



European Technical Assessment **ETA 21/0677** of 09/08/2021

I General Part

Technical Assessment Body issuing the ETA	Eurofins Expert Services Oy
Trade name of the construction product	Lumon® Glazing Retractable Standard Lift Handle, Lumon® Glazing Retractable Standard Handle, Lumon® Glazing Retractable Strong Lift Handle, Lumon® Glazing Retractable Strong Handle, Lumon® Glazing Retractable Strong Low Threshold Handle
Product family to which the construction product belongs	Balcony and Terrace Glazing System
Manufacturer	Lumon Oy Kaitilankatu 11 FI-45130 Kouvola
Manufacturing plant	Lumon Oy Kaitilankatu 11 FI-45130 Kouvola
This European Technical Assessment contains	13 pages including an Annex which form an integral part of this assessment
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 020002-00-0404 Balcony (and Terrace) Glazing System without vertical Frames

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II Specific Part

1 Technical description of the product

The balcony and terrace glazing system consists of two horizontal aluminium profiles which are fixed to balcony's ceiling and balustrade or floor. There are normal and stronger profiles depending on loads and size of panels. There is also a version with lower Lower profile. It is called Lumon® Glazing Retractable Strong Low Threshold. Toughened glass panes are attached to the profiles through separate mechanisms which allow the panes to slide and turn.

Aluminium glazing beads are fastened to the upper and lower edges of the panes with the help of flanges which have been installed to the upper and lower edges of the pane. Fastening is secured by gluing. The upper and lower glazing beads are provided with components which enable sliding and opening of glasses. There are normal and stronger components depending on loads and size of panel. System with stronger profiles and components is called Lumon® Glazing Retractable Strong.

The first pane is opened by unlocking. The glazing can be provided with a lock. The other panes can be moved by sliding and turning. When the panes are turned, their hinges lock to the hinges of the open pane. The glazing can hence be opened completely. On Land U-balconies, glass panes can slide round +90° ... -270° corners.

Thicknesses of glass panes are 8, 10 or 12 mm depending on the glass panel size and wind load resistance requirements. Most usual panel widths are 600 - 1000 mm. The minimum width of the glass pane is 300 mm and maximum width is 1000 mm. Maximum height of the glass panes is 2877 mm. The edges and possible drillings are made according to the standard EN 12150-1. If requested, the glass panes can be delivered also as heat soaked.

The upper profile is attached to the ceiling with screw and wedges or through a telescopic profile or to the overhang with mounting brackets. The lower profile is attached with mounting brackets or through the bottom of the profile to the balustrade structure or to the floor. Fastening of the glazing system into balcony or terrace floor and roof shall be done according to the type of the surrounding construction and instructions of the manufacturer. The fastenings are not part of this ETA.

Corrosion-resistant fasteners must be used.

Rainwater is drained off by using water sills made of plastic-coated steel sheet or aluminium sheet.

A seal is used to close the gap between the glass pane and the wall. Example drawings of the glazing system are in the Annex 1.

2 Specification of the intended uses in accordance with the applicable EAD

Intended uses

The balcony glazing is used to protect balcony or terrace interior from rain, snow, wind and dirt. The glazed balcony is not warm or half warm space. It is not totally water tight or air tight.

The system can be fastened into concrete, brick, steel, aluminium or timber substrates.

The system is not intended to act as barrier against falling. In case of risk of falling, a separate barrier is needed that shall fulfil local requirements concerning safety.

Working life and durability

The provisions made in this ETA are based on an assumed working life of the balcony glazing system of 25 years¹.

Design

Glass pane thickness and pane sizes are chosen case by case based on structural design calculations made by the manufacturer who has design tables or software for the purpose. In the design, local regulations concerning wind pressure and safety shall be taken into account. This European technical assessment is based on the assumption that the design has been made correctly according to the regulations valid on the building site.

Execution of construction works

The completed building (the works) shall comply with the building regulations (regulations on the works) applicable in the Member States in which the building is to be constructed. The procedures foreseen in the Member State for demonstrating compliance with the building regulations shall also be followed by the entity held responsible for this act. An ETA for a balcony glazing system does not concern this process in any way.

