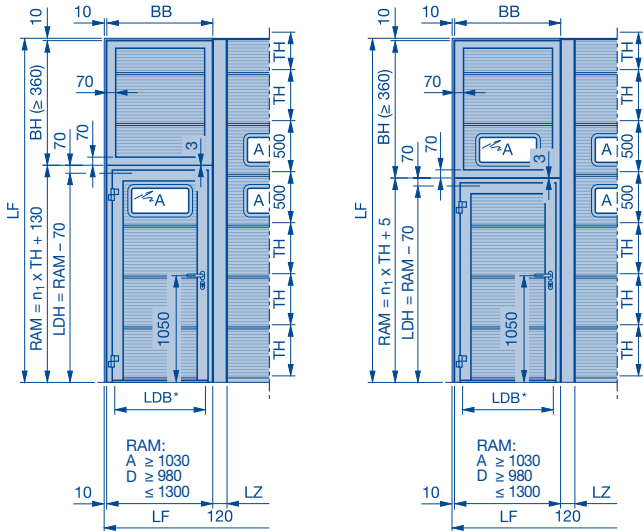
BB Panel width
LDB Clear passage width
LDH Clear passage height
TH Door section height

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

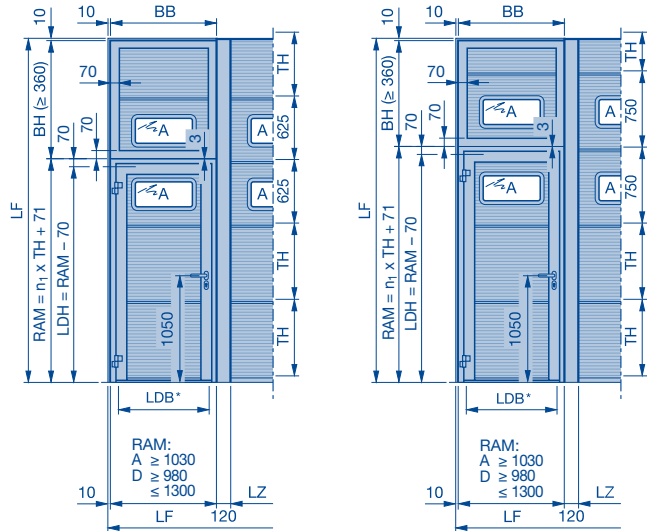
Side Door NT 80 Thermo

With L-ribbed Micrograin infills

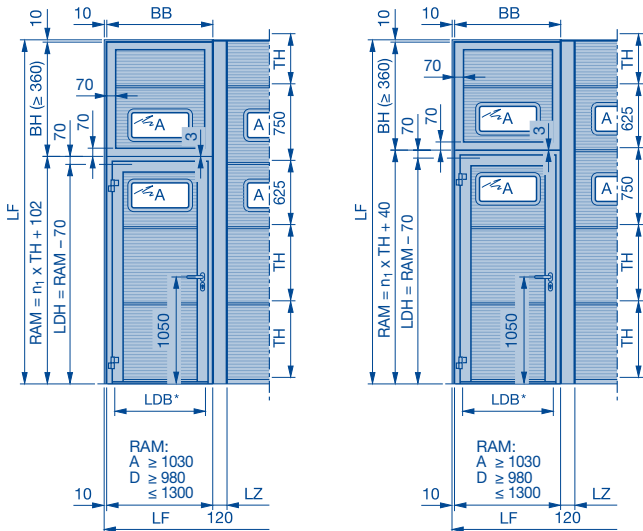
Compound glazing type A TH = 500



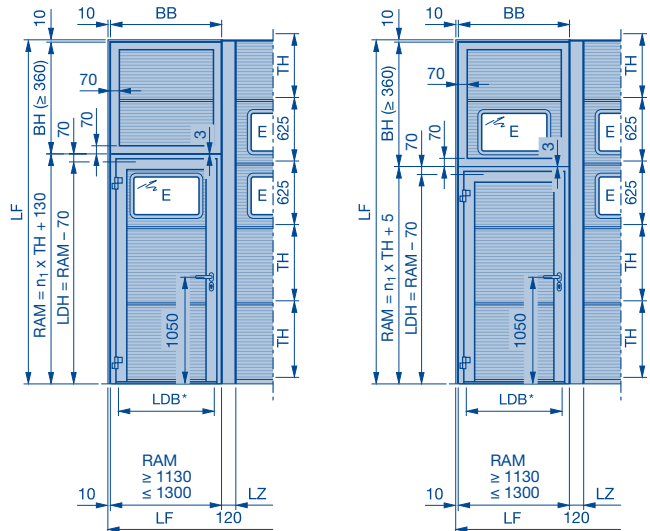
Compound glazing type A TH = 625 and 750



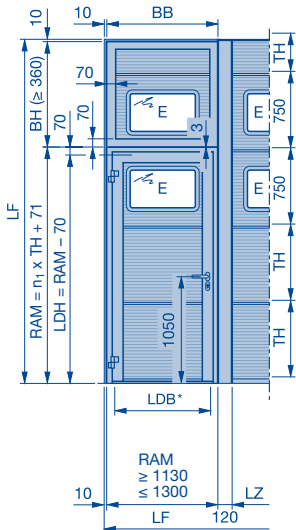
Compound glazing type A TH = 625 / 750 and 750 / 625



Compound glazing type E TH = 625



Compound glazing type E TH = 750

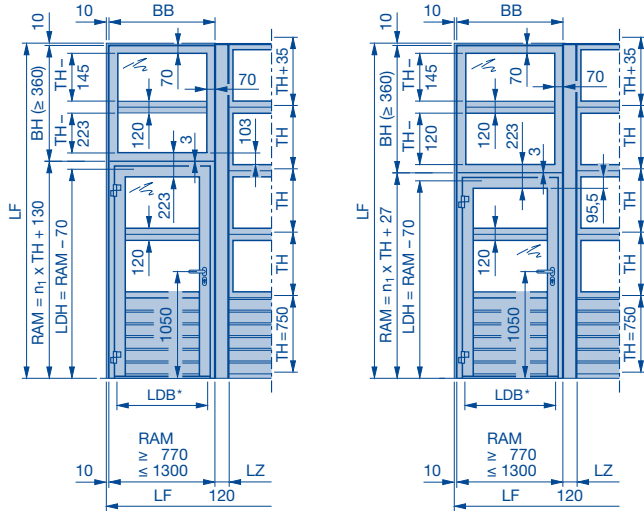


(Legend see page 30)

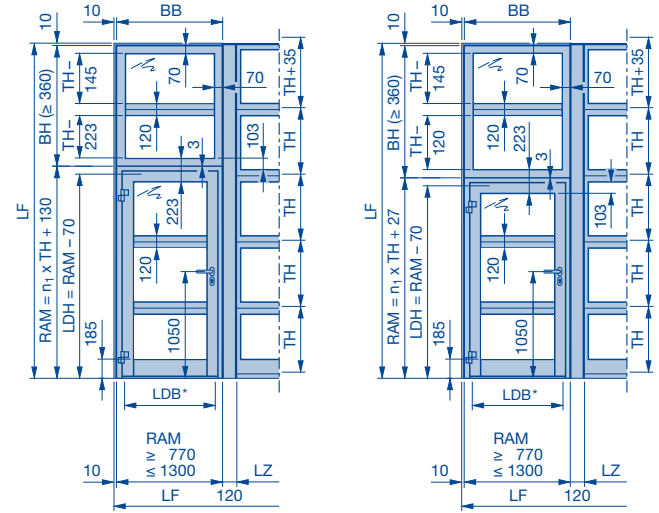
Side Door NT 80 Thermo

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

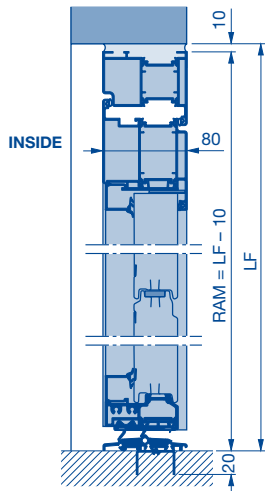
SO Bottom section height
LZ Clear frame dimension
n₁ Number of door sections / aluminium frames

Side Door NT 80 Thermo

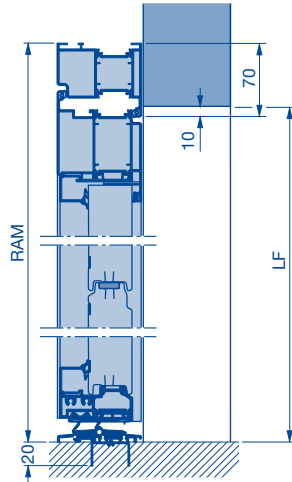
Possible fitting options

Possible fitting options

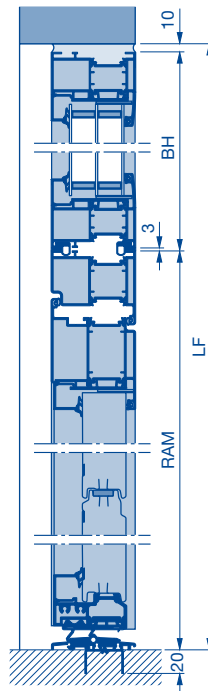
SPU 67 Thermo
in the opening
without window section,
without compound glazing



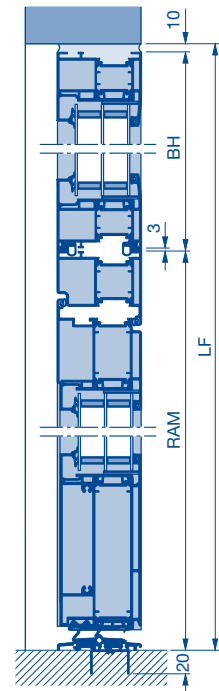
SPU 67 Thermo
behind the opening
without window section,
without compound glazing



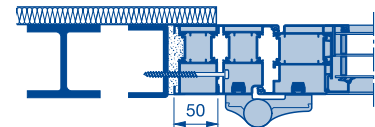
SPU 67 Thermo,
APU 67 Thermo
with fascia panel



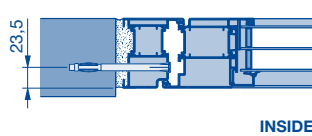
ALR 67 Thermo
with fascia panel



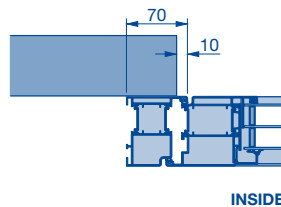
In the opening
(right illustration with 50 mm extension profile
for all-over insulation)



Plugs for metal frame



Behind the opening



Note:

Fitting with thermal break requires on-site preparations.

R Box section
AW Aluminium angle
SW Steel angle

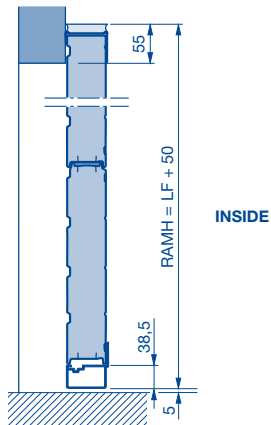
BH Panel height
RAM Overall frame dimension
LF Structural opening

Fixed Elements

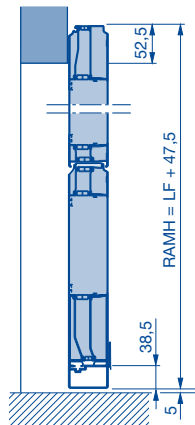
Possible fitting options and fitting examples

Possible fitting options

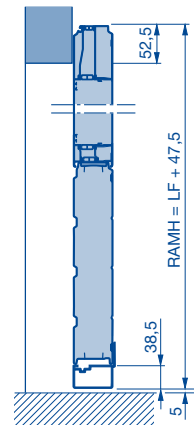
SPU 67 Thermo behind the opening
without window section,
without compound glazing



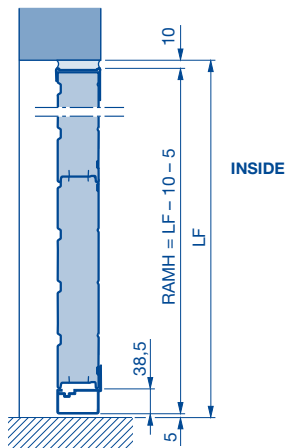
APU 67 Thermo behind the opening



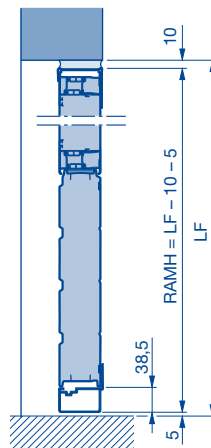
ALR 67 Thermo behind the opening



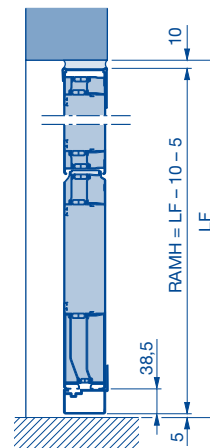
SPU 67 Thermo in the opening
without window section,
without compound glazing



APU 67 Thermo in the opening

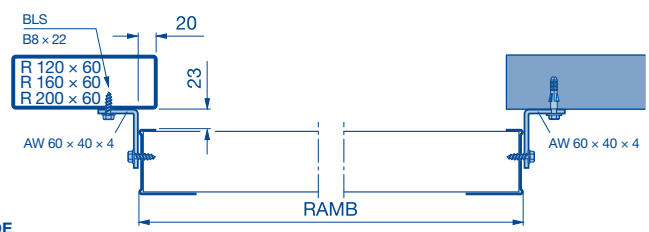
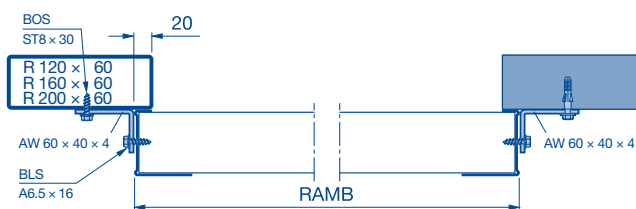


ALR 67 Thermo in the opening

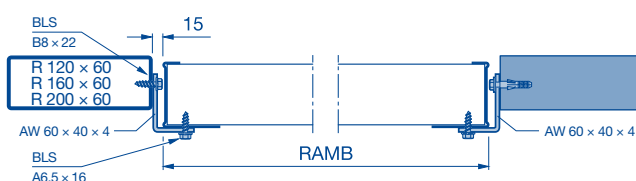


Fitting examples

Behind the opening



In the opening



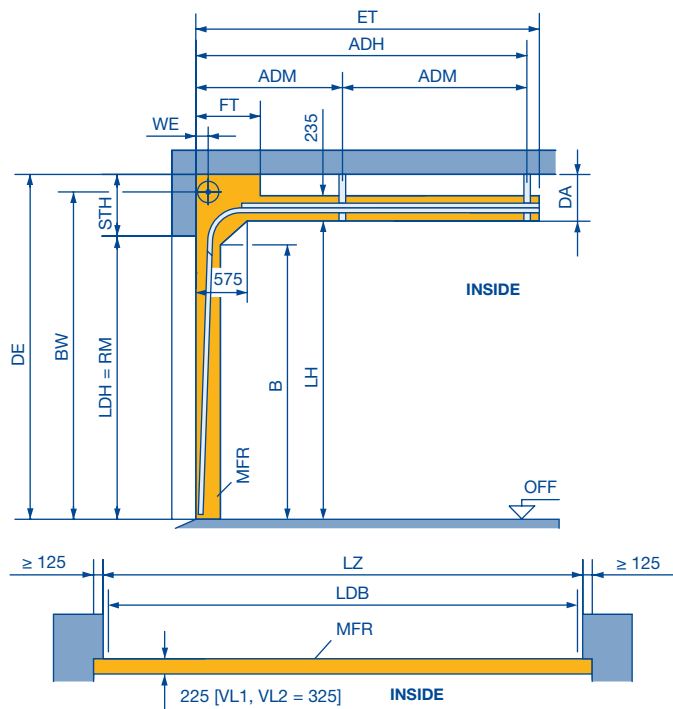
Note:
Fitting with thermal break requires on-site preparations.

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
	RM + 245	For manual operation and shaft operator with spring buffers below the track
N 3	RM + 725	For manual operation and shaft operator
	RM + 245	For manual operation and shaft operator with spring buffers below 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 52

	STH	WE	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

** Track application with inclination not possible!

LDB Clear passage width with ThermoFrame (see page 52)

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 to central ceiling anchor (see page 56)

WE Shaft centre from lintel (see table)

STH Min. headroom (see table)

DA Distance to ceiling (see table)

DE Ceiling height

LZ Clear frame dimension

MFR Space for fitting the door

FT Clearance for door operation

B Start of double radius, RM – 185

ET Min. distance back

Min. headroom

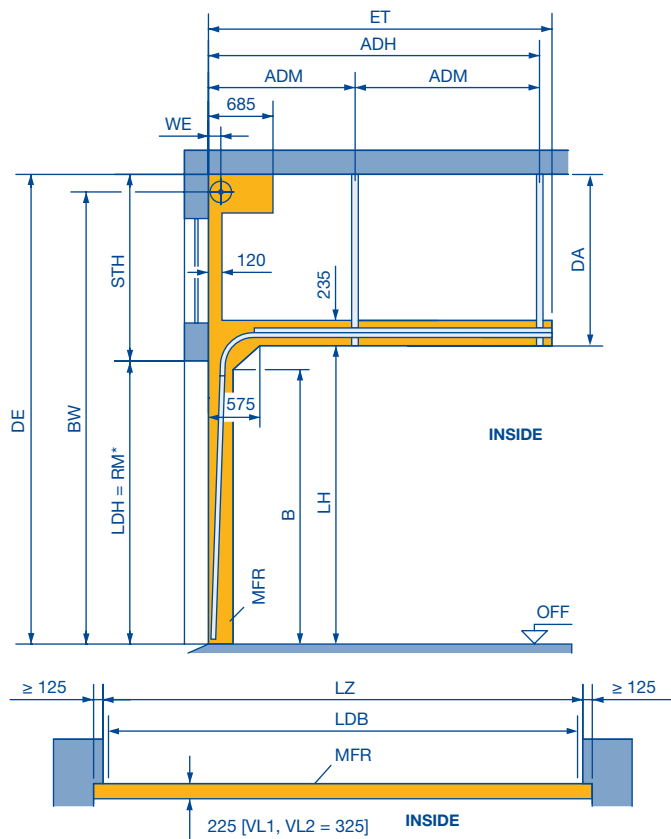
Track size	Headroom	Track size	Headroom	Track size	Headroom
N 1	425	GD 1	610–740	RG 4	1785
N 2	475	GD 2	660–790	RG 5	1785
N 3	585	H 4	880	V 6	RM + 500
NA 1	435	H 5	910	V 7	RM + 540
NA 2	485	H 8	950	V 9	RM + 635
ND 1	425	HA 4	890	VA 6	RM + 510
ND 2	475	HD 4	880	VU 6	RM + 350
ND 3	585	HD 5	910	VU 7	RM + 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: 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 the min. sideroom, see page 52.

	STH min.	WE	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 buffers below the track

- LDB** Clear passage width with ThermoFrame (see page 52)
- 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 56)
- WE** Shaft centre from lintel
- DAL** Anchor length = DE - RM - 125 (see page 56)
- LZ** Clear frame dimension
- 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

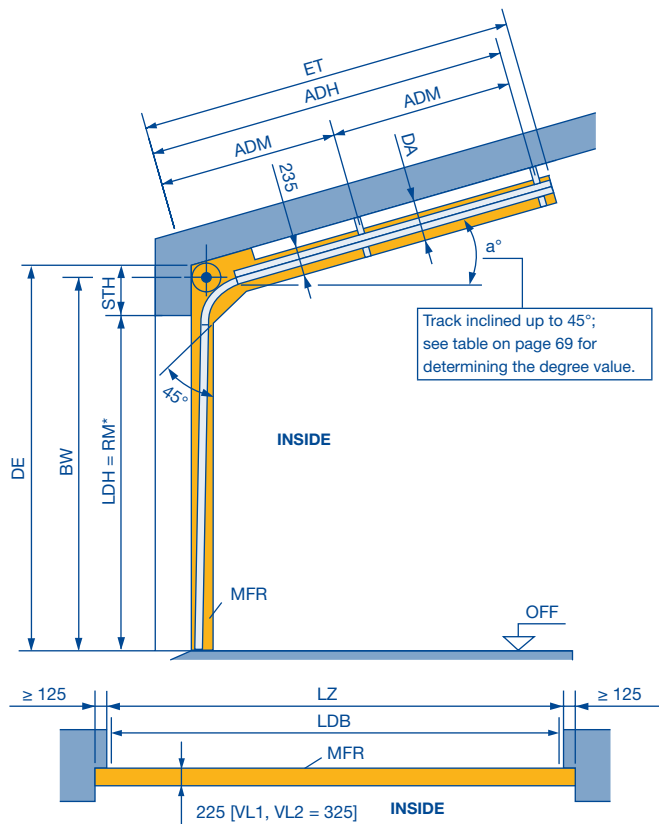
Notes:

- 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 the min. sideroom, see page 52.

