

# Product Passport

Door system in accordance to EN 14351-1



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System	<b>LK78H RC3 doors</b>
Product line	Thermally insulated, burglar resistance inward and outward opening door
Materials	Aluminium: EN-AW 6063 T5 Thermal breaks: polyamide Gaskets: EPDM
Surface treatment	Anodizing Powder coating
Glass	P5A, thickness 40..52 mm
Infill panel	thickness 57..61 mm
Frame depth	78 mm
Frame width	30..150 mm

Product standard:

EN 14351-1:2006 + A2:2016

Test reports:

VTT-S-01642-13  
VTT-S-01643-13  
VTT-S-04200-13  
VTT-S-04201-13  
VTT-S-04203-13  
VTT-S-04204-13  
VTT-S-04206-13  
VTT-S-04207-13  
VTT-S-05511-13  
13-001564-PR02  
17-000651-PR01  
17-000651-PR02  
17-000651-PR03  
17-000651-PR04

## Properties/ Class \*)

Resistance to fire	Smoke leakage (S)	Self-closing (C)	Resistance to wind load	Watertightness
npd	npd	npd	<b>C3</b>	<b>9A</b>
Dangerous substances	Impact resistance	Load-bearing capacity of safety devices	Height **)	Ability to release
npd	npd	npd	Frame height: 1840 .. 2530mm Frame width: 880 .. 1210mm	npd
Acoustic performance $R_w$ (C; $C_{tr}$ ) **)	Thermal transmittance ( $U_D$ ) **)	Radiation properties ( $g_D / \tau_V$ ) **)	Air permeability	Burglar resistance EN 1627 ***)
<b>41 (-1; -3) dB</b>	<b><math>\geq 0,91 \text{ W/m}^2\text{K}</math></b>		<b>4</b>	<b>RC3</b>

\*) Only tested/ calculated maximum values of the system for single leaf door

\*\*\*) Declared value according to project

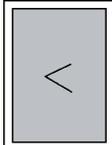
\*\*\*\*) Is not part of the CE marking. Does not belong in the standard EN 14351-1, table ZA.1.

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ref.No. for hEN-standard	<b>Name:</b>	<b>LK78H RC3 door</b>		
	<b>Description:</b>	 Thermally insulated, burglar resistance inward and outward opening door		
-	<b>Resistance to fire (E / EI)</b>	npd		
-	<b>Smoke leakage (S)</b>	npd		
-	<b>Self-closing (C)</b>	npd		
4.2	<b>Resistance to wind load <sup>1)</sup></b>	<b>C3</b> (1200 Pa, ≤1/300)		
4.5	<b>Watertightness <sup>2)</sup></b>	<b>5A</b> (outward) <b>9A</b> (inward)		
4.6	<b>Dangerous substances</b>	npd		
4.7	<b>Impact resistance</b>	npd		
4.8	<b>Load-bearing capacity of safety devices <sup>1)</sup></b>	npd		
4.9	<b>Height <sup>3)</sup></b>	Frame height: 1840 .. 2530mm Frame width: 880 .. 1210mm (EN1627 RC3)		
4.10	<b>Ability to release</b>	npd		
4.11	<b>Acoustic performance <sup>2) 3)</sup></b>	<b>R<sub>w</sub></b> 41dB	<b>R<sub>w</sub>+C</b> 40dB	<b>R<sub>w</sub>+C<sub>tr</sub></b> 38dB
4.12	<b>Thermal transmittance <sup>3) 4)</sup></b> (U <sub>D</sub> )	<b>≥ 0,91 W/m<sup>2</sup>K</b>		
4.13	<b>Radiation properties <sup>3)</sup></b> (g <sub>D</sub> / τ <sub>v</sub> )	npd		
4.14	<b>Air permeability <sup>2)</sup></b>	<b>4</b> (outwardopening.) <b>4</b> (inwardopening)		
4.23	<b>Burglar resistance <sup>5)</sup></b> <b>EN 1627</b>	<b>RC3</b>		

## HUOM!

<sup>1)</sup> Element size: ≤ 990x2100 mm

<sup>2)</sup> Element size: ≤ 3,1 m<sup>2</sup>

<sup>3)</sup> Values according to project are declared separately

<sup>4)</sup> Element size: 1230x2180mm.