¹ This means that it is expected that when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the essential requirements of the works. The indications given as to the working life of a Lumon® Glazing Retractable balcony and terrace glazing system cannot be interpreted as a guarantee given by the producer or the assessment body. They should only be regarded as a means for the specifiers to choose the appropriate criteria for balcony glazing systems in relation to the expected, economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

Table 1. Basic requirements for construction works and essential characteristics

Basic requirement and essential characteristics	Performance
BWR 3. Hygiene, health and the environment	
Ventilation and dampness	Clause 3.1
BWR 4. Safety and accessibility in use	
Resistance to wind load	Clause 3.2
Impact resistance	Clause 3.2
Properties of glass panes and other parts	Clause 3.2
<ul style="list-style-type: none">• Corrosion resistance	Clause 3.2
<ul style="list-style-type: none">• Resistance to racking	No performance assessed
<ul style="list-style-type: none">• Resistance to static torsion	No performance assessed
BWR 5. Protection against noise	
Airborne sound insulation	No performance assessed

3.1 Hygiene, health and environment, BWR 3

Ventilation and dampness

The air gaps between the glass panes ensure air permeability of the glazing, which diminish risk of dampness or condensation. Width of the air gaps between the glass panes are 2-3 mm.

3.2 Safety and accessibility in use, BWR 4

Resistance to wind load

Glass pane thickness and pane size are chosen case by case based on structural design calculations made by the manufacturer. Results of the tested samples are given below.

Table 2. Dimensions and resistance to wind load of the tested¹ glazing systems

	Max. height of the pane	Width of glass units	Thickness of glass	max test pressure² inward (+)	max test pressure² outward (-)	Pressure P3³ estimated	Pressure P1⁴ estimated	Relative deflection⁵ estimated
	mm	mm	mm	Pa	Pa	Pa	Pa	mm
Lumon® Glazing Retractable Standard Lift Handle	2063	1000	6	700	700	700	400	0,04
	2363	1000	8	1000	900	900	600	0,04
	1663	1000	10	3500	4300	3500	2300	0,04
	2863	665	10	1200	1200	1200	800	0,04
Lumon® Glazing Retractable Standard Handle	2063	1000	6	800	700	700	400	0,04
	2363	1000	8	900	1100	900	600	0,03
	1663	1000	10	3100	4100	3100	2000	0,03
	2863	665	10	1100	1200	1100	700	0,03
Lumon® Glazing Retractable Strong Lift Handle	2360	1000	8	1200	1200	1200	800	0,05
	2860	1000	10	1200	1100	1100	700	0,03
	1660	1000	12	4100	5300	4100	2700	0,03
	2860	800	12	1700	1700	1100	1700	0,04
Lumon® Glazing Retractable Strong Handle	2360	1000	8	1100	1200	1100	700	0,04
	2860	1000	10	1200	1200	1200	800	0,04
	1660	1000	12	4000	5000	4000	2600	0,03
	2860	800	12	1800	1800	1800	1200	0,04
Lumon® Glazing Retractable Strong Low Threshold Handle	2377	665	8	1300	1300	1300	800	0,04
	2877	665	10	1200	1100	1100	700	0,03
	1677	665	12	5000	4800	4800	3200	0,03
	2877	665	12	1700	1700	1700	1100	0,03

¹ The tests were carried out by ift Rosenheim. The method described in EN 12211 was modified and for example the dynamic test phase using P2 was not performed.

² Maximum pressure value without damage inward (+) and outward (-) was defined by testing.

³ Pressure value P3 was estimated to be the smaller value of max pressure without damage.

⁴ Pressure value P1 was calculated to be P3/1,5 and rounded down to the nearest hundred.

⁵ For calculating the relative deflection the higher deflection corresponding the P1 was chosen from test records.

Impact resistance

Classification of the impact resistance of Lumon® Glazing Retractable balcony and terrace glazing system. Dimensions of the glass pane in all tests were width x height: 876 mm x 1938 mm.

Table 3. Impact resistance of Lumon® Glazing Retractable

	Thickness of glass pane mm	Drop height mm	Class according to EN 13049
Lumon® Glazing Retractable Standard Lift Handle	8	450	3
	10	450	3
Lumon® Glazing Retractable Standard Handle	8	200	1
	10	450	3
Lumon® Glazing Retractable Strong Lift Handle	8	450	3
	10	450	3
	12	900	4
Lumon® Glazing Retractable Strong Handle	8	200	1
	10	450	3
	12	450	3
Lumon® Glazing Retractable Strong Low Threshold Handle without lock in the middle	8	200	1
	10	450	3
	12	450	3
Lumon® Glazing Retractable Strong Low Threshold Handle with lock in the middle	8	200	1
	10	200	1
	12	200	1

Properties of glass panes and other parts

UV-radiation resistance

Changes of dimensions are non-existent or relatively small as well as the changes of weight. Plastic parts showed light changes to colour, which does not affect the functionality of the components.