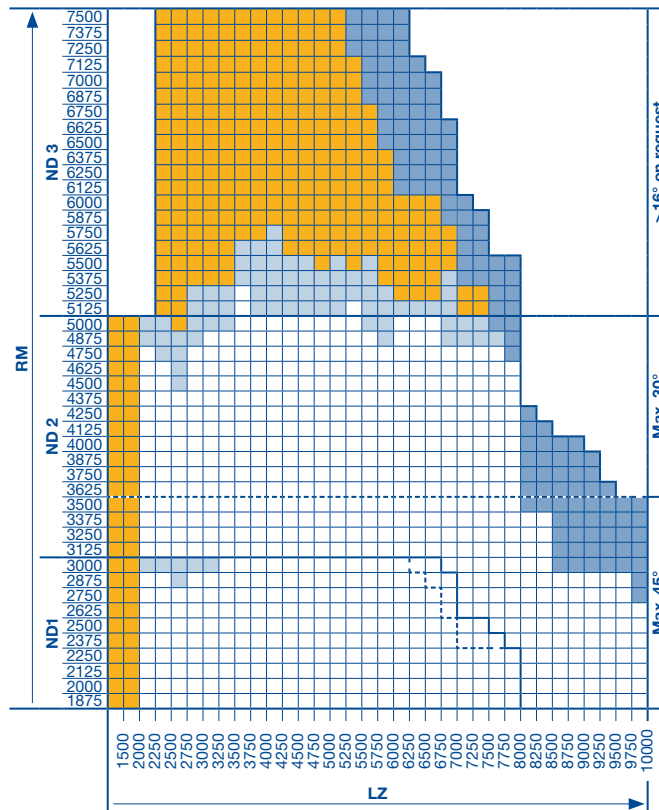
	STH ≤ 30°	STH > 30°
ND 1	425	525
ND 2	475	525
ND 3	585	-
With double spring shaft	795	-

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 buffers below the track
ND 3	RM + 725 - a° × 6.5	all versions
	RM + 295 - a° × 6.5	For manual operation and shaft operator with spring buffers below 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 doors on request.
- See page 69 for determining the roof slope.
- Roof slope on request for RM ≤ 3500 und > 30° or > 3500 and > 16°.



LDB Clear passage width with ThermoFrame (see page 52)

LDH Clear passage height

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

ADH Distance to rear ceiling anchor

ND 1 + ND 2 = RM + 220 - a° × 6.5

ND 3 = RM + 320 - a° × 6.5

ADM Distance to central ceiling anchor (see page 56)

STH Min. headroom (see page 35)

DA Distance to ceiling on request

DAL Anchor length = DE - RM + 25 (see page 56)

LZ Clear frame dimensions (from 1200)

DE Ceiling height

ET Min. distance back

RM Grid height

MFR Space for fitting the door

a° Roof slope

On request

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).

Track limit for SPU 67 Thermo

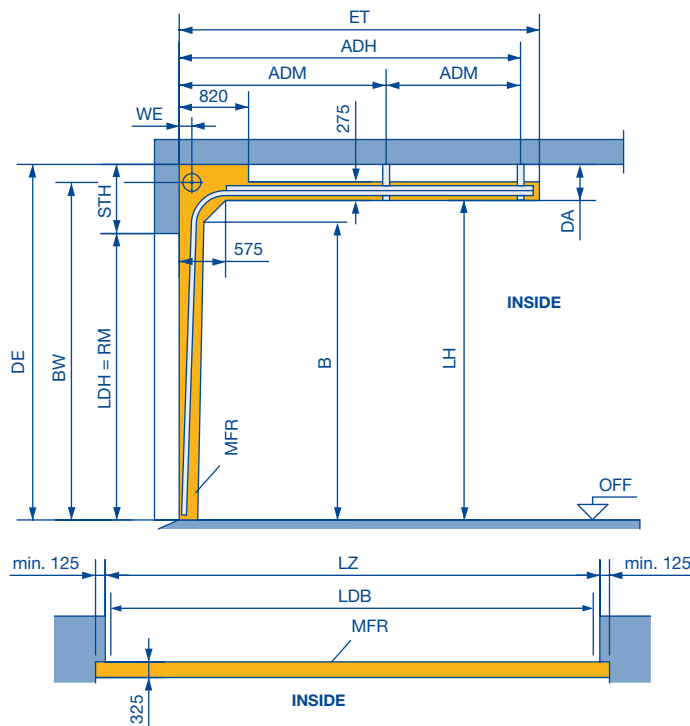
Track limit for APU 67 Thermo and ALR 67 Thermo

Dimensions in mm

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

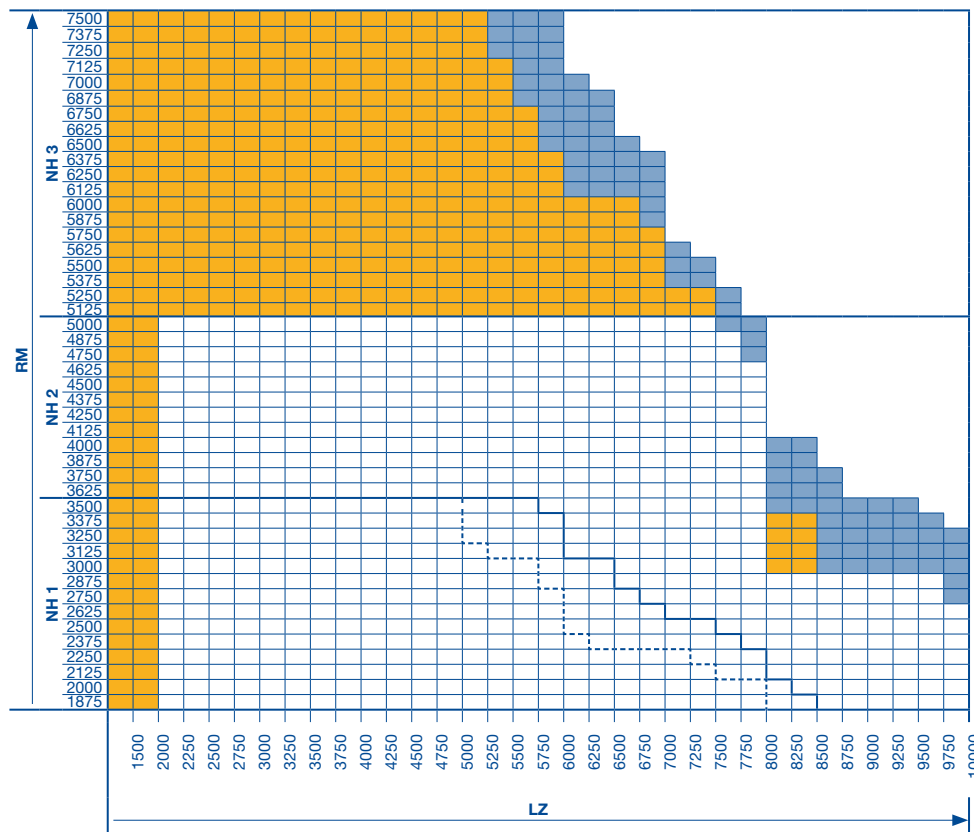
Observe the min. sideroom, see page 52.

	WE	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)
NH 1 + 2	2 x RM - LH + 695 For manual operation with spring buffers below the track
NH 2	2 x RM - LH + 905 For shaft operator with long spring buffer = (LH - RM) ≤ 1000
NH 2	2 x RM - LH + 455 For shaft operator with spring buffers below the track
NH 3	2 x RM - LH + 975 all versions
NH 3	2 x RM - LH + 455 For manual operation and shaft operator with spring buffers below 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.

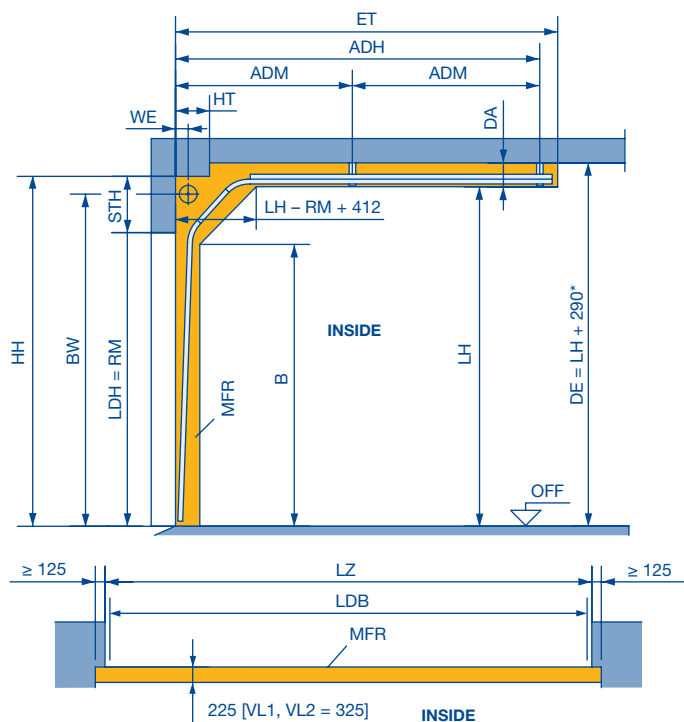


- LDB** Clear passage width with ThermoFrame (see page 52)
 - LDH** Clear passage height
 - RM** Grid height
 - BW** Position of shaft support
NH 1 = LH + 200
NH 2 = LH + 225
NH 3 = LH + 305
 - LH** Track height
Min. = RM + 330
max. = RM + 460
 - ADH** Distance to rear ceiling anchor
NH 1 + NH 2 = 2 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 56)
 - WE** Shaft centre from lintel
 - STH** Min. headroom (see page 35)
 - DA** Distance to ceiling
 - DE** Ceiling height
 - DAL** Anchor length = DE - LH + 15 (see page 56)
 - LZ** Clear frame dimensions (from 1200)
 - ET** Min. distance back
 - MFR** Space for fitting the door
 - B** Start of double radius, LH - 310
- On request
 Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
 Track limit for SPU 67 Thermo
 Track limit for APU 67 Thermo and ALR 67 Thermo
 Dimensions in mm

Track Application: NS

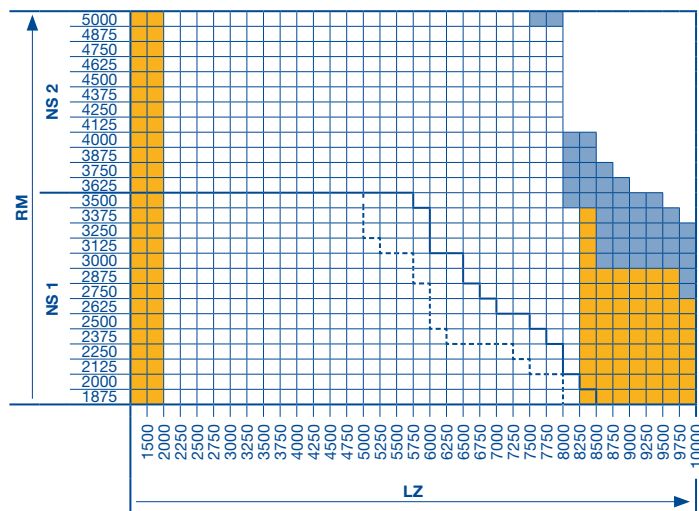
Normal track application

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 the min. sideroom, see page 52.

	STH	HT	WE	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	

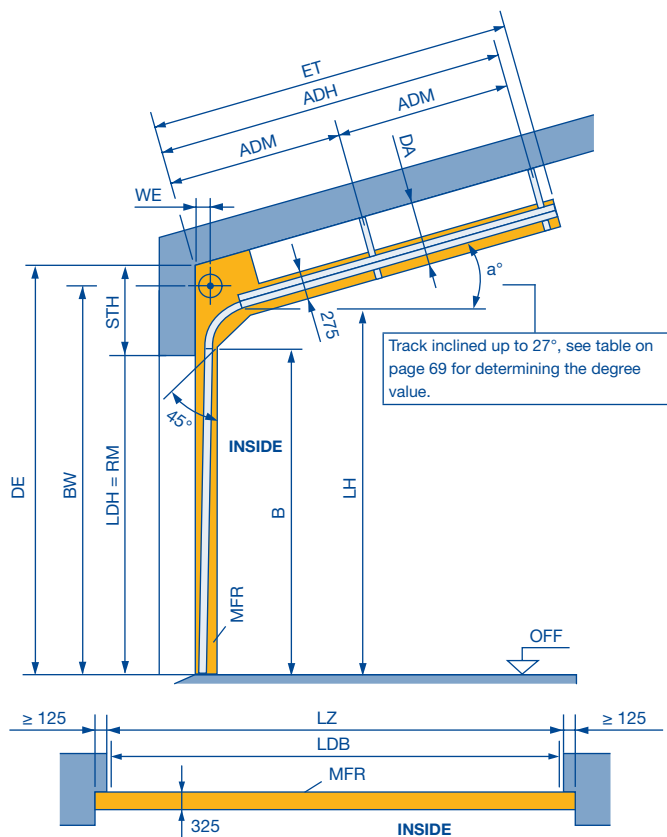
- * Min.
- ** Or with chain hoist / hand pulley
- STH** Min. headroom (see page 35)
- ET** Min. distance back on request
- ADH** Distance to rear ceiling anchor on request
- ADM** Distance to central ceiling anchor on request
- DA** Min. distance to ceiling 275
- HT** Obstruction depth
- DAL** Anchor length = DE - LH - 15 (see page 56)
- BW** Position of shaft support
- WE** Shaft centre from lintel
- HH** Obstruction height
- DE** Ceiling height
- LH** Track height
- LDB** Clear passage width with ThermoFrame (see page 56)
- 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
- On request
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- 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

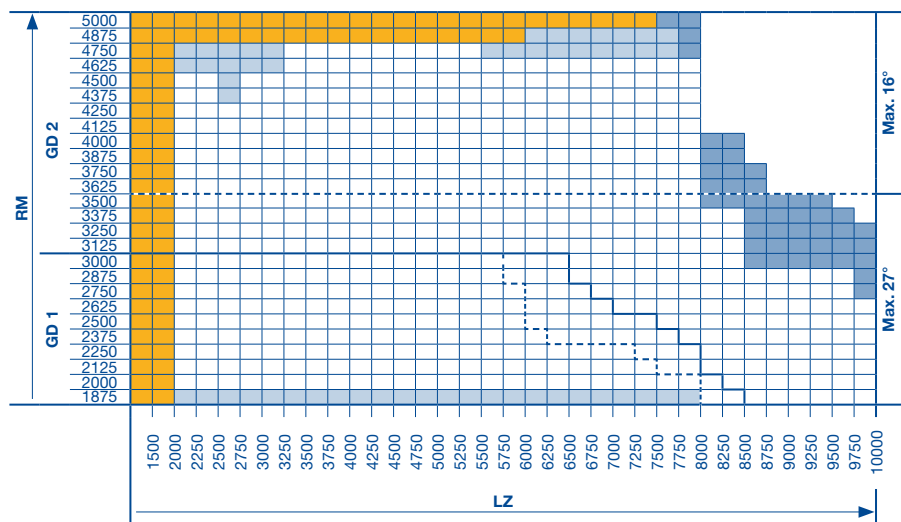
Observe the min. sideroom, see page 52.

	WE
GD 1	140
GD 2	160

ET = min. distance back	
GD 1 + 2	2 × RM - LH + 1145 - a° × 6.5
	For manual operation with long spring buffer
	2 × RM - LH + 675 - a° × 6.5
	a° > 5° and with operator, with short spring buffer
	2 × RM - LH + 905 - a° × 6.5
	a° ≤ 5° and with operator, with long spring buffer
	2 × RM - LH + 295 - a° × 6.5
	For manual operation and shaft operator with spring buffers below 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.
- See page 69 for determining the roof slope.
- 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 to central ceiling anchor = see page 56

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 35)

DA Distance to ceiling on request

DE Ceiling height

DAL Anchor length on request (see page 56)

LDB Clear passage width with ThermoFrame

(see page 52)

LDH Clear passage height

BW Position of shaft support

GD 1 = LH + 200

GD 2 = LH + 225

WE 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

On request

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).

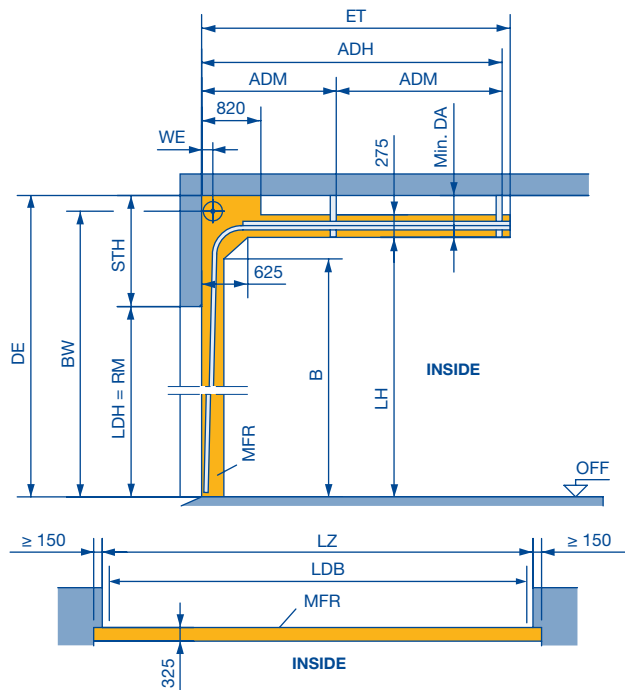
Track limit for SPU 67 Thermo

Track limit for APU 67 Thermo and ALR 67 Thermo

Dimensions in mm

Track Application: H

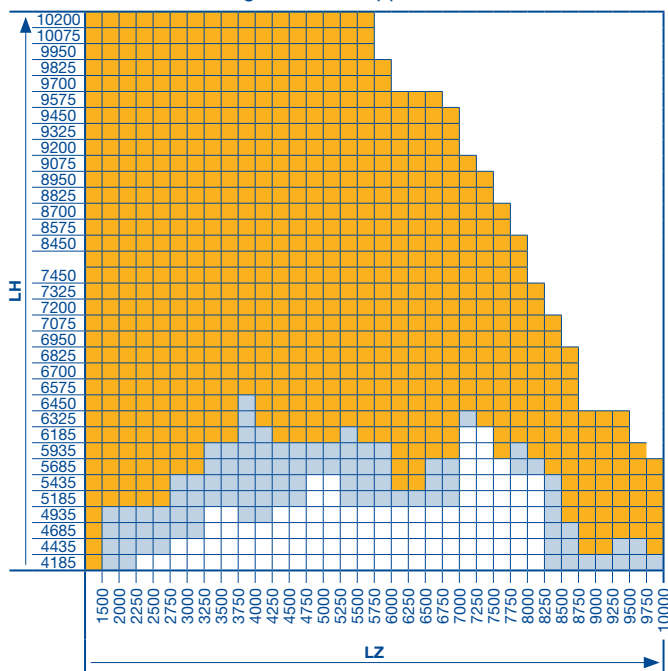
High-lift track application



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 buffers below 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 buffers below the track
H 8	2 x RM - LH + 975	All versions
	2 x RM - LH + 455	For manual operation and shaft operator with spring buffers below the track

Observe the min. sideroom, see page 52.