<sup>5)</sup> Is not part of the CE marking. Does not belong in the standard EN 14351-1, table ZA.1.  
 Element size: 880 .. 1210 x 1840 .. 2530mm, special construction

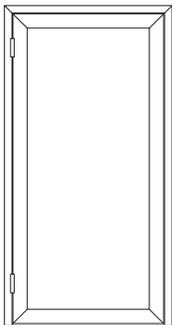
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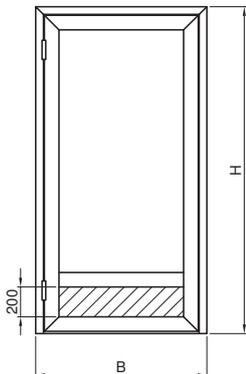
**LK78H U<sub>D</sub>-values for standard size door:**  
 (inward and outward opening doors)



Single leaf door (1230x 2180 mm)

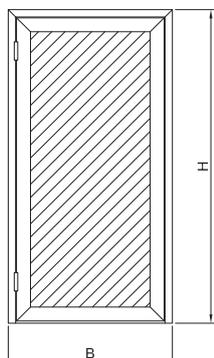
	Glass U <sub>g</sub> -value (W/m <sup>2</sup> K)					
	0,5	0,6	0,7	0,8	0,9	1,0
IGU spacer	Door U <sub>D</sub> -value (W/m <sup>2</sup> K)					
Aluminium t=0.3	1,0	1,1	1,2	1,2	1,3	1,4
Stainless steel t=0.18	0,96	1,0	1,1	1,2	1,2	1,3
TPS	0,91	0,98	1,0	1,1	1,2	1,2

Tabulated U<sub>D</sub>-values can be used for single leaf door (1230x 2180 mm) when the door size ≤ 3,6 m<sup>2</sup>  
 Specific values according to project are declared separately.



Single leaf door with transom and opaque panel (panel U-value 0,5 W/m<sup>2</sup>K)

IGU spacer		Alum. 0,3			Stainless steel 0,18			TPS		
Glass U <sub>g</sub> -value	W/m <sup>2</sup> K	0,5	0,6	0,7	0,5	0,6	0,7	0,5	0,6	0,7
B	H	Door U <sub>D</sub> -value						W/m <sup>2</sup> K		
900	2200	1,1	1,2	1,2	1,1	1,1	1,2	1,0	1,1	1,1
1000	2200	1,1	1,2	1,2	1,0	1,1	1,1	0,97	1,0	1,1
1100	2200	1,1	1,1	1,2	1,0	1,0	1,1	0,95	1,0	1,1
1200	2200	1,0	1,1	1,2	0,97	1,0	1,1	0,93	0,99	1,0



Single leaf opaque panel door (panel U-value 0,5 W/m<sup>2</sup>K)

B (mm)	H (mm)	Door U <sub>D</sub> -value (W/m <sup>2</sup> K)
900	2200	0,89
1000	2200	0,87
1100	2200	0,84
1200	2200	0,83

The thermal transmittance of the frames (U<sub>f</sub>) are defined according to standard SFS-EN ISO 10077-2:2012  
 Threshold without stainless steel cover (780134/RST)

Linear thermal transmittance ψ <sub>g</sub> of the IGU spacers used in calculations		
Aluminium (t=0.3 mm)	0,106 W/mK	according to SFS-EN ISO 10077-2
Stainless Steel (t=0.18 mm)	0,065 W/mK	BF Datasheet 01
TPS	0,042 W/mK	BF Datasheet 11

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**LK78H** Inward and outward opening doors acoustic performance:

Glazings:

- Glass-1:** 3k - 4 - 16 RST  
**Glass-2:** 3k - 13.1Phone/6/9.1Phone - 12  
**Glass-3:** 3k - 4 - 16 TPS  
**Glass-4:** 3k - 8/4/6 - 15/12 RST

Change of IGU is allowed, provided that the IGU has the same or better  $R_w$  and  $R_w + C_{tr}$

Opaque panels:

- Panel-1:** 1,5 mm aluminium sheet - 4 mm plywood - 50 mm PUR-board - 4 mm plywood  
- 1,5 mm aluminium sheet

Number of door leaves	Door type	Tested glazing   panel	$R_w$ [dB]	$R_w + C$ [dB]	$R_w + C_{tr}$ [dB]
1	Fully glazed door	Glass-1	34	33	29
1	Fully glazed door	Glass-2	41	40	38
1	Glass door with transom	Glass-1	35	33	29
1	Glass door with transom	Glass-2	40	40	38
1	Glass door with transom	Glass-3	36	34	30
1	Glass door with transom	Glass-4	38	37	34
1	Panel door with transom	Panel-1	32	30	28
1	Glass door with panel	Glass-1   Panel-1	33	32	29
1	Glass door with panel	Glass-2   Panel-1	40	39	37

Tested door sizes and maximum total areas (A) of doors:

Single leaf doors: **990x 2090 mm** **0 m<sup>2</sup> < A ≤ 3,1 m<sup>2</sup>**

- Terms:  $R_w$  Sound reduction index (the higher the  $R_w$  number, the better the sound insulation)  
 $R_w + C$  Jet aircraft noise, sounds of fast trains, industrial noise (high and mid frequency)  
 $R_w + C_{tr}$  City traffic noise, sounds of slow trains, industrial noise (low and mid frequency)