Corrosion resistance

The metallic components have at least moderate corrosion resistance in mild environments.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

For the products covered by this ETA the applicable European legal act is: Decision 96/580/EC

The system to be applied is: 3.

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD.

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Eurofins Expert Services Oy.

Issued in Espoo on August 9, 2021
by Eurofins Expert Services Oy

Katja Vahtikari
Manager, Certification & Inspection

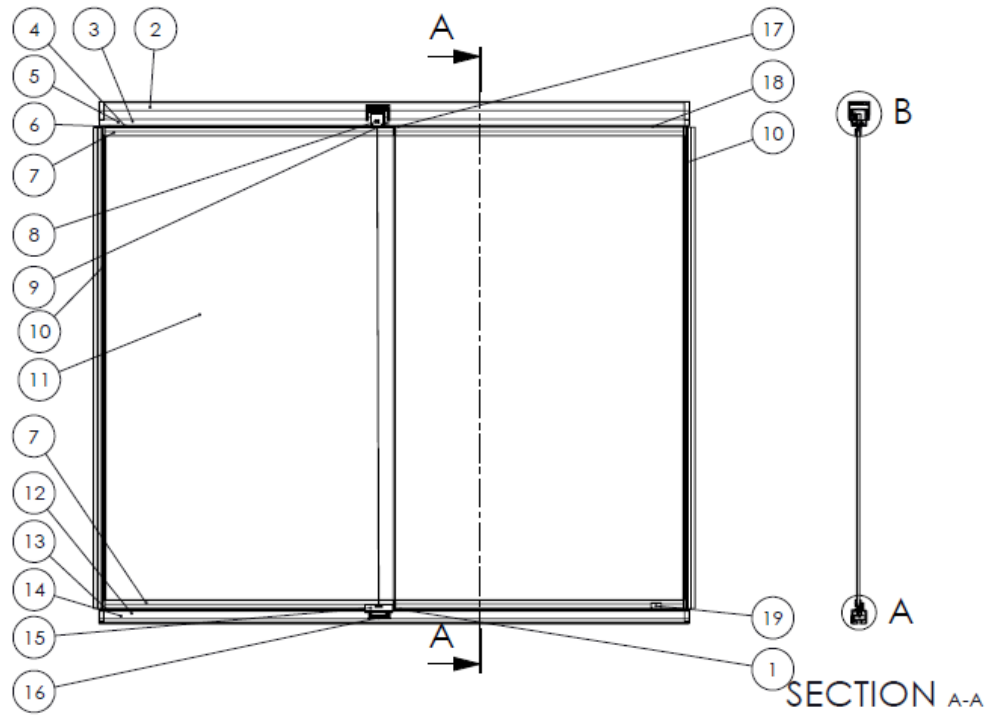
Saija Korpjaakko
Expert, Product Certification

ANNEX 1

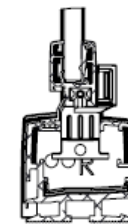
Main components and Example Drawings

Table 3. Main components of the balcony glazing system

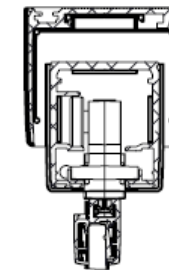
Component	Specification	Remarks	
Aluminium : upper and lower profiles, telescope profiles and glazing beads, extension profiles (EN AW-6063 T6)	EN 10204	Certificate of compliance with the order "2.1"	
<ul style="list-style-type: none"> • polyester powder coated or • anodised 	EN 573-3		
	EN 755-2		
Glass	EN 572-2	Certificate of compliance with the order Thermally toughened soda lime silicate glass Heat soaked if requested.	
<ul style="list-style-type: none"> • thermally toughened float glass 	EN 12150-1		
Hinges and sliding parts: Polyamide		Property data sheets by the raw material producer	
Lift Handle, Handle: metallic / polyamide other plastic parts		Property data sheets by the raw material producer	
<ul style="list-style-type: none"> • Follower • Upper and lower chamber, polyamide • Latches: metallic / polyamide • Rail guide, polyamide • Additional locking component LGR: polyamide 			
Seals			Can be changed
<ul style="list-style-type: none"> • Silicone / PVC / TPE / PP 			