Table 2
Demarcation of track height for track application H



Please note:

1. Select required track height according to the door height in table 1.
2. Determine the intersection of the door width and track height using 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 1: Track heights (LH)

Door height RM	Min. LH	Max. LH	Door height RM	Min. LH	Max. LH
5000	5460	8300	H 5, WE = 180	7500	7960
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			
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			
6625	7085	10025			
6500	6960	9900			
6375	6835	9775			
6250	6710	9650			
6125	6585	9525			
6000	6460	9400			
5875	6335	9275			
5750	6210	9150			
5625	6085	9025			
5500	5960	8900			
5375	5835	8775			
5250	5710	8650			
5125	5585	8525			

H 8, WE = 205
All door types and versions available on request.

Notes:

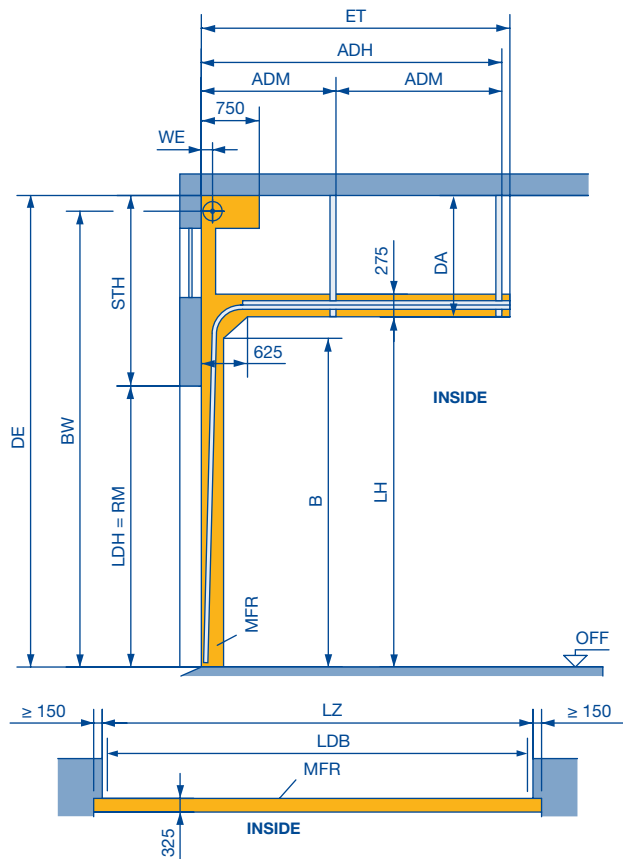
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing on request

- LDB** Clear passage width with ThermoFrame (see page 52)
 - LDH** Clear passage height
 - RM** Grid height
 - LH** Track height (see Table 1 + 2)
 - BW** Position of shaft support
H 4 + 5 = LH + 280, H 8 = LH + 305
 - ADH** Distance to rear ceiling anchor
H 4 + H 5 = 2 x RM - LH + 670 (long spring buffer)
H 4 + H 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 56)
 - WE** Shaft centre from lintel (see table 1)
 - STH** Min. headroom (see page 35)
 - 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 56)
 - 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
- Torsion spring shaft is possible.
 - Door types APU 67 Thermo and ALR 67 Thermo on request.
 - All door types on request.

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 and doors with wicket door 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 buffers below 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 buffers below the track

Observe the min. sideroom, see page 52.

Please note:

- Select required track height according to the door height in table 3.
- Determine the intersection of the door width and track height using 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 3: Track heights (LH)

Door height	Min. LH	Max. LH	HA 4, WE = 160
RM 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 52)
- LDH** Clear passage height
- RM** Grid height
- LH** Track height (see Table 3 + 4)
- 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 56)
- WE** Shaft centre from lintel (see table 3)
- STH** Min. headroom (see page 35)
- DA** Distance to ceiling = HA 4 = min. 420
- DAL** Anchor length DE - LH - 15 (see page 56)
- 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.

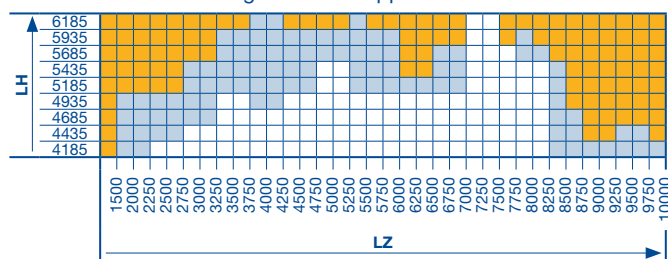
■ Door types APU 67 Thermo and ALR 67 Thermo on request.

■ All door types and versions on request.

Dimensions in mm

Table 4

Demarcation of track height for track application HA



Track Application: HD

High-lift track application with inclination

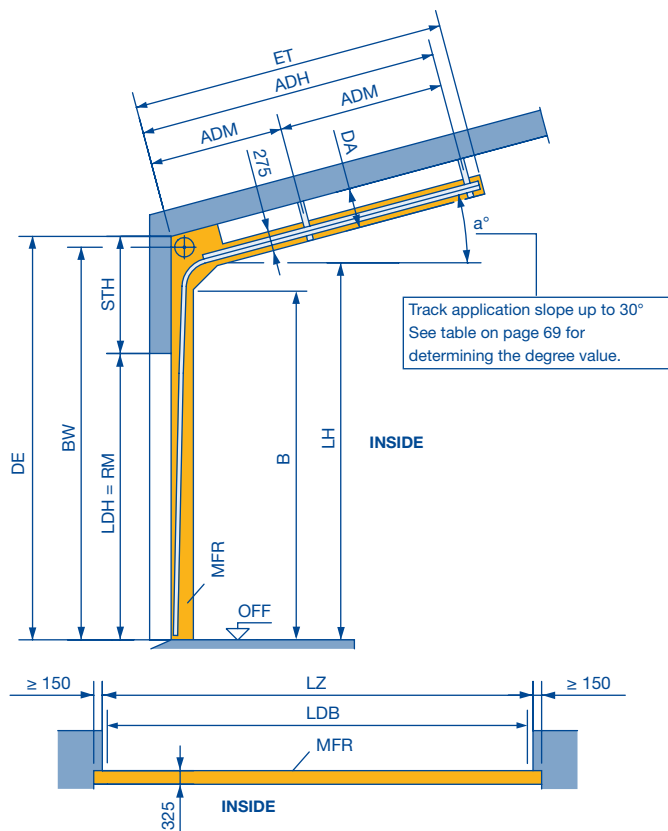
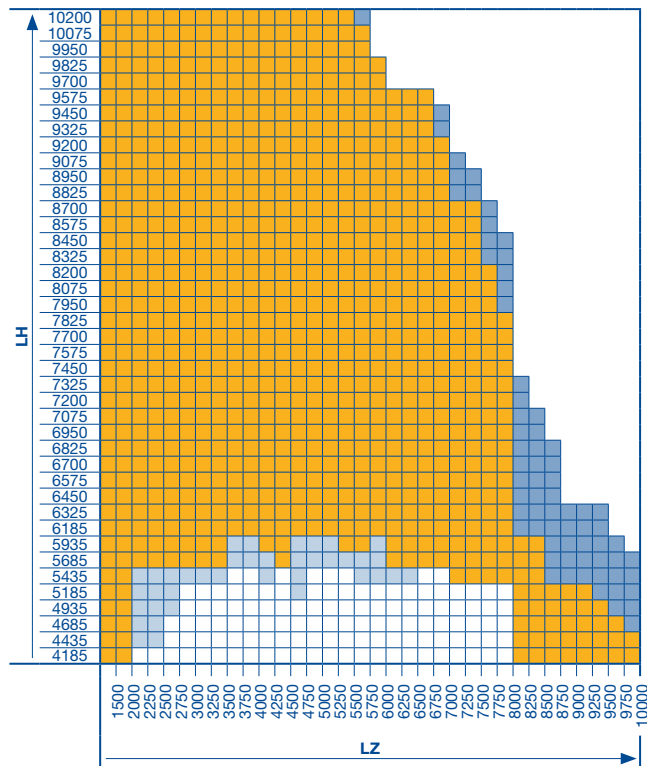


Table 5
Demarcation of track height for track application HD to 10° and 11° to 30° on request!



Please note:

1. Select required track height according to the door height in Table 1 on page 41.
2. Determine the intersection of the door width and track height using table 5.

		ET = min. Distance back	
HD 4+5	2 × RM – LH + 1145 – a° × 6.5	For manual operation with long spring buffer (standard)	
	2 × RM – LH + 695 – a° × 6.5	For manual operation with spring buffers below the track	
	2 × RM – LH + 905 – a° × 6.5	For shaft operator with long spring buffer (LH – RM) ≤ 1000 and a° ≤ 5°	
	2 × RM – LH + 675 – a° × 6.5	For shaft operator with short spring buffer (LH – RM) > 1000 or a° > 5°	
	2 × RM – LH + 455 – a° × 6.5	For shaft operator with spring buffers below the track	
HD 8	2 × RM – LH + 975 – a° × 6.5	all versions	
	2 × RM – LH + 455 – a° × 6.5	For manual operation and shaft operator with spring buffers below the track	

See the high-lift track application for all other fitting dimensions. Observe the min. sideroom, see page 52.

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.
- See page 69 for determining the roof slope.
- 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.

- DA** Distance to ceiling on request
- DAL** Anchor length DE – LH + 140 (see page 56)
- LH** Track height (see Table 1 on page 41 and Table 5)
- STH** Min. headroom (see page 35)
- 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 × RM – LH + 670 – a° × 6.5 (long spring buffer)
HD 4 + HD 5 = 2 × RM – LH + 430 – a° × 6.5 (long and short spring buffer + operator)
HD 8 = 2 × RM – LH + 510
- ADM** Distance to central ceiling anchor on request
- WE** Shaft centre from lintel (see Table 1 on page 41)
- DE** Ceiling height
- LDB** Clear passage width with ThermoFrame (see page 52)
- 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 and versions on request.

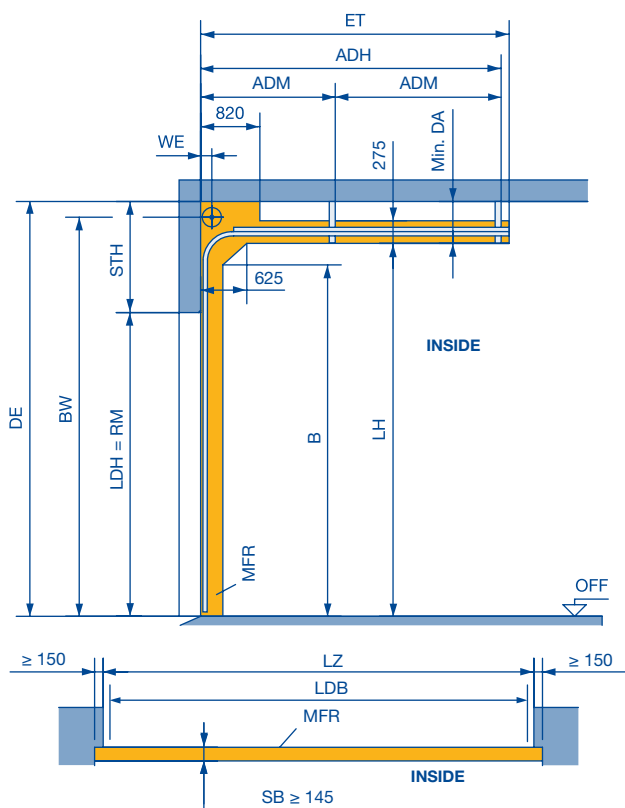
Dimensions in mm

Track Application: HG

High-lift track application

with steep track

(Application for loading ramp doors)



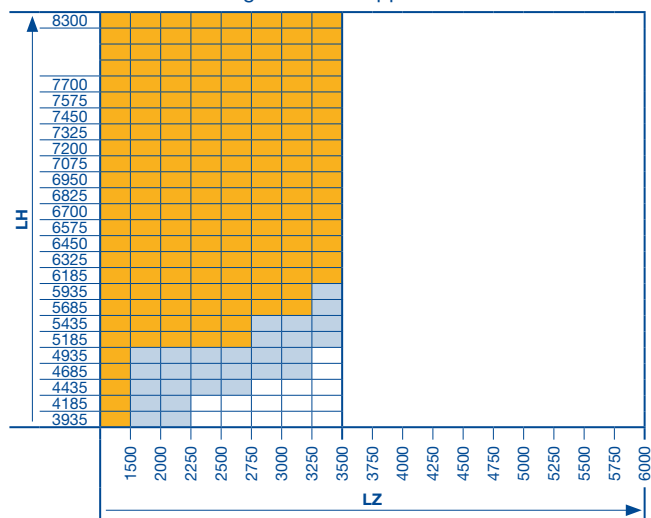
ET = min. Distance back	
HG 4 + 5	$2 \times RM - LH + 1145$ For manual operation with long spring buffer
	$2 \times RM - LH + 695$ For manual operation with spring buffers below the track
	$2 \times RM - LH + 905$ For shaft operator with long spring buffer $(LH - RM) \leq 1000$
	$2 \times RM - LH + 675$ For shaft operator with short spring buffer $(LH - RM) > 1000$
	$2 \times RM - LH + 455$ For shaft operator with spring buffers below the track

Other versions on request.

Observe the min. sideroom, see page 52.

Table 7

Demarcation of track height for track application HG



Please note:

1. Select required track height according to the door height in table 6.
2. Determine the intersection of the door width and track height using table 7.

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 6: Track heights (LH)

Door height	Min. LH	Max. LH	
5000	5460	8300	HG 5, WE = 180
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	HG 4, WE = 160
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	

Notes:

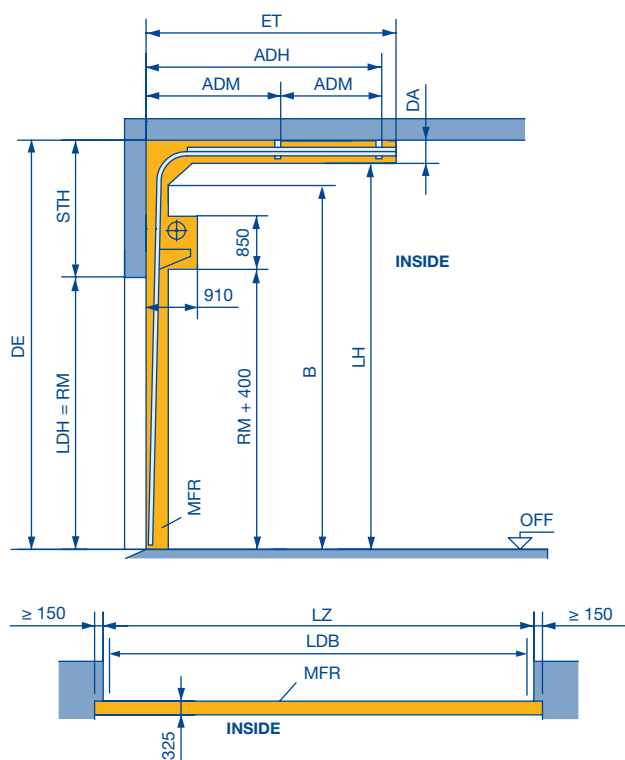
- Observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25 under all circumstances!
- ALR 67 Thermo Glazing on request

LDB	Clear passage width with ThermoFrame (see page 52)
LDH	Clear passage height
RM	Grid height
LH	Track height (see Table 6)
BW	Position of shaft support HG 4 + HG 5 = LH + 280
ADH	Distance to rear ceiling anchor = HG 4 + HG 5 = $2 \times RM - LH + 605$ (long spring buffer) HG 4 + HG 5 = $2 \times RM - LH + 365$ (long and short spring buffer + operator)
ADM	Distance to central ceiling anchor (see page 56)
WE	Shaft centre from lintel (see table 6)
STH	Min. headroom (see page 35)
Min. DA	HG 4 = 420 HG 5 = 450, 625 with double spring shaft
SB	Slot width
DAL	Anchor length DE - LH - 15 (see page 56)
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
	Torsion spring shaft is possible.
	Door types APU 67 Thermo and ALR 67 Thermo on request.
	All door types on request.

Dimensions in mm

Track Application: HU

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

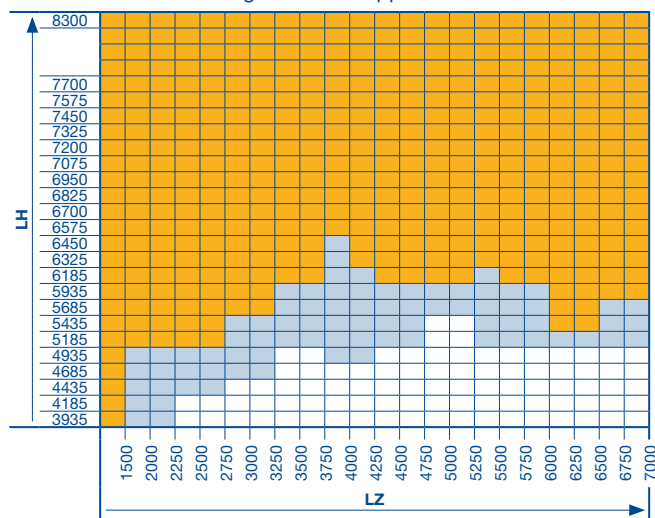


ET = min. Distance back	
HU 4 + 5	2 x RM - LH + 1145 For manual operation with long spring buffer
	2 x RM - LH + 695 For manual operation with spring buffers below the track
	2 x RM - LH + 675 For shaft operator with short spring buffer (LH - RM > 1510)
	2 x RM - LH + 455 For shaft operator with spring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

Other versions on request.

Observe the min. sideroom, see page 52.

Table 7
Demarcation of track height for track application HU



Please note:

1. Select required track height according to the door height in table 6.
2. Determine the intersection of the door width and track height using table 7.

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 6: 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	
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

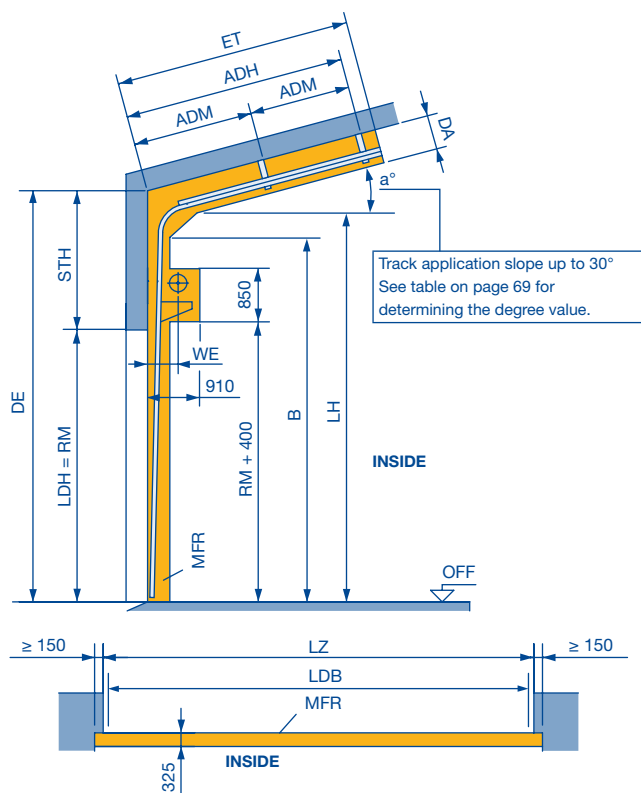
- LDB** Clear passage width with ThermoFrame (see page 52)
 - DE** Ceiling height
 - LDH** Clear passage height
 - RM** Grid height
 - LH** Track height (see Table 6)
 - ADH** Distance to rear ceiling anchor
HU 4 + HU 5 = 2 x RM - LH + 670 (long spring buffer)
HU 4 + HUG 5 = 2 x RM - LH + 430 (long and short spring buffer + operator)
 - ADM** Distance to central ceiling anchor (see page 56)
 - WE** Shaft centre from lintel (see table 6)
 - STH** Min. headroom (see page 35)
 - DA** Min. distance to ceiling 275
 - DAL** Anchor length DE - LH - 15 (see page 56)
 - LZ** Clear frame dimensions (**from 1200**)
 - ET** Distance back
 - MFR** Space for fitting the door
 - B** Start of double radius, LH - 310
- Torsion spring shaft is possible.
 - Door types APU 67 Thermo and ALR 67 Thermo on request.
 - 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:

1. Select required track height according to the door height in Table 6 on page 45.
2. Determine the intersection of the door width and track height using table 8.