	Item number	Name	
1	50240002	Lower hinge LGR	Plastic
2	11222206	Telescopic profile L5/LGR	Aluminium
3	11241205	Upper profile LGR	Aluminium
4	53240020	Additional locking component LGR	Plastic
5	53240015	Upper chamber 6 LGR	Plastic
6	50240007	Upper rail guide R LGR	Plastic
7	11245232 11245233 11255234	Glazing bead 6mm LGR Glazing bead 8mm LGR Glazing bead 10mm LGR	Aluminium
8	50240008	Upper latch LGR	Plastic
9	53240021	Follower L LGR	Plastic
10	54042024	Edge seal 30mm	Silicon
11		Toughened glass 6mm Toughened glass 8mm Toughened glass 10mm	Glass
12	11243001	Lower profile LGR	Aluminium
13	50240001	Lower start hinge LGR	Plastic
14	50240012	Lower chamber 6 LGR	Plastic
15	50240009	Lower latch LGR	Plastic / Aluminium
16	53240013	Lower hole frame LGR	Plastic
17	50240004	Upper hinge L LGR	Plastic
18	50240006	Upper rail guide L LGR	Plastic
19	50240003	Lower rail guide LGR	Plastic

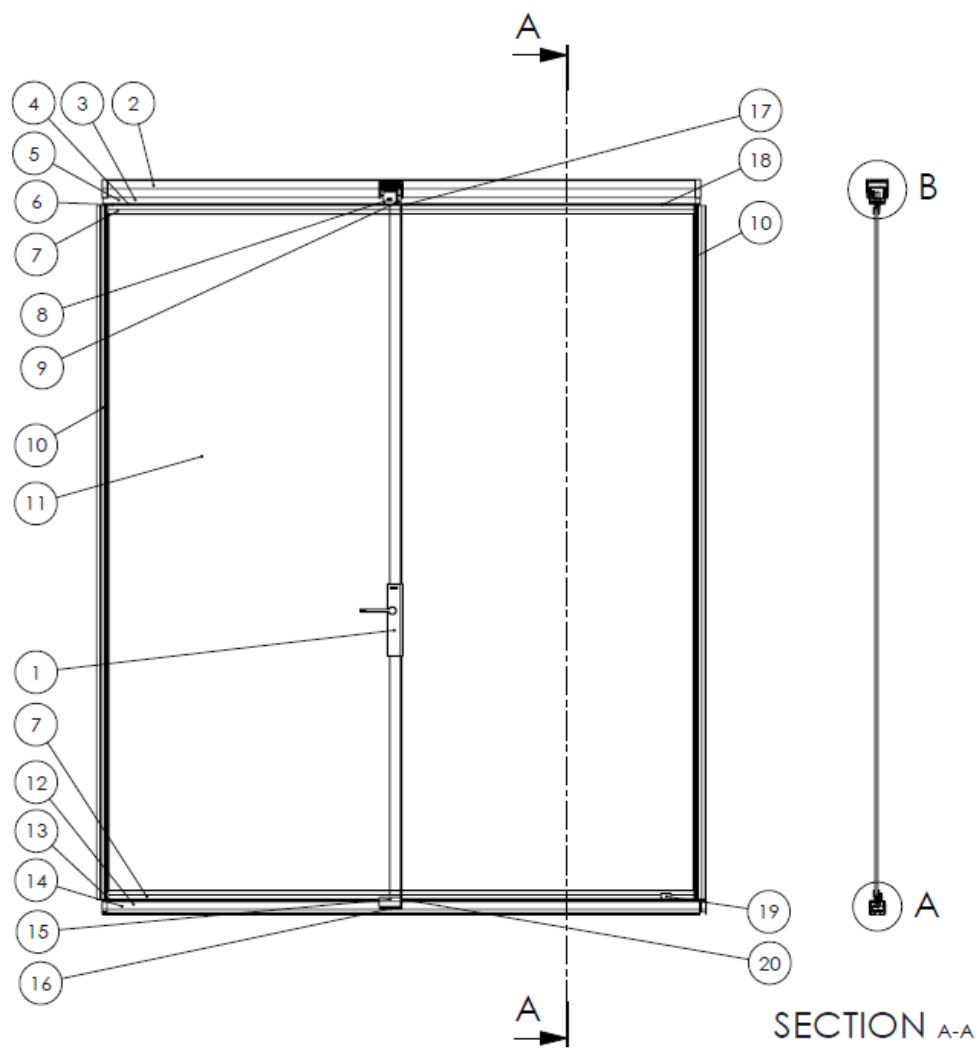


DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 2

Figure 1. Example drawing of Lumon® Glazing Retractable Standard Lift Handle