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 buffers below the track
	$2 \times RM - LH + 945 - a^\circ \times 6.5$ For shaft operator with long spring buffer = $a^\circ \leq 5^\circ$
	$2 \times RM - LH + 715 - a^\circ \times 6.5$ For shaft operator with long spring buffer = $(LH - RM) \geq 1510$ or $a^\circ > 5^\circ$
	$2 \times RM - LH + 455 - a^\circ \times 6.5$ For shaft operator with spring buffers below the track

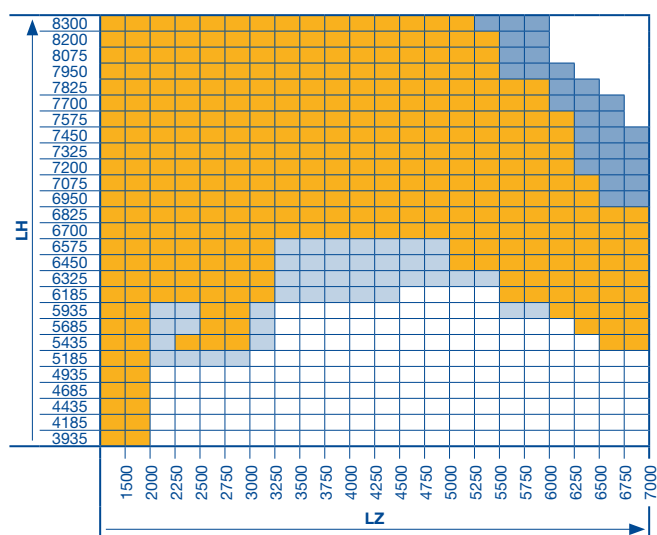
See the high-lift track application for all other fitting dimensions. Observe the min. sideroom, see page 52.

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.
- See page 69 for determining the roof slope.

Table 8

Demarcation of track height for track application RD to 10° and 11° to 30° on request!



- DE** Ceiling height
- DAL** Anchor length $DE - L - 15$ (see page 56)
- LH** Track height (see Table 6 on page 45)
- STH** Min. headroom (see page 35)
- ADH** Distance to 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 to central ceiling anchor (see page 56)
- WE** Shaft centre from lintel (see Table 6 on page 45)
- DA** Distance to ceiling on request
- LDB** Clear passage width with ThermoFrame (see page 52)
- 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

□ 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 and versions on request.

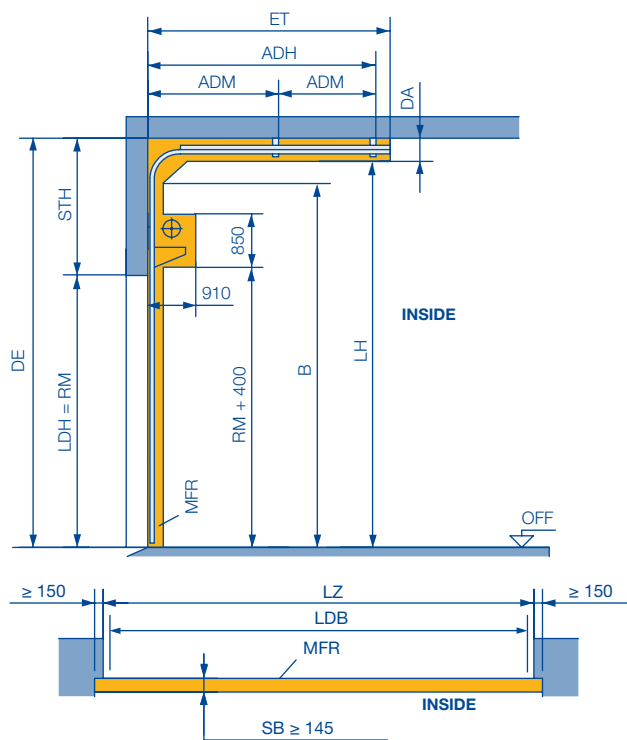
Dimensions in mm

Track Application: RG

High-lift track application

with low-mounted torsion spring shaft and steep track

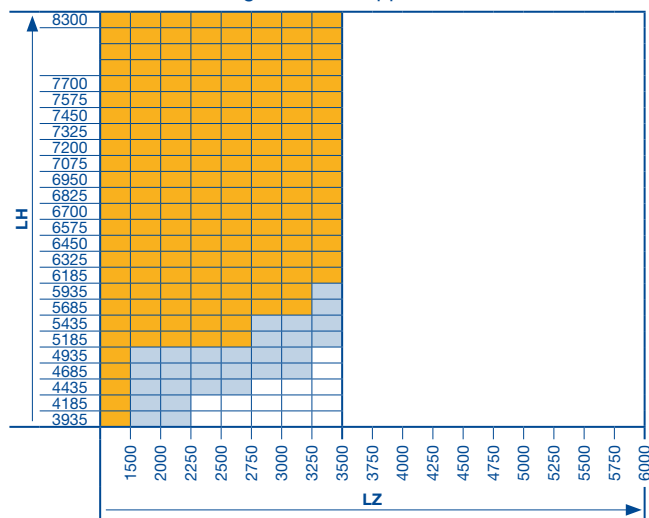
(Application for loading ramp doors)



ET = min. Distance back	
RG 4 + 5	2 × RM - LH + 1145 For manual operation with long spring buffer
	2 × RM - LH + 695 For manual operation with spring buffers below the track
	2 × RM - LH + 675 For shaft operator with short spring buffer (LH - RM > 1510)
	2 × RM - LH + 455 For shaft operator with spring buffers below the track

Other versions on request.
Observe the min. sideroom, see page 52.

Table 10
Demarcation of track height for track application RG



Please note:

1. Select required track height according to the door height in table 9.
2. Determine the intersection of the door width and track height using table 10.

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 9: Track heights (LH)

Door height	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	
3625	5135	6435	
3500	5010	6185	RG 4, WE = 295
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

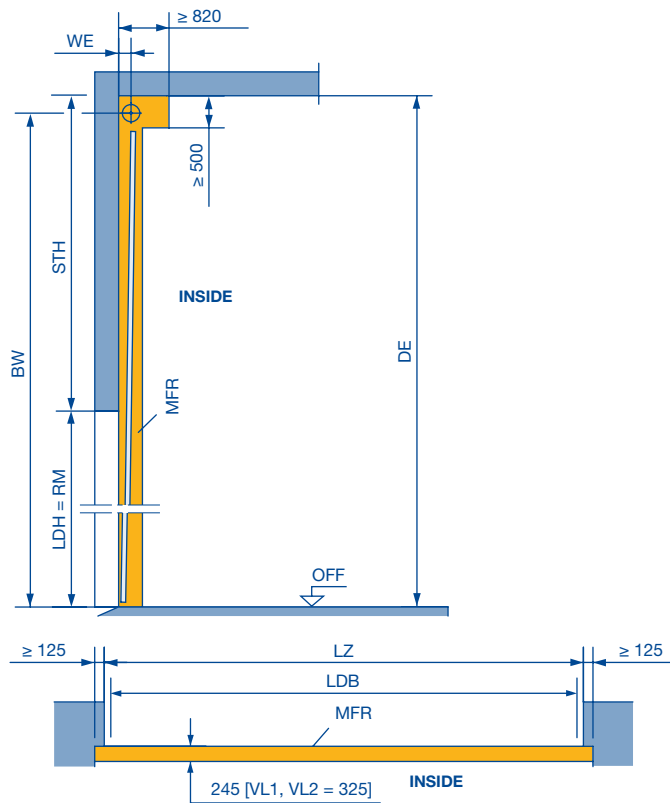
- LDB** Clear passage width with ThermoFrame (see page 52)
- LDH** Clear passage height
- RM** Grid height
- LH** Track height (see Table 9)
- ADH** Distance to rear ceiling anchor =
RG 4 + RG 5 = 2 × RM - LH + 605 (long spring buffer)
RG 4 + RG 5 = 2 × RM - LH + 365 (long and short spring buffer + WA 400)
- ADM** Distance to central ceiling anchor (see page 56)
- WE** Shaft centre from lintel (see table 9)
- STH** Min. headroom (see page 35)
- DA** Min. distance to ceiling 275
- SB** Slot width
- DAL** Anchor length DE - LH - 15 (see page 56)
- 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

- Torsion spring shaft is possible.
- 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

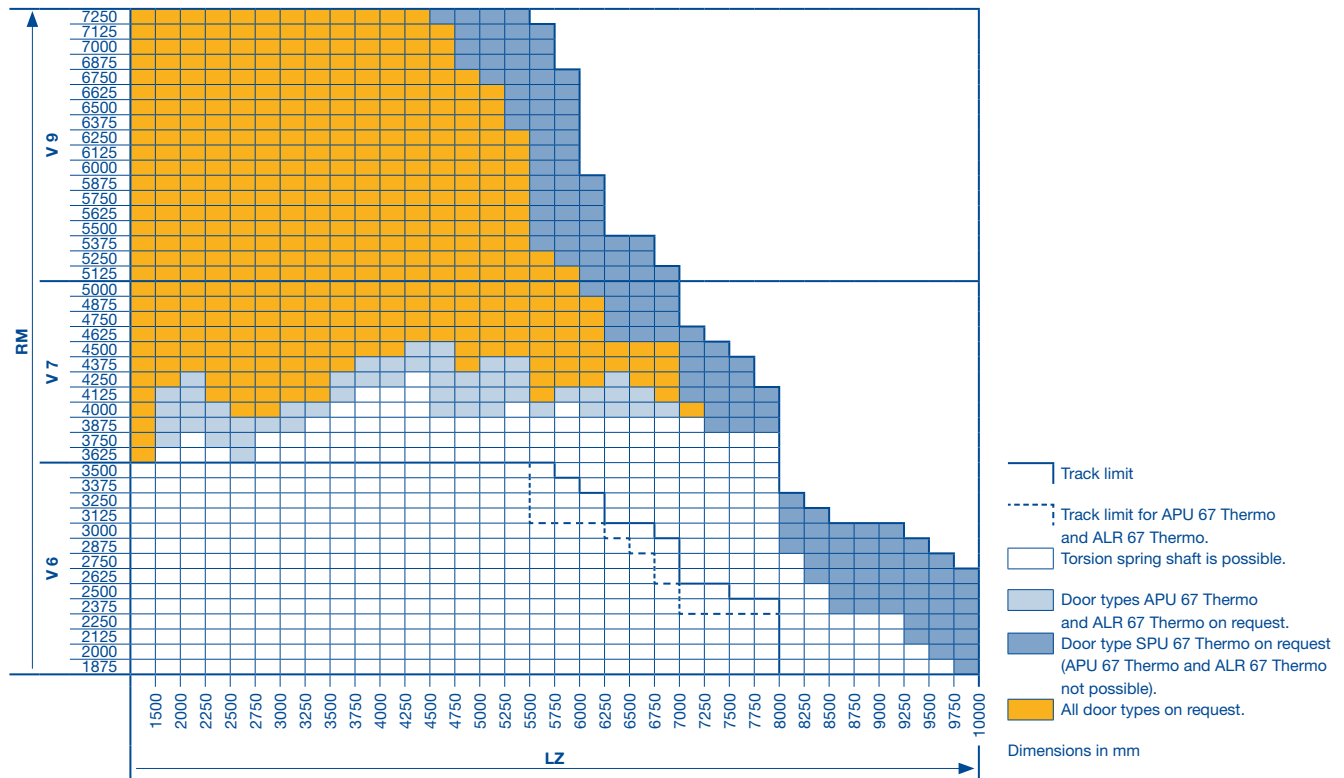


Notes:

- 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 the min. sideroom, see page 52.

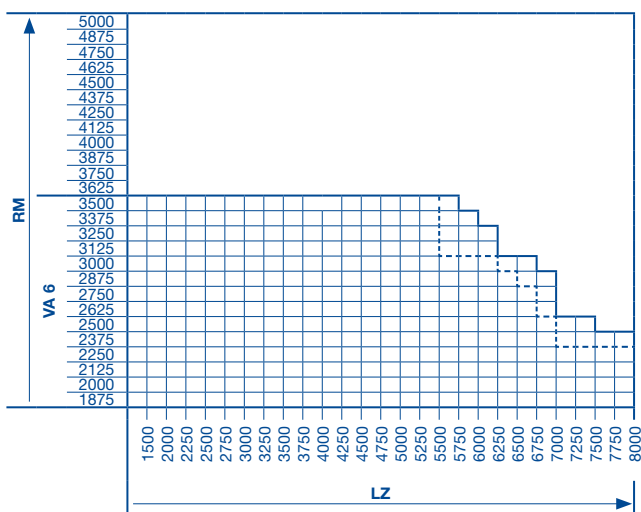
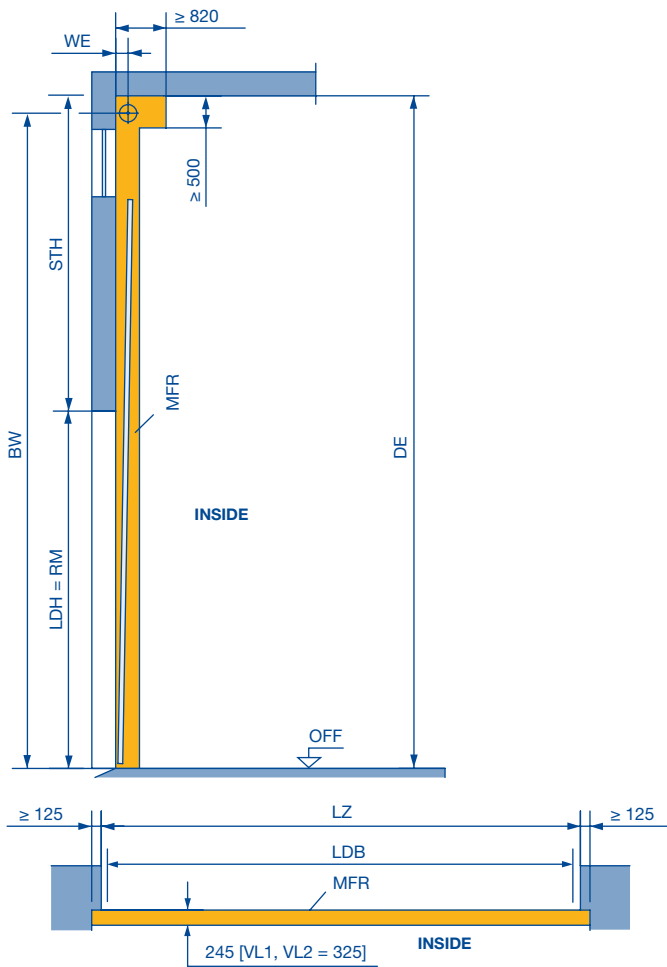
- LDB** Clear passage width with ThermoFrame (see page 52)
- LDH** Clear passage height
- RM** Grid height
- WE** Shaft centre from lintel
V 6 = 160, V 7 = 180, V 9 = 205
- STH** Min. headroom (see page 35)
- DE** Ceiling height
2 × RM + 500 (V 6)
2 × RM + 540 (V 7)
2 × RM + 730 (V 7 with double spring 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 the min. sideroom, see page 52.

- LDB** Clear passage width with ThermoFrame (see page 52)
- LDH** Clear passage height
- RM** Grid height
- WE** Shaft centre from lintel
VA 6 = 160
- STH** Min. headroom (see page 35)
- 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:

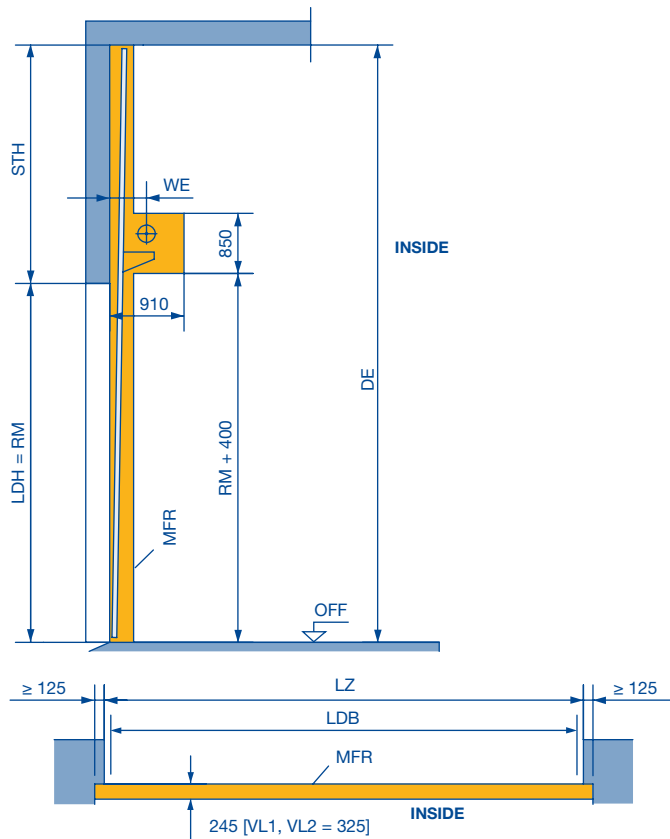
ALR 67 Thermo Glazing and doors with wicket door on request.

- Track limit
 - - - Track limit for APU 67 Thermo and ALR 67 Thermo.
 - All door types available in any version.
 - Door types APU 67 Thermo and ALR 67 Thermo on request.
 - All door types and versions on request.
- Dimensions in mm

Track Application: VU

Vertical track application

with low-mounted torsion spring shaft

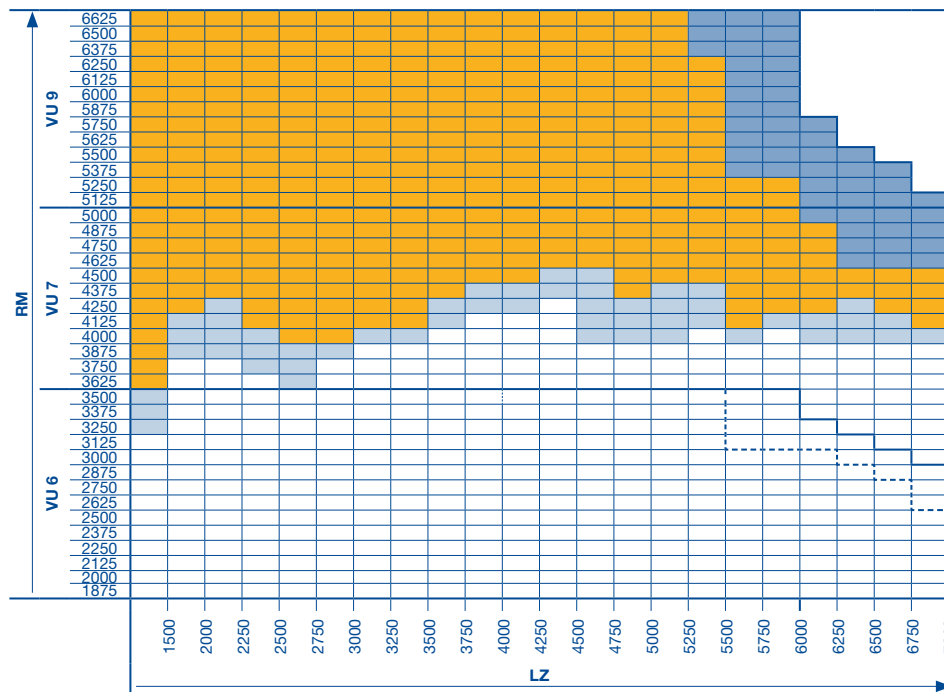


Notes:

- 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 the min. sideroom, see page 52.

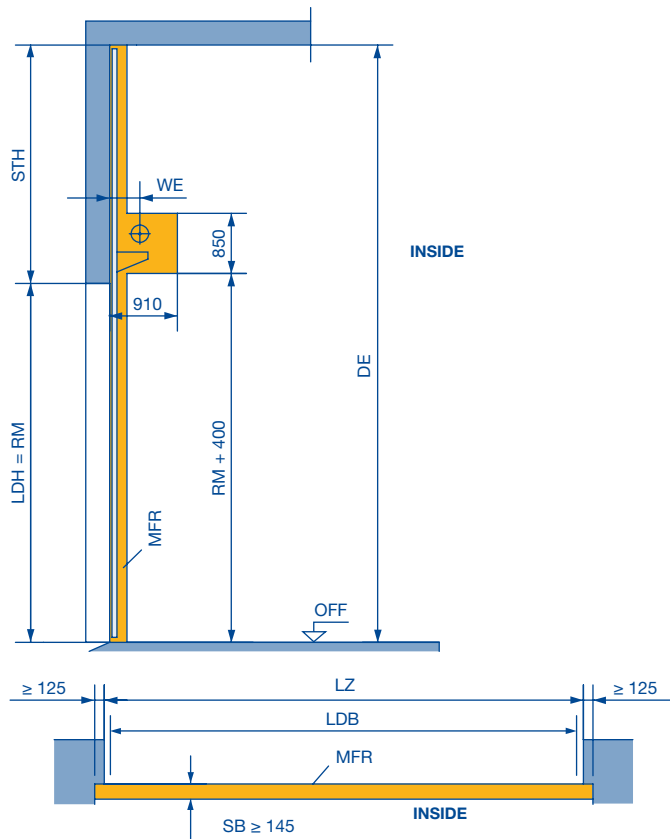
- DE** Ceiling height = $2 \times RM + 350$
- WE** Shaft centre from lintel
VU 6 = 335
VU 7 = 355
VU 9 = 395
- STH** Min. headroom (see page 35)
- LDB** Clear passage width with ThermoFrame (see page 52)
- LDH** Clear passage height
- RM** Grid height
- LZ** Clear frame dimensions (from 1200)
- MFR** Space for fitting the door



- Track limit
 - - - Track limit for APU 67 Thermo and ALR 67 Thermo.
 - Torsion spring shaft is possible.
 - Door types APU 67 Thermo and ALR 67 Thermo on request.
 - Door type SPU 67 Thermo on request.
 - 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)

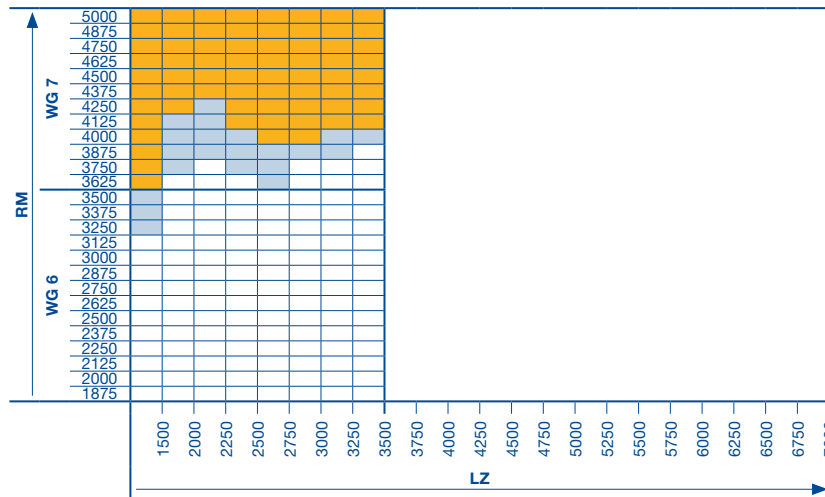


Notes:

- 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!
- ALR 67 Thermo Glazing 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 the min. sideroom, see page 52.

- DE** Ceiling height = $2 \times RM + 350$
- WE** Shaft centre from lintel
WG 6 = 295
WG 7 = 315
- STH** Min. headroom (see page 35)
- SB** Slot width
- LDB** Clear passage width with ThermoFrame (see page 52)
- LDH** Clear passage height
- RM** Grid height
- LZ** Clear frame dimensions (from 1200)
- MFR** Space for fitting the door



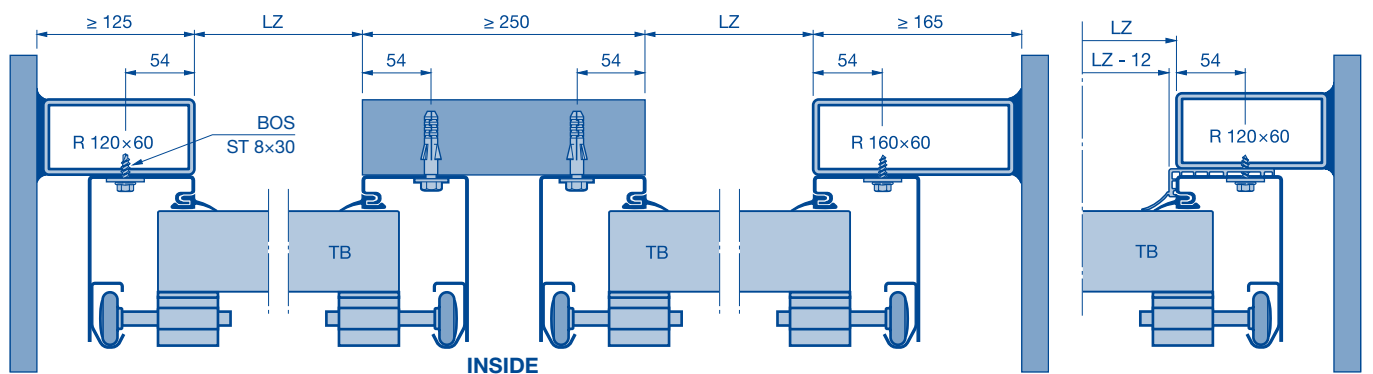
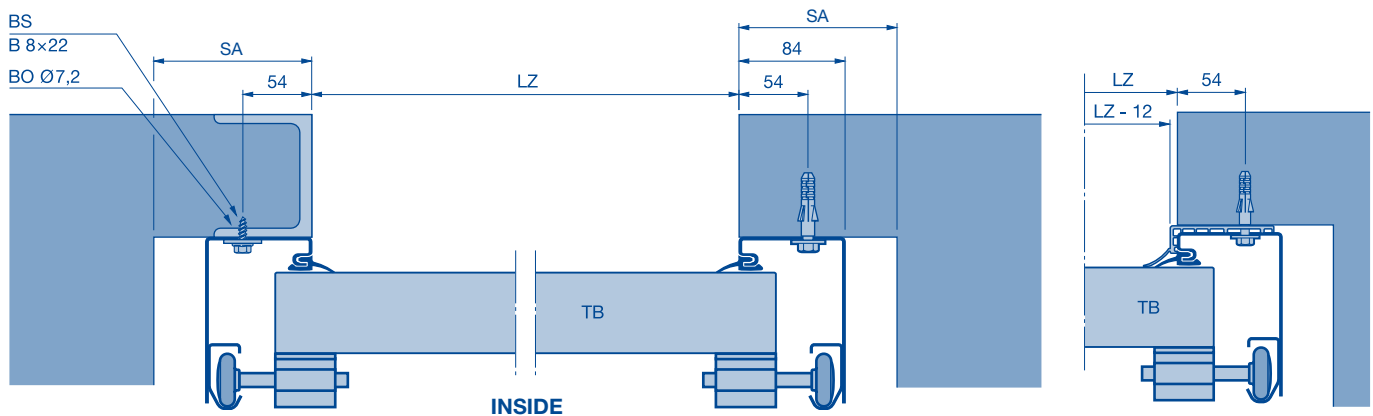
- Torsion spring shaft is possible.
 - Door types APU 67 Thermo and ALR 67 Thermo on request.
 - All door types on request.
- Dimensions in mm

Sideroom

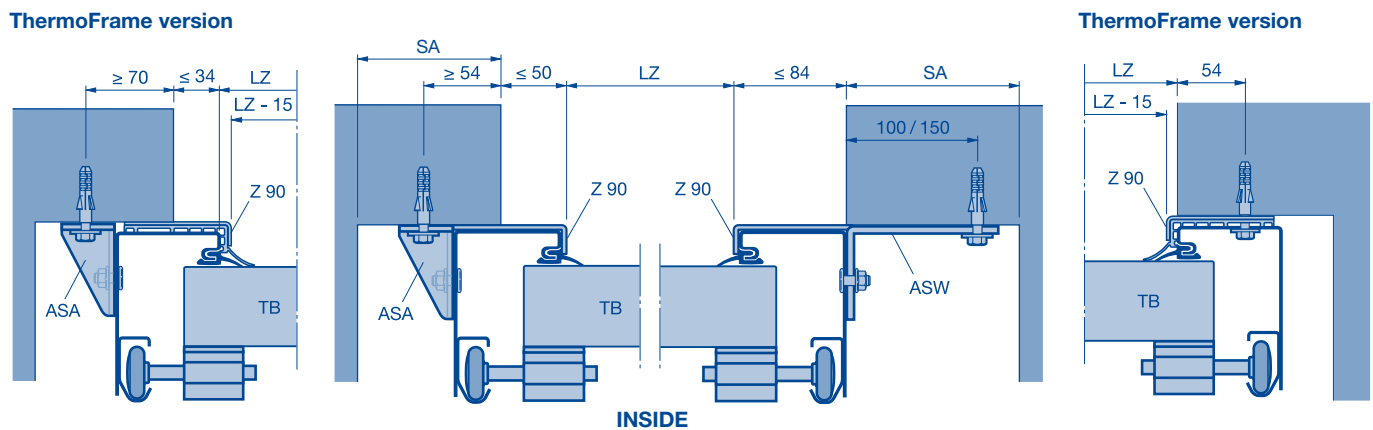
Required sideroom

Track application / designation	SA	Track application / designation	SA
N, NA, ND, NH, NS, GD, V, VA, VU, WG	125	Chain hoist	Page 55
H, HA, HD, HG, HU, RD, RG	150	Shaft operators	Pages 57 – 64
Hand Pulley	N, NA, ND, NH, NS, GD	140	Direct drive operators
	H, HA, HD, HG, HU, RD, RG	150	
	V, VA, VU, WG	125	

Sideroom



Sideroom with frame covering



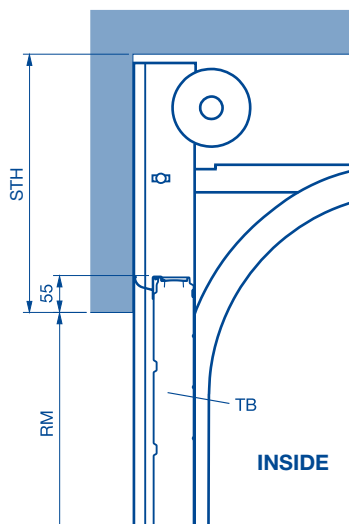
LZ Clear frame dimension
BO Hole
BOS Drilling screw

BS Self-tapping screw
TB Door leaf
R Box section

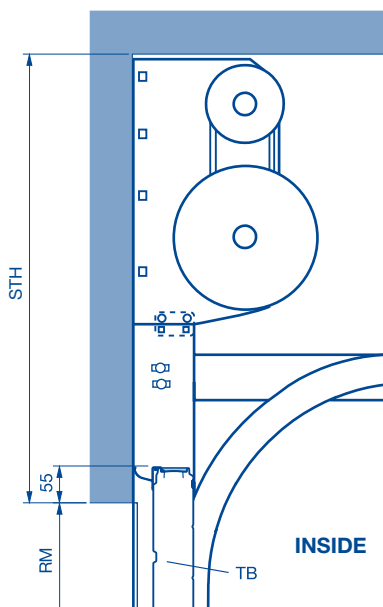
SA Sideroom
ASA Screw-on anchor 70 x 40
ASW Screw-on bracket 70 x 120 / 170

Lintel Fitting

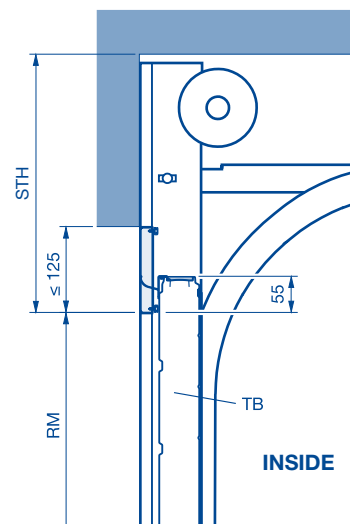
Normal lintel fitting
Lintel variation up to 30 mm high



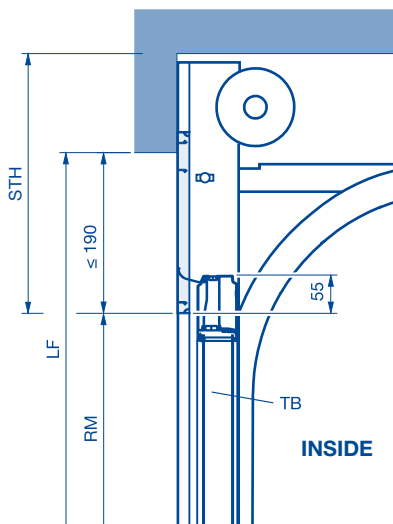
Normal lintel fitting
Double spring shaft



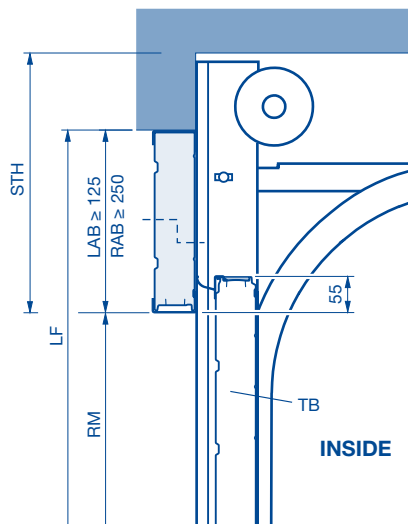
Single-skinned steel fascia
for SPU 67 Thermo to make
up for insufficient headroom
up to 125 mm and LZ ≤ 8000 mm
(only for track applications N)



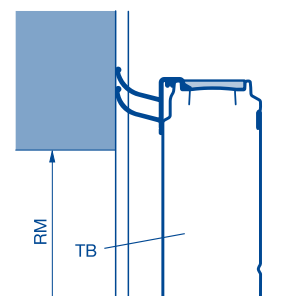
Smooth panel, anodised,
for APU 67 Thermo, ALR 67 Thermo
and ALR 67 Thermo Glazing to make
up for insufficient headroom
from 31 to 190 mm and LZ ≤ 7000 mm
(only for track application N)



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



Lintel fitting with ThermoFrame



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

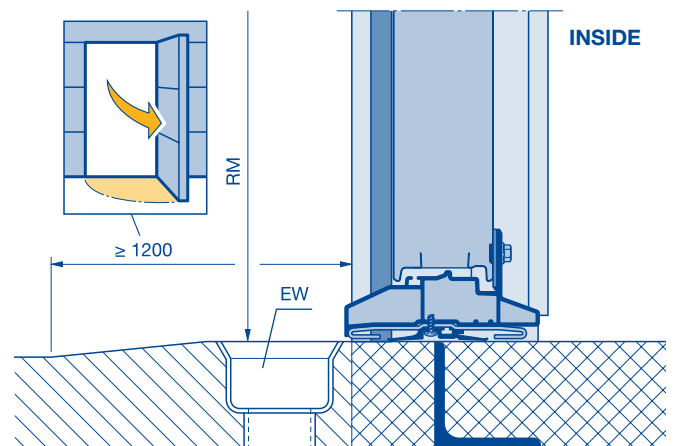
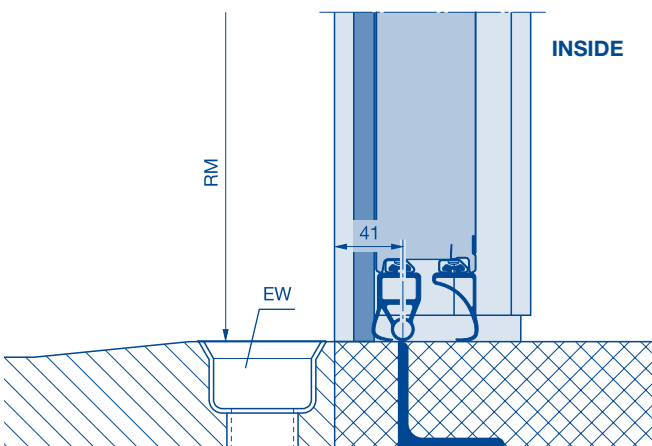
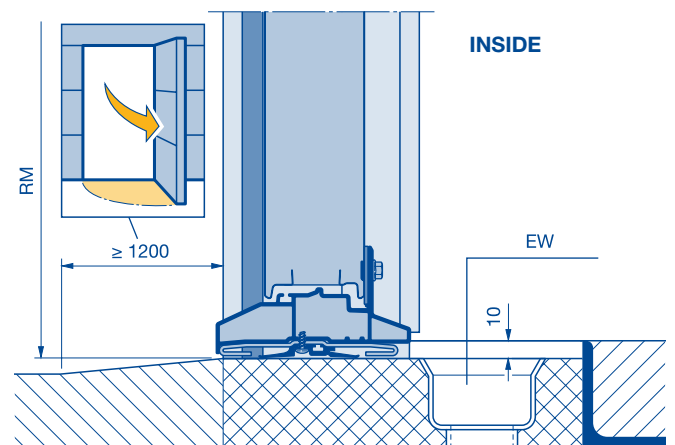
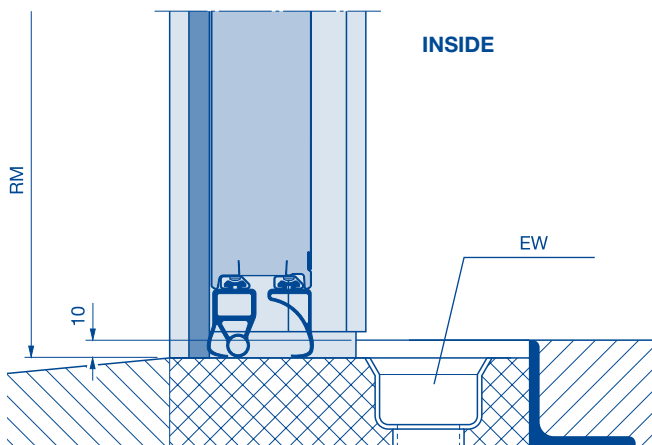
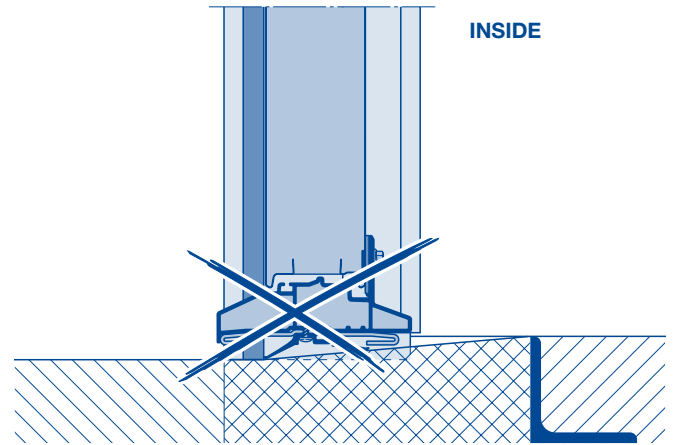
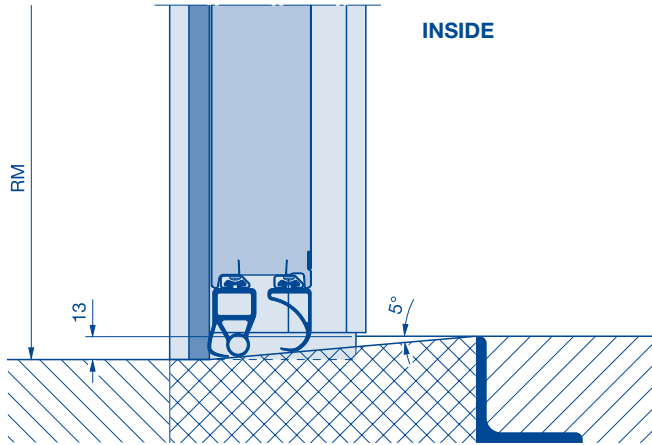
- Aluminium frame fascia panel with real glass infill E2 and G2 on request.