Item number	Name	
1	50250008	Middle handle L LGR Aluminium
2	11222206	Telescopic profile L5/LGR Aluminium
3	11241205	Upper profile LGR Aluminium
4	53240020	Additional locking component LGR Plastic
5	53240015	Upper chamber 6 LGR Plastic
6	50240007	Upper rail guide R LGR Plastic
7	11245232 11245233 11255234	Glazing bead 6mm LGR Glazing bead 8mm LGR Glazing bead 10mm LGR Aluminium
8	50240008	Upper latch LGR Plastic
9	53240021	Follower L LGR Plastic
10	54042024	Edge seal 30mm Silicon
11		Toughened glass 6mm Toughened glass 8mm Toughened glass 10mm Glass
12	11243001	Lower profile LGR Aluminium
13	50240001	Lower start hinge LGR Plastic
14	50240012	Lower chamber 6 LGR Plastic
15	50240009	Lower latch LGR Plastic
16	53240013	Lower hole frame LGR Plastic
17	50240004	Upper hinge L LGR Plastic
18	50240006	Upper rail guide L LGR Plastic
19	50240003	Lower rail guide LGR Plastic
20	50240002	Lower hinge LGR Plastic

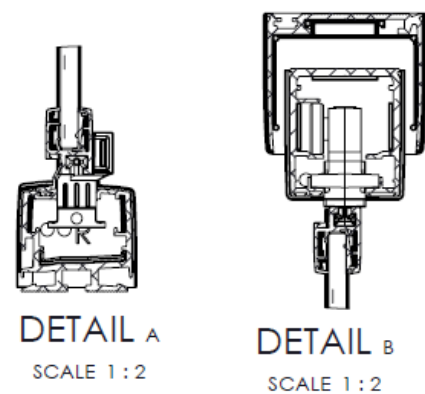
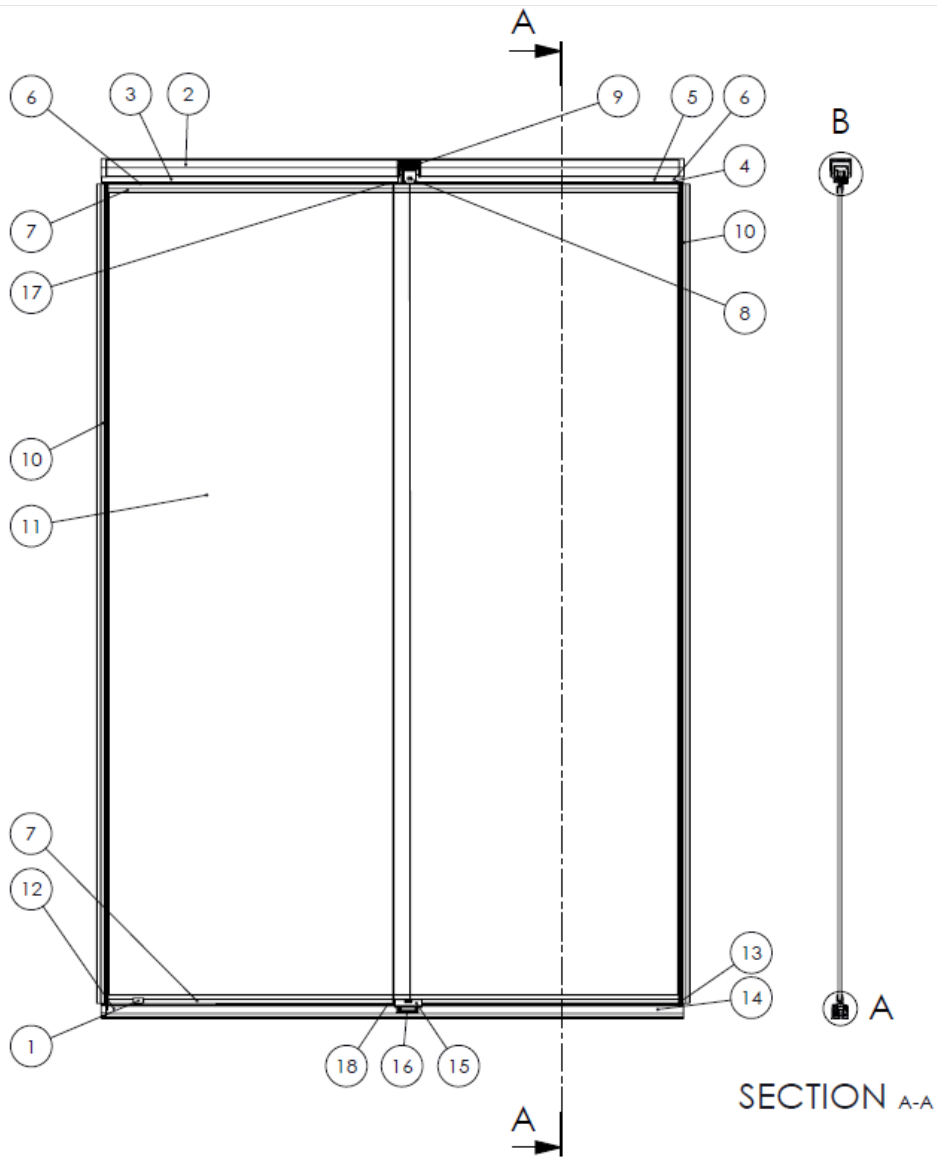
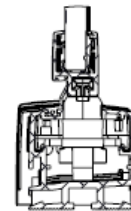