- STH** Min. headroom (see page 35)
- DHS** Wicket door clear passage height
- RM** Grid height
- TB** Door leaf
- TH** Door section height
- LAB** Fascia panel
- RAB** Frame fascia panel
- LF** Structural opening
- LZ** Clear frame dimension

Bottom Edge

Without wicket door / with wicket door and threshold rail

With wicket door with trip-free threshold



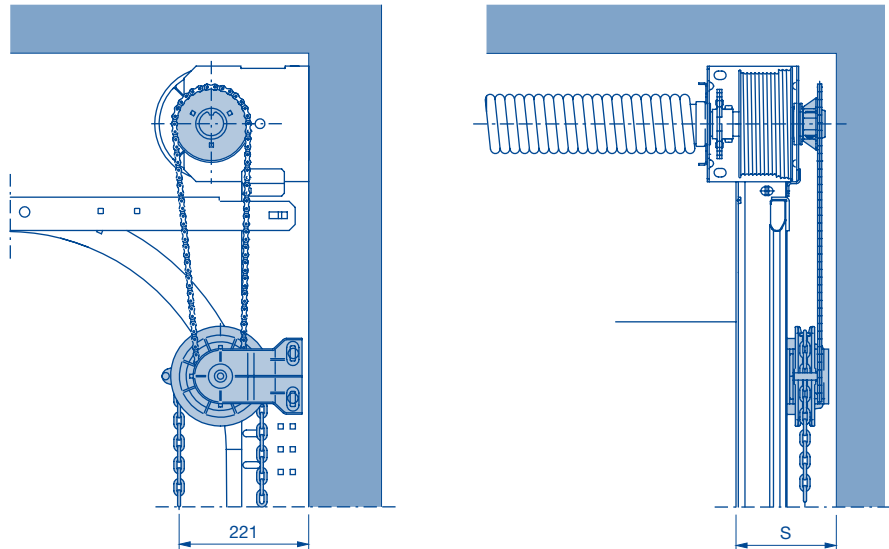
EW Drainage
RM Grid height

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



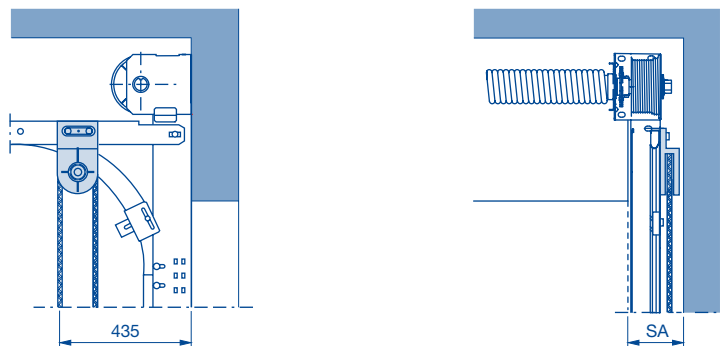
Track application	SA
N*, NA*, ND*, NH, NS*, GD, VU, WG	165
H, HA, HD, HG, HU, RD, RG	185

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

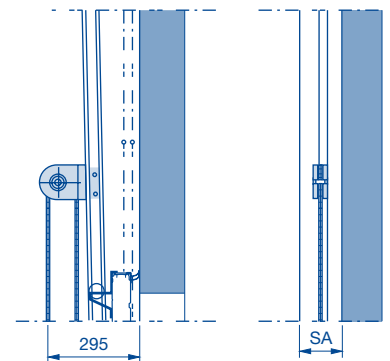
With rope or link steel chain



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

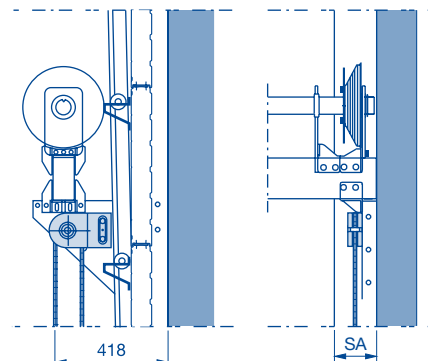
V, VA

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

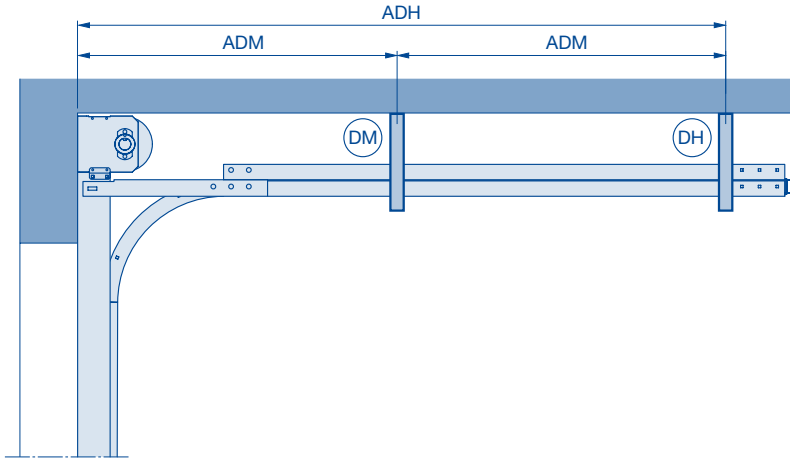
* Cannot be used with RM ≤ 3000

SA Sideroom

Ceiling Anchors

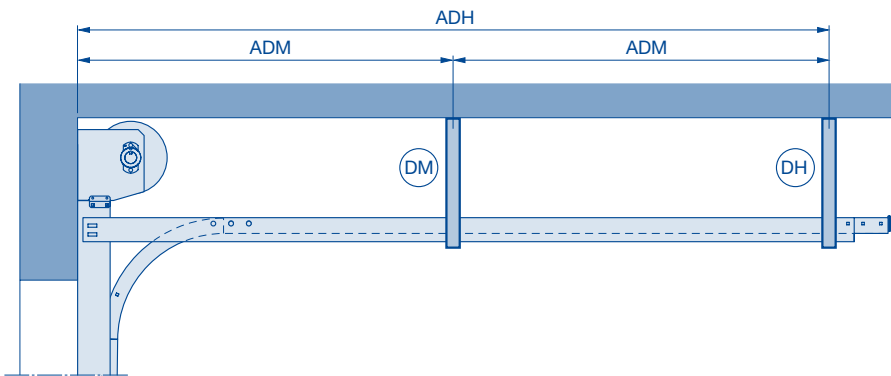
Track suspensions for all track applications except V, VA, VU and WG

Track suspensions as ceiling anchors in five lengths, standard length 469 mm.
 DH = rear ceiling anchor (see pages 35–51), door weights for roof loads (see page 35).



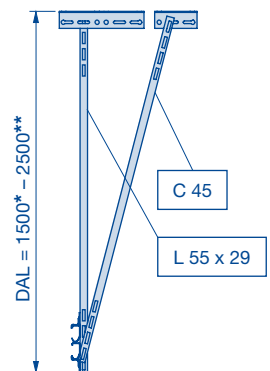
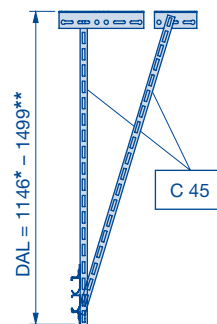
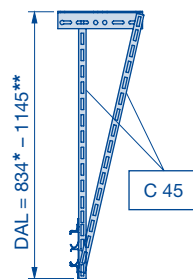
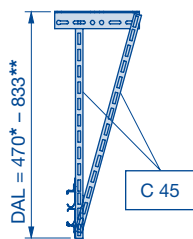
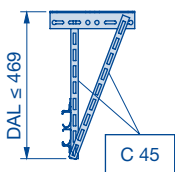
Double track (suspensions), door heights $RM \leq 5000$

Double track (suspensions), Door heights $RM \leq 5000$				
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 height $RM > 5000$

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



* Min.
 ** Max.

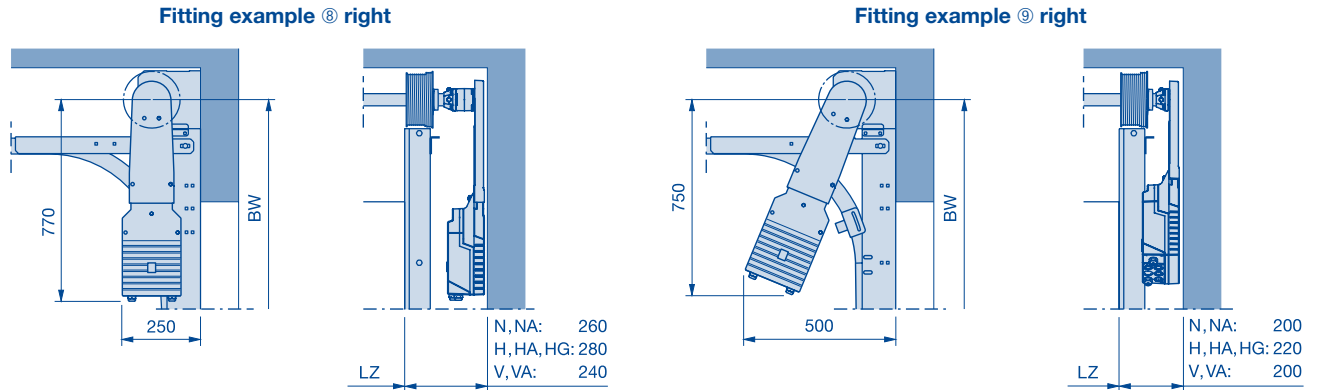
DH Rear ceiling anchor
 DM Central ceiling anchor
 DAL Ceiling anchor length

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

Shaft Operator WA 300

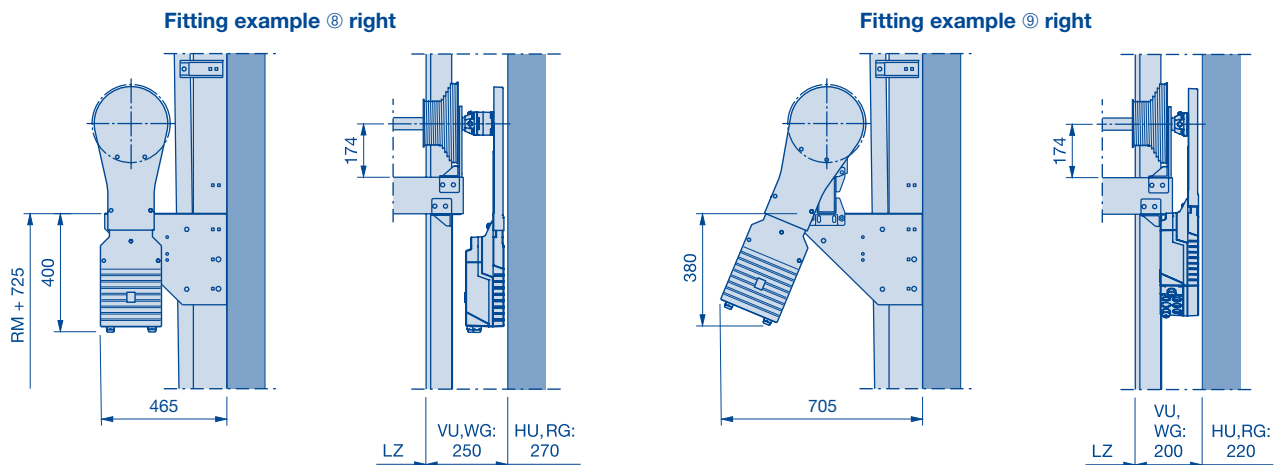
Shaft operator WA 300 for track applications N, NA, H, HA, HG, V and VA

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



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

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

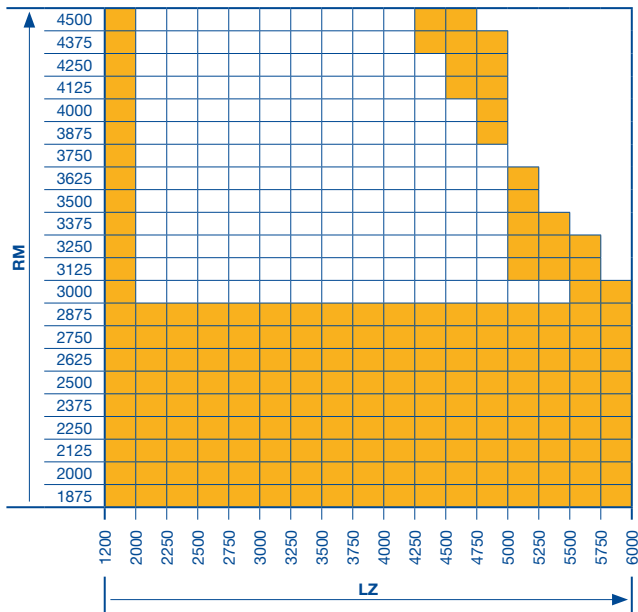


LZ Clear frame dimension
BW Position of shaft support

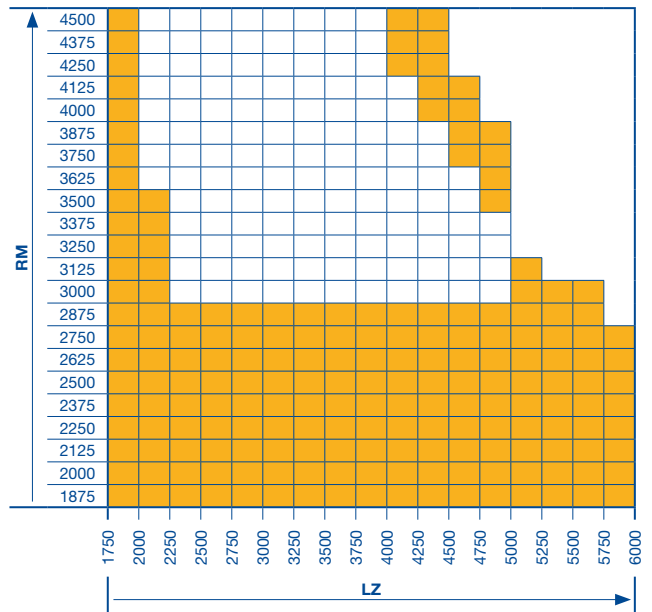
Shaft Operator WA 300

WA 300 size range for the track applications N, NA and NH

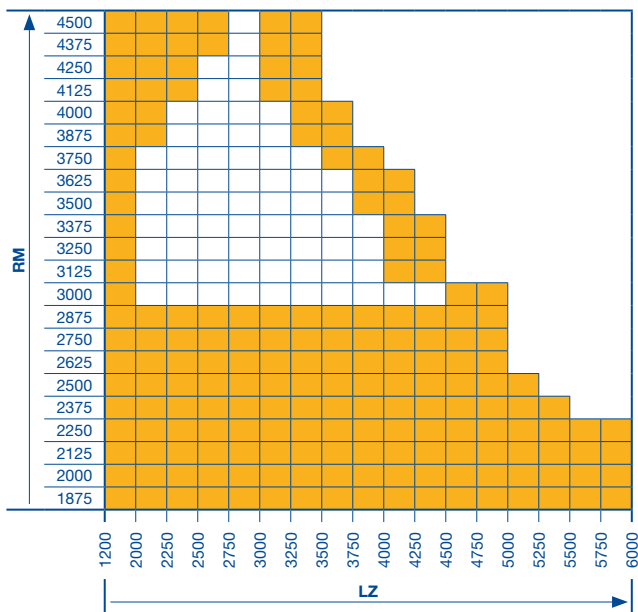
SPU 67 Thermo without wicket door



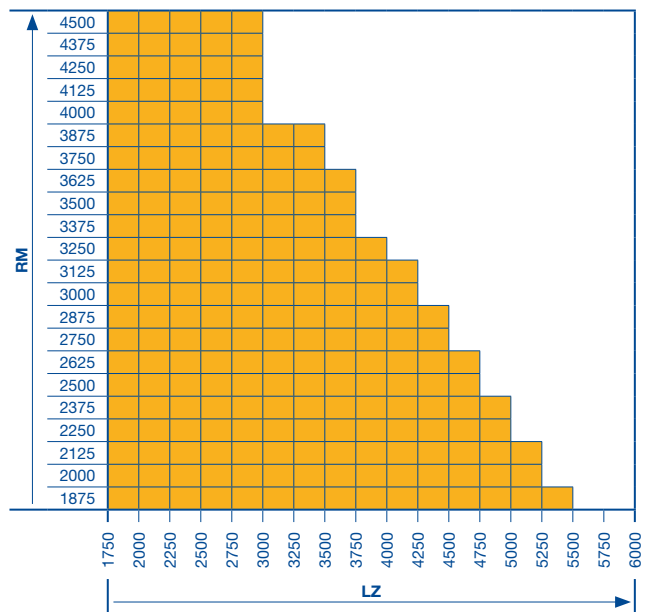
SPU 67 Thermo with wicket door



APU / ALR 67 Thermo without wicket door



APU / ALR 67 Thermo with wicket door



- WA 300 possible.
- WA 300 on request.

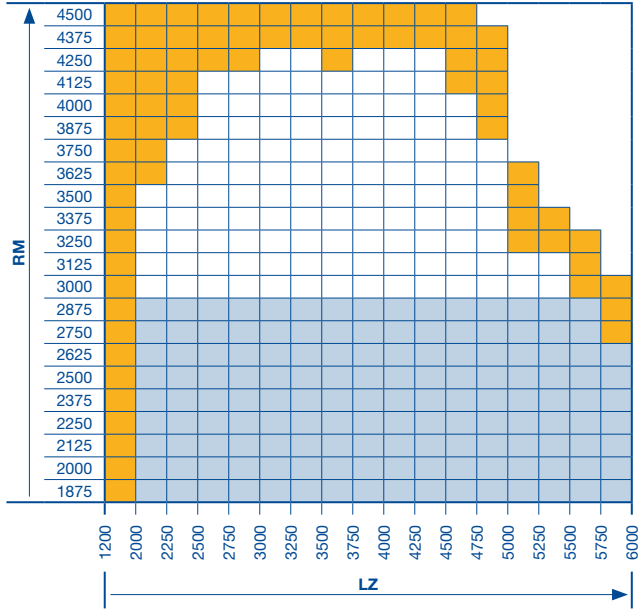
LZ Clear frame dimension
RM Grid height

Dimensions in mm

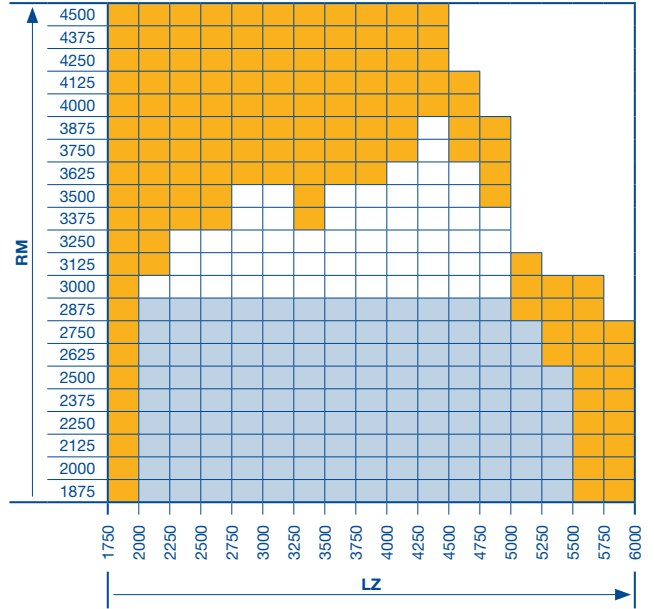
Shaft Operator WA 300

WA 300 size range for the track applications H, HA, HG, HU, RG, V, VA, VU and WG

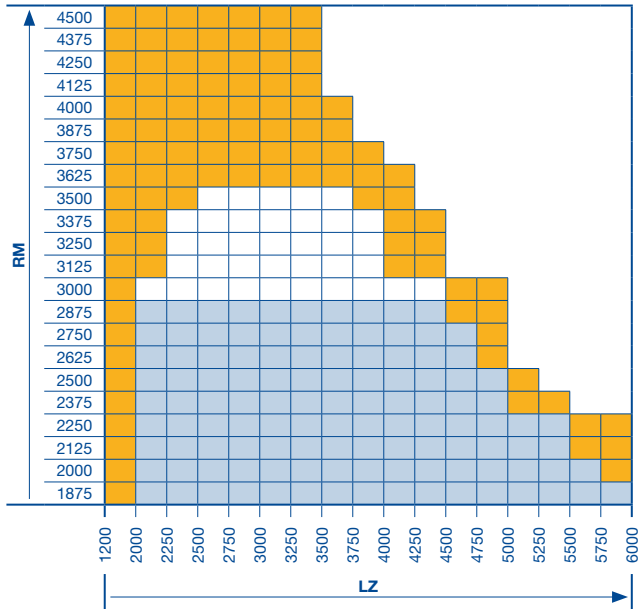
SPU 67 Thermo without wicket door



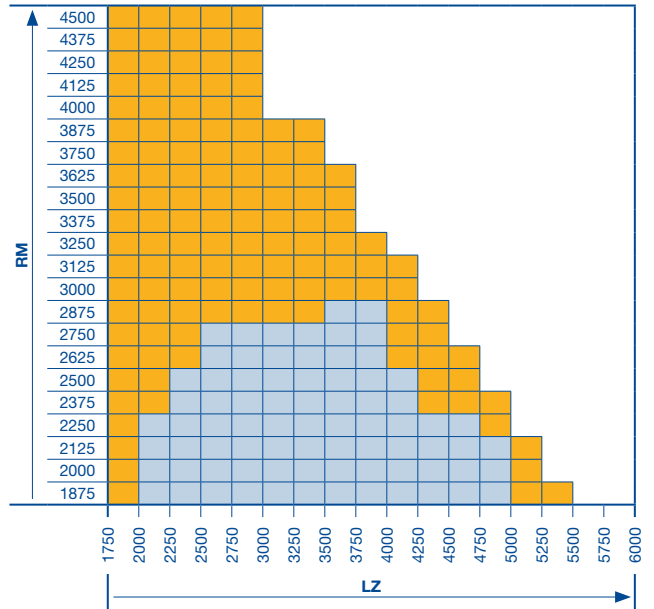
SPU 67 Thermo with wicket door



APU / ALR 67 Thermo without wicket door



APU / ALR 67 Thermo with wicket door



- WA 300 possible.
- H, HA, HG on request
- WA 300 on request.