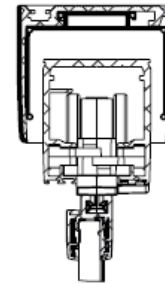
Figure 2. Example drawing of Lumon® Glazing Retractable Middle Handle



Item number	Name		
1	50250003	Lower rail guide strong LG	Plastic
2	11222206	Telescopic profile L5/LGR	Aluminium
3	11251205	Upper profile strong LGR	Aluminium
4	53240020	Additional locking component LGR	Plastic
5	53240015	Upper chamber 6 LGR	Plastic
6	50240005	Upper rail guide strong LGR	Plastic
7	11245233 11255234 11255235	Glazing bead 8mm LGR Glazing bead 10mm LGR Glazing bead 12mm LGR	Aluminium
8	50240008	Upper latch LG	Plastic
9	53240021	Follower L LG	Plastic
10	54042024	Edge seal 30mm	Silicone
11		Toughened glass 8mm Toughened glass 10mm Toughened glass 12mm	Glass
12	11253001	Lower profile strong LG	Aluminium
13	50250001	Lower start hinge strong LG	Plastic
14	50240012	Lower chamber 6 LG	Plastic
15	50240009	Lower latch LG	Aluminium / Plastic
16	53240013	Lower hole frame LG	Plastic
17	50250004	Upper hinge strong LG	Plastic
18	5025002	Lower hinge strong LG	Plastic

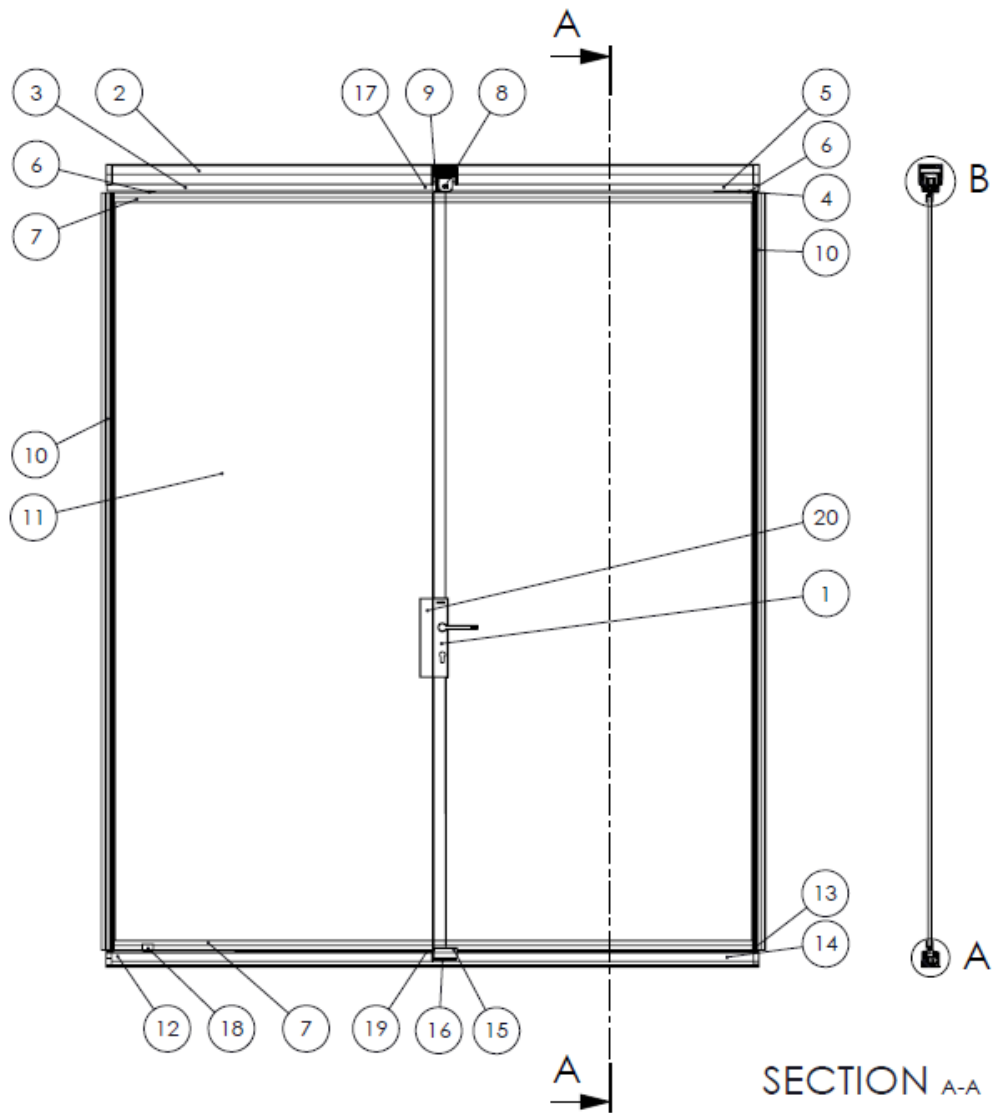


DETAIL A
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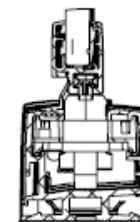


DETAIL B
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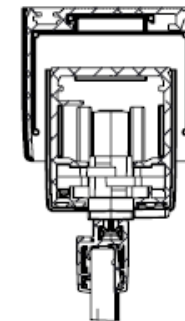
Figure 3. Example drawing of Lumon® Glazing Retractable Strong Lift Handle



Item number	Name	Material
1	50250007 Lock LGR	Aluminium / Steel
2	11222206 Telescopic profile L5/LG	Aluminium
3	11251205 Upper profile strong LG	Aluminium
4	53240020 Additional locking component LG	Plastic
5	53240015 Upper chamber 6 LG	Plastic
6	50240005 Upper rail guide strong LG	Plastic
7	11245233 Glazing bead 8mm LGR 11255234 Glazing bead 10mm LGR 11255235 Glazing bead 12mm LGR	Aluminium
8	50240008 Upper latch LG	Plastic
9	53240021 Follower L LG	Plastic
10	54042024 Edge seal 30mm	Silicone
11	Toughened glass 8mm Toughened glass 10mm Toughened glass 12mm	Glass
12	11253001 Lower profile strong LG	Aluminium
13	50250001 Lower start hinge strong LG	Plastic
14	50240012 Lower chamber 6 LG	Plastic
15	50240010 Lower high pane latch LG	Plastic
16	53240013 Lower hole frame LG	Plastic
17	50250004 Upper hinge strong LG	Plastic
18	50250003 Lower rail guide strong LG	Plastic
19	50250002 Lower hinge strong LG	Plastic
20	50250010 Glass counterpart LG/LGS	Aluminium