LZ Clear frame dimension
RM Grid height

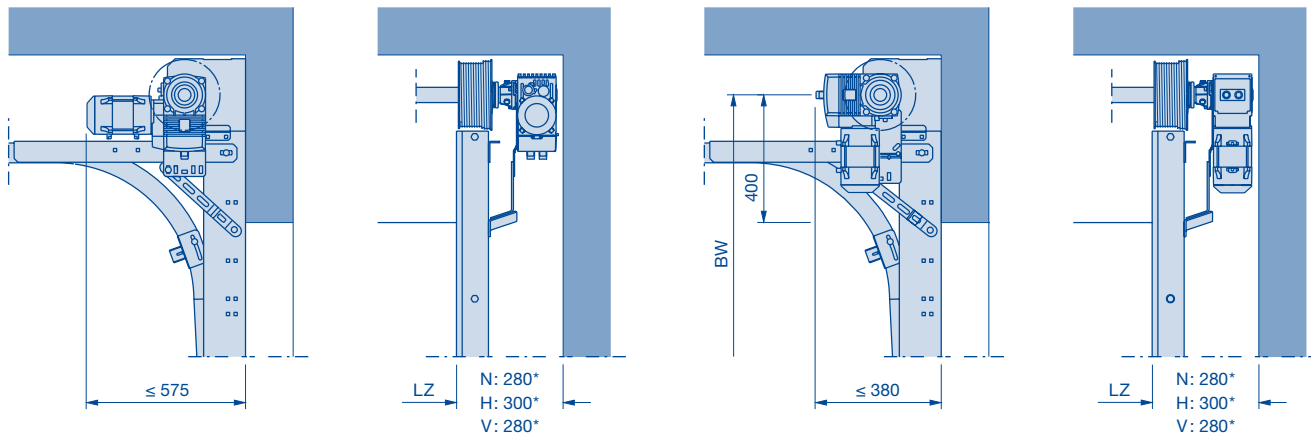
Dimensions in mm

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.

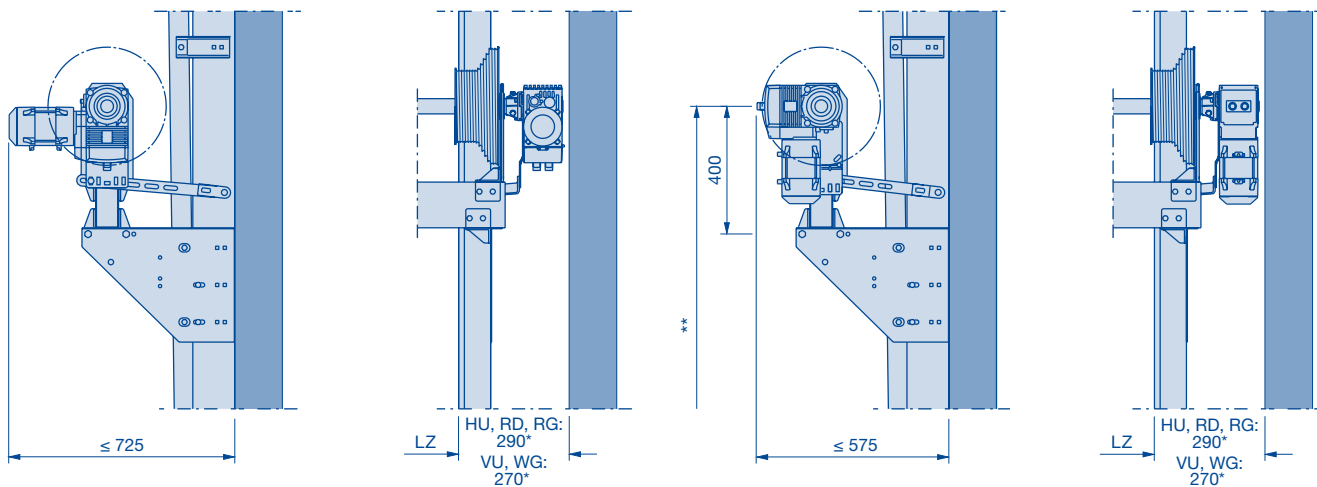


*** Note:**

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 dimension

Shaft Operator WA 400

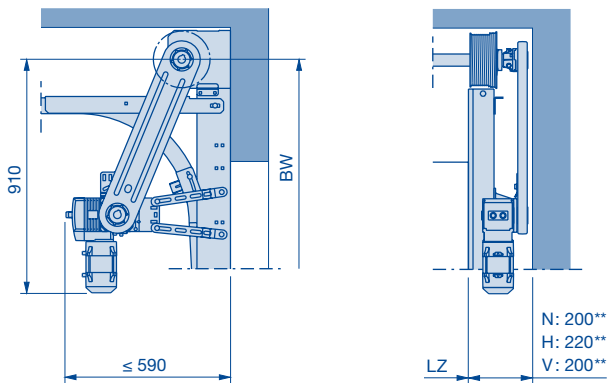
With chain box

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

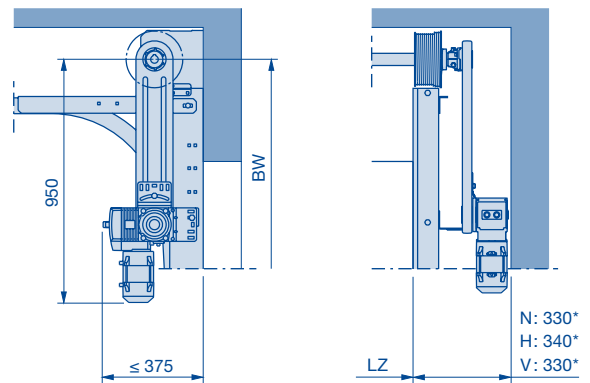
As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

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

Fitting example ⑤ right



Fitting example ⑥ right

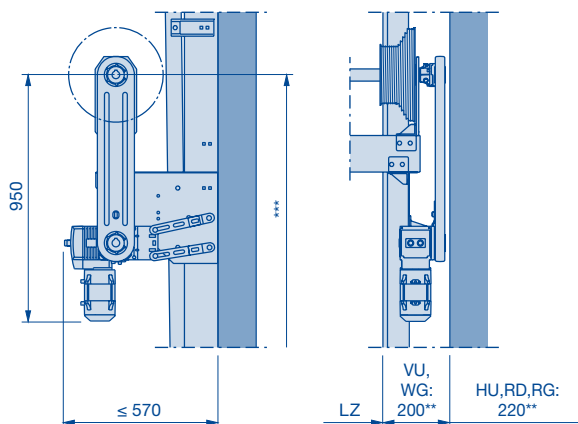


Shaft operator WA 400 for track applications HU, RD, RG, VU and WG

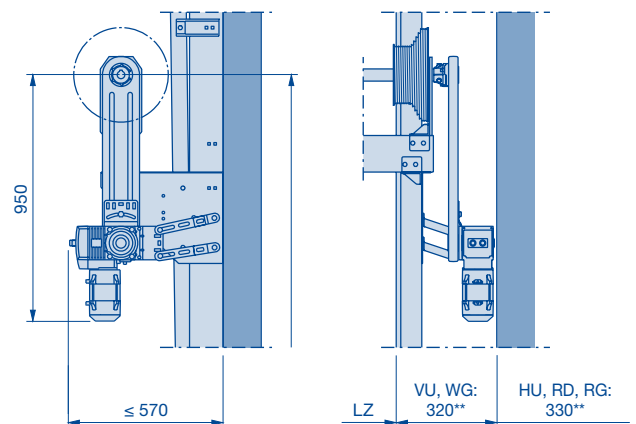
As shown in the figure, the operator can be fitted either left or right, viewed from the inside.

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

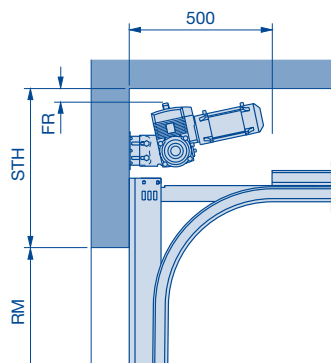
BW Position of shaft support
LZ Clear frame dimension

Shaft Operator WA 400

For central mounting

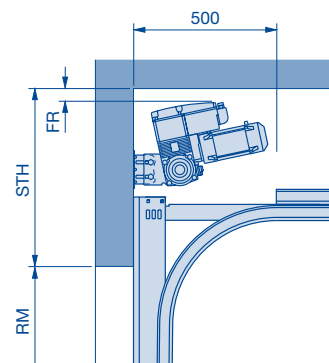
Shaft operator WA 400 for track applications N and ND

Control A / B 445, 460



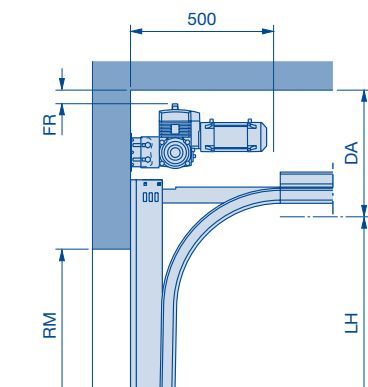
Track application	A / B 445.460		B 460 FU	
	STH min.	FR min.	STH min.	FR min.
N 1	555	45	625	45
N 2	585	50	650	45
N 3 (RM > 7000)	-	-	710 (810)	45
ND 1	555	65	585	48
ND 2	585	75	605	48
ND 3 (RM > 7000)	-	-	710 (810)	48

Control B 460 FU



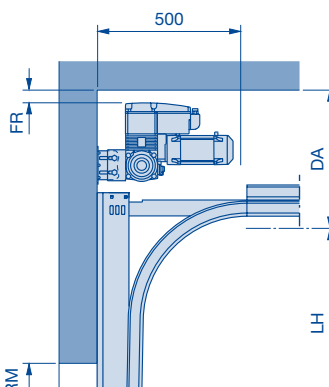
Shaft operator WA 400 for the track applications NH and GD

Control A / B 445, 460



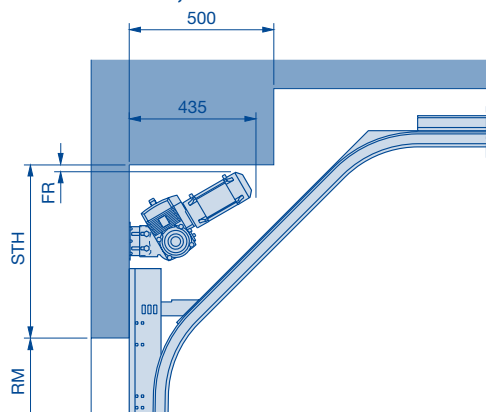
Track application	A / B 445.460		B 460 FU	
	Min. DA	FR min.	Min. DA	FR min.
NH 1/GD 1	415	50	480	45
NH 2/GD 2	440	50	485	45
NH 3	-	-	565	45

Control B 460 FU

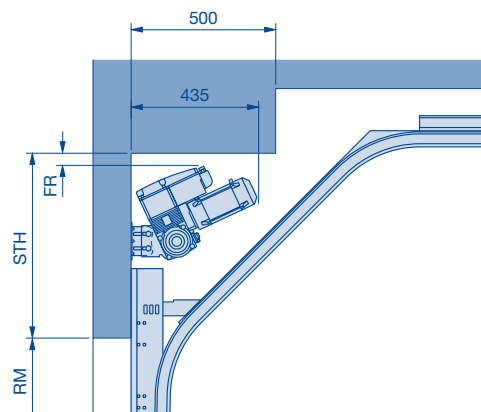


Shaft operator WA 400 for track application NS

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

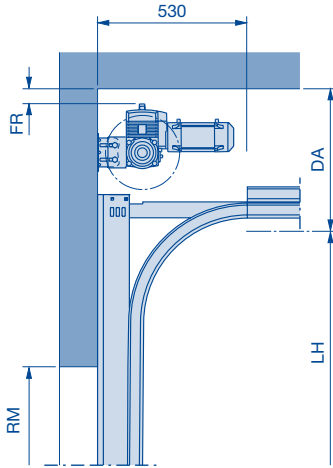
LH Track height
FR Clearance ceiling / shaft operator

Shaft Operator WA 400

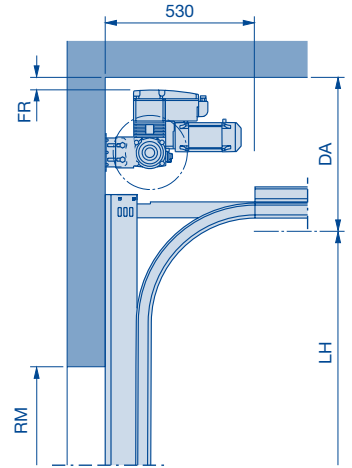
For central mounting

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

Control A / B 445, 460



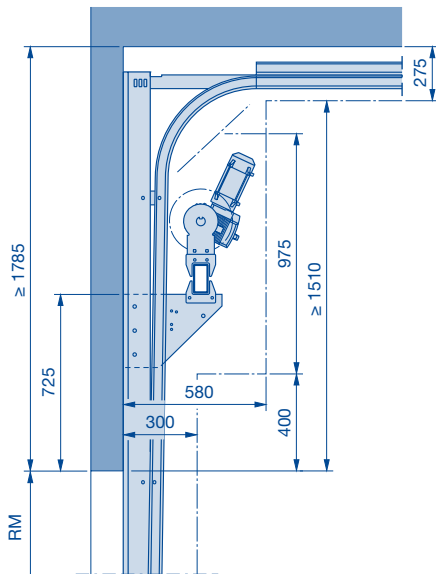
Control B 460 FU



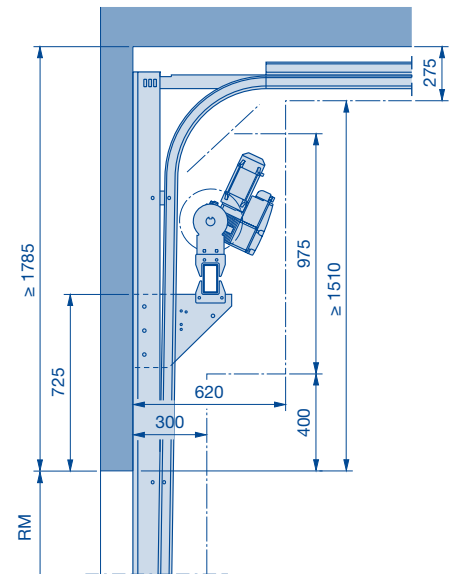
Track application	A / B 445.460		B 460 FU	
	Min. DA	FR min.	Min. DA	FR min.
H 4, HG 4	500	55	540	45
H 5, HG 5	500	55	540	45
H 8	-	-	565	45
HD	On request			

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	FR	Clearance ceiling / shaft operator
DA	Distance to ceiling		
LH	Track height		

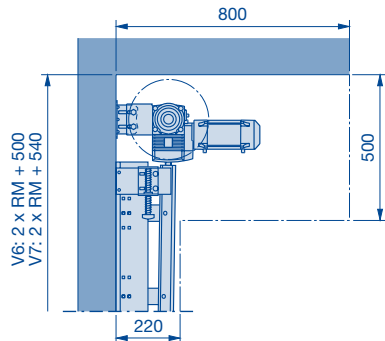
Shaft Operator WA 400

For central mounting

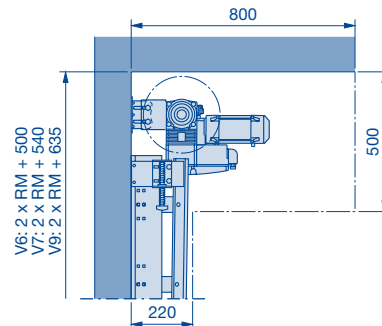
Chain Drive Operator ITO 400

Shaft operator WA 400 for track application V

Control A / B 445, 460

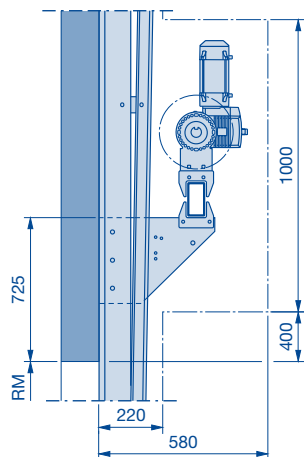


Control B 460 FU

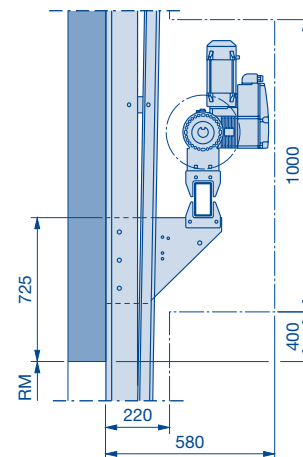


Shaft operator WA 400 for track applications VU and WG

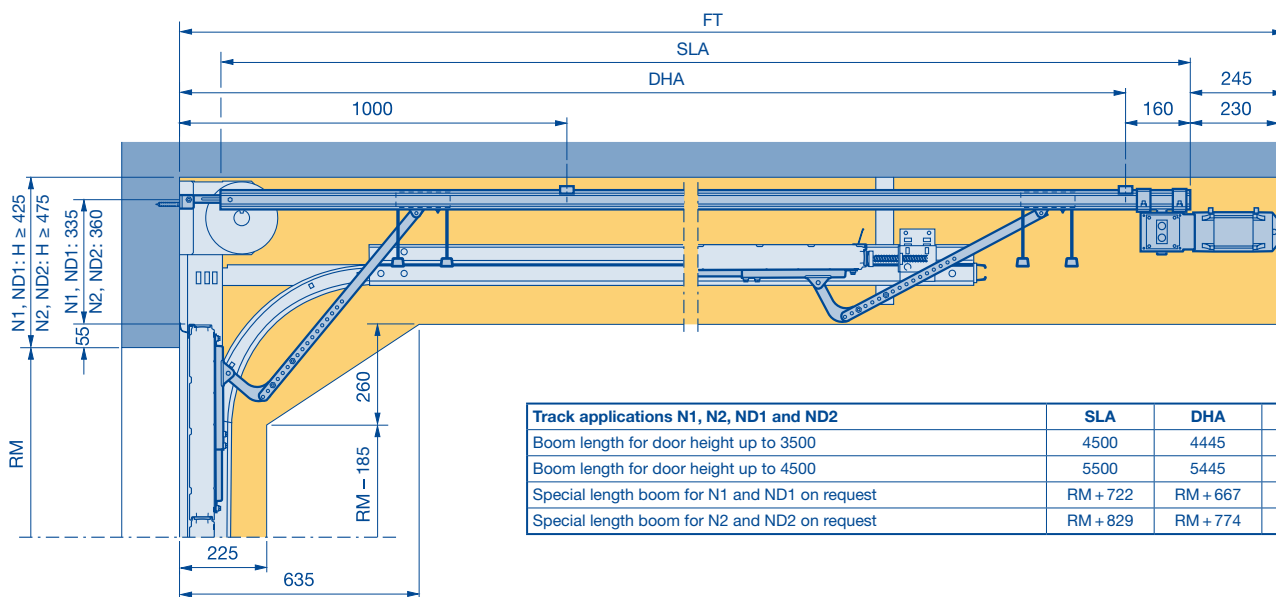
Control A / B 445, 460



Control B 460 FU



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



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

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.)

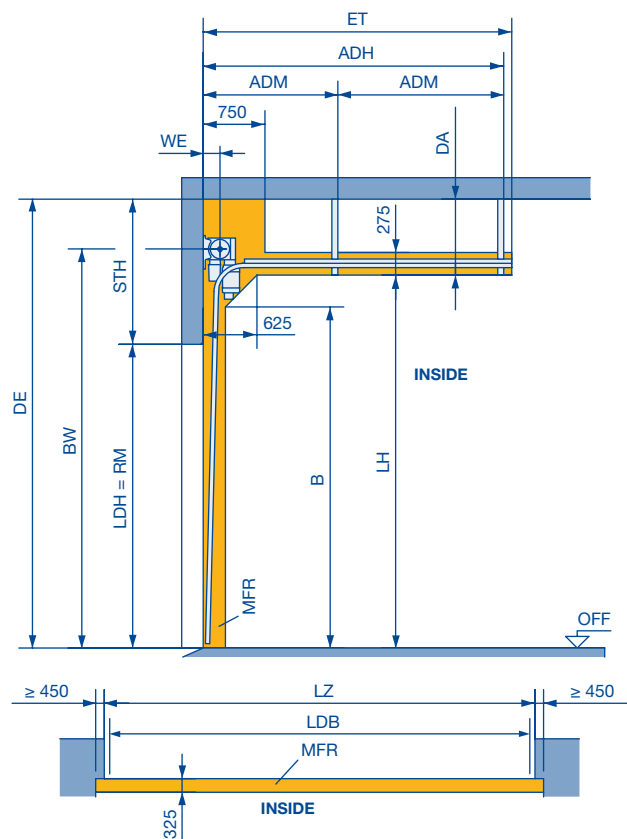
Fitting	WA 300 S4		WA 400													
	Integrated / external control 360		Control 445 and 460								Control B 460 FU					
	Max. speed in mm/s, open/close [5]	Max. speed in mm/s, open/close [6]	Frame-mounted operator				Chain box operator				Frame-mounted operator [1]	Chain box operator [1]	Without 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	Optosensors							
			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
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°	-	-	30	190	30	190	30	190	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
ND2, ≤30°	-	-	24	210	30	265	24	210	30	265	Yes	Yes	300/200	450/200	300/300	450/300 (450)
ND1, >30°	-	-	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	-	-	24	150	30	190	24	150	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
NS2	-	-	19	170	30	265	19	170	30	265	Yes	Yes	300/200	450/200	300/300	450/300 (450)
GD1	-	-	24	150	30	190	24	150	30	190	Yes	Yes	300/200	375/200	300/300	375/300 (375)
GD2	-	-	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	-	-	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
HD5	-	-	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	-	-	19/16	180	30/24	290	19/16	180	30/24	290	Yes	Yes	300/200	450/200	300/300	450/300 (450)
RD5	-	-	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

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 52

LDH	Clear passage height
RM	Grid height
LH	Track height = ceiling height - 740 LH max. = 2 × RM - 815 (LH max. ≤ 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 to central ceiling anchor (see page 67)
WE	Shaft centre from lintel

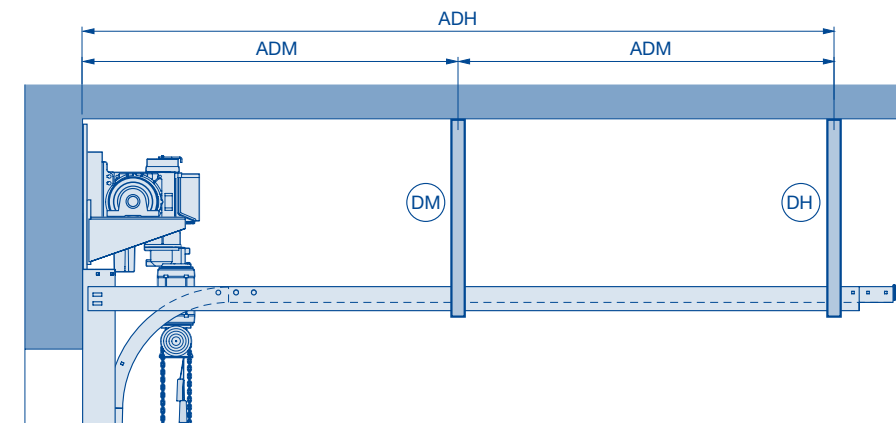
WE	RM	Cable drum
145	≤ 6000	Ø 250
205	> 6000	Ø 355

STH	Min. headroom = 1200
DA	Min. distance to ceiling H 10 + H 11 = 740
DE	Ceiling height
LZ	Clear frame dimension
LDB	Clear passage width with ThermoFrame (see page 52)
MFR	Space for fitting the door
B	Start of double radius, LH - 325

Ceiling Anchors

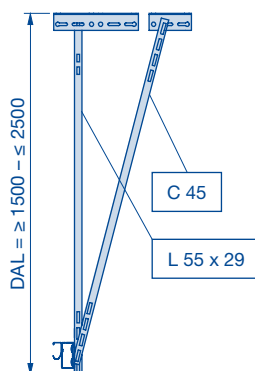
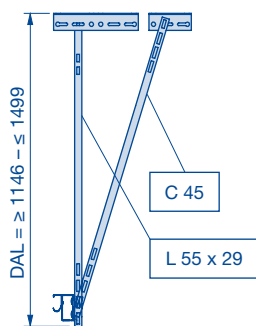
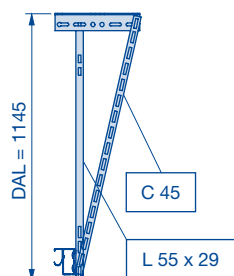
Track suspensions for track application H with direct drive operator

Track suspensions as ceiling anchors in five lengths, standard length 1145 mm.
 DH = rear ceiling anchor (see page 66), door weights for roof loads (see page 66).



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

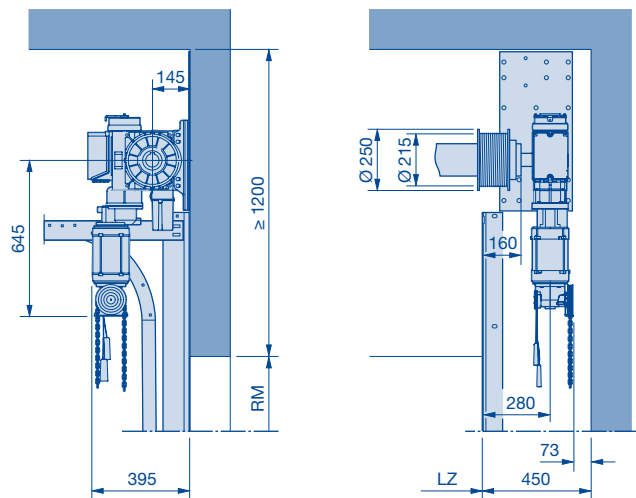
LZ Clear frame dimension
DAL Ceiling anchor length

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

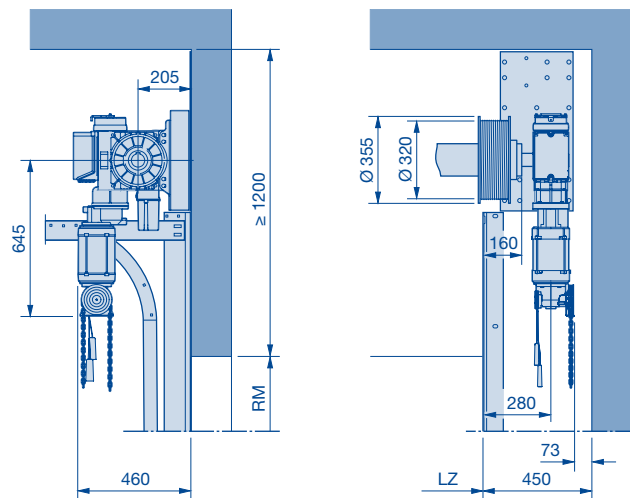
Direct Drive Operators S75 and S140

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 dimension
RM Grid height


Infill Overview

Determination of the Roof Slope

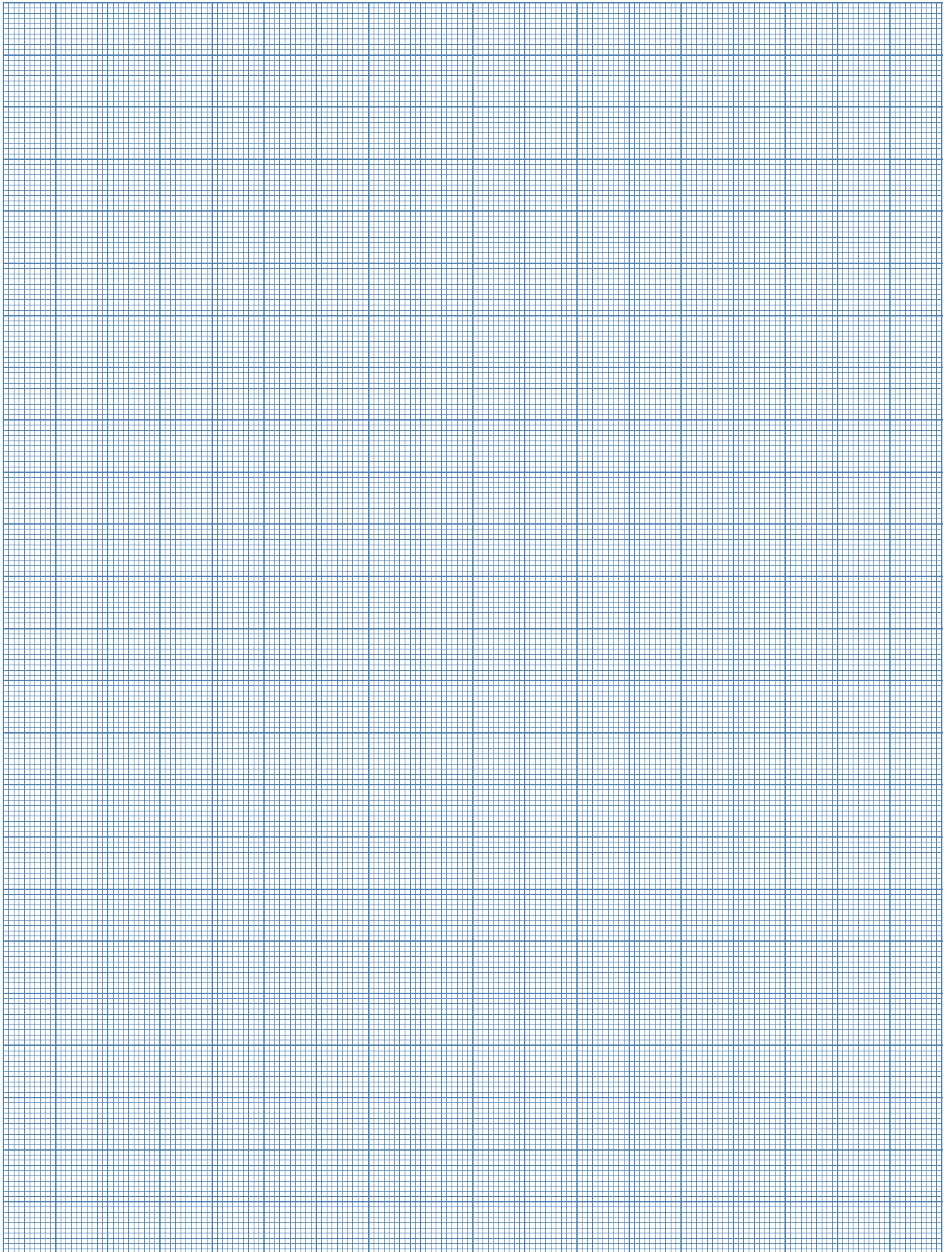
Infill overview	SPU 67 Thermo	APU 67 Thermo	ALR 67 Thermo	ALR 67 Thermo Glazing
Infill type	Abbreviation			
PU infill, 51 mm, with Stucco-textured aluminium sheet cover on both sides	–	FU	FU	–
PU infill, 51 mm with smooth, anodised aluminium sheet cover on both sides	–	XU	XU	–
Synthetic triple pane, clear, 51 mm, $U_g = 1.8 \text{ W}/(\text{m}^2\cdot\text{K})$	S3	S3	S3	–
Synthetic triple pane, crystal structure, 51 mm, $U_g = 1.6 \text{ W}/(\text{m}^2\cdot\text{K})$	U3	U3	U3	–
Synthetic triple pane, grey tinted, 51 mm, $U_g = 1.6 \text{ W}/(\text{m}^2\cdot\text{K})$	A3	A3	A3	–
Synthetic triple pane, brown tinted, 51 mm, $U_g = 1.6 \text{ W}/(\text{m}^2\cdot\text{K})$	B3	B3	B3	–
Synthetic triple pane, white tinted (opal), 51 mm, $U_g = 1.6 \text{ W}/(\text{m}^2\cdot\text{K})$	M3	M3	M3	–
Synthetic quadruple pane, clear, 51 mm, $U_g = 1.3 \text{ W}/(\text{m}^2\cdot\text{K})$	S4	S4	S4	–
Synthetic quadruple pane, crystal structure, 51 mm, $U_g = 1.3 \text{ W}/(\text{m}^2\cdot\text{K})$	U4	U4	U4	–
Synthetic quadruple pane, grey tinted, 51 mm, $U_g = 1.3 \text{ W}/(\text{m}^2\cdot\text{K})$	A4	A4	A4	–
Synthetic quadruple pane, brown tinted, 51 mm, $U_g = 1.3 \text{ W}/(\text{m}^2\cdot\text{K})$	B4	B4	B4	–
Synthetic quadruple pane, white tinted (opal), 51 mm, $U_g = 1.3 \text{ W}/(\text{m}^2\cdot\text{K})$	M4	M4	M4	–
Double pane made of single-pane safety glass, 26 mm, $U_g = 2.6 \text{ W}/(\text{m}^2\cdot\text{K})$ [1]	E2	E2	E2	E2
Climatic double pane made of single-pane safety glass, 26 mm, $U_g = 1.1 \text{ W}/(\text{m}^2\cdot\text{K})$ [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, and not in conjunction with wicket door

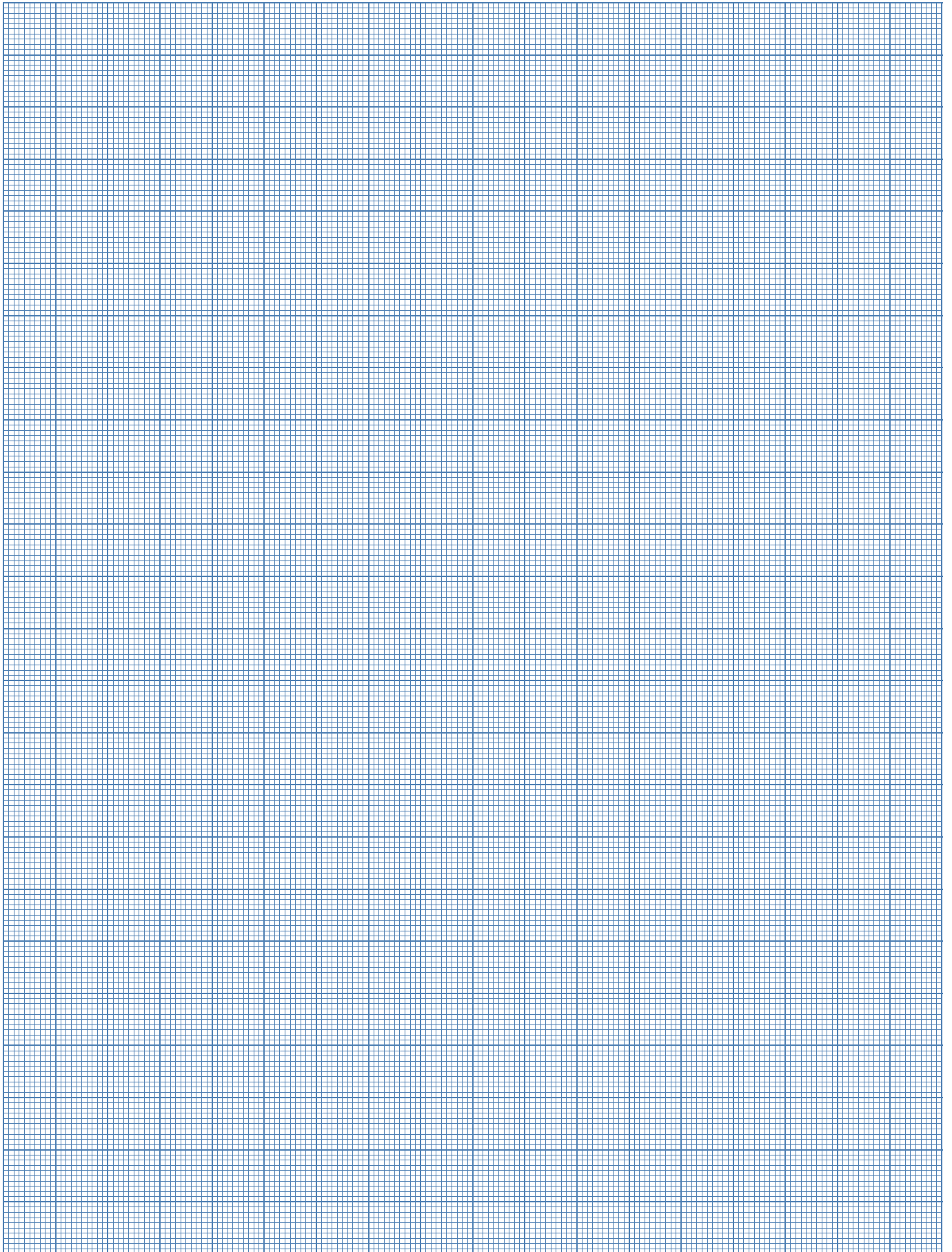
[2] On request; infill weight and thickness must be specified (anodised glazing bead required)

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

Notes



Notes



Hörmann: Quality without Compromise



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Hörmann KG Ichttershausen, Germany



Hörmann KG Werne, Germany



Hörmann Genk NV, Belgium



Hörmann Alkmaar B.V., Netherlands



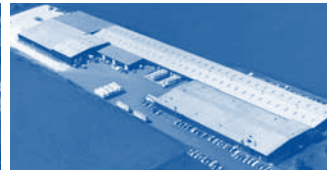
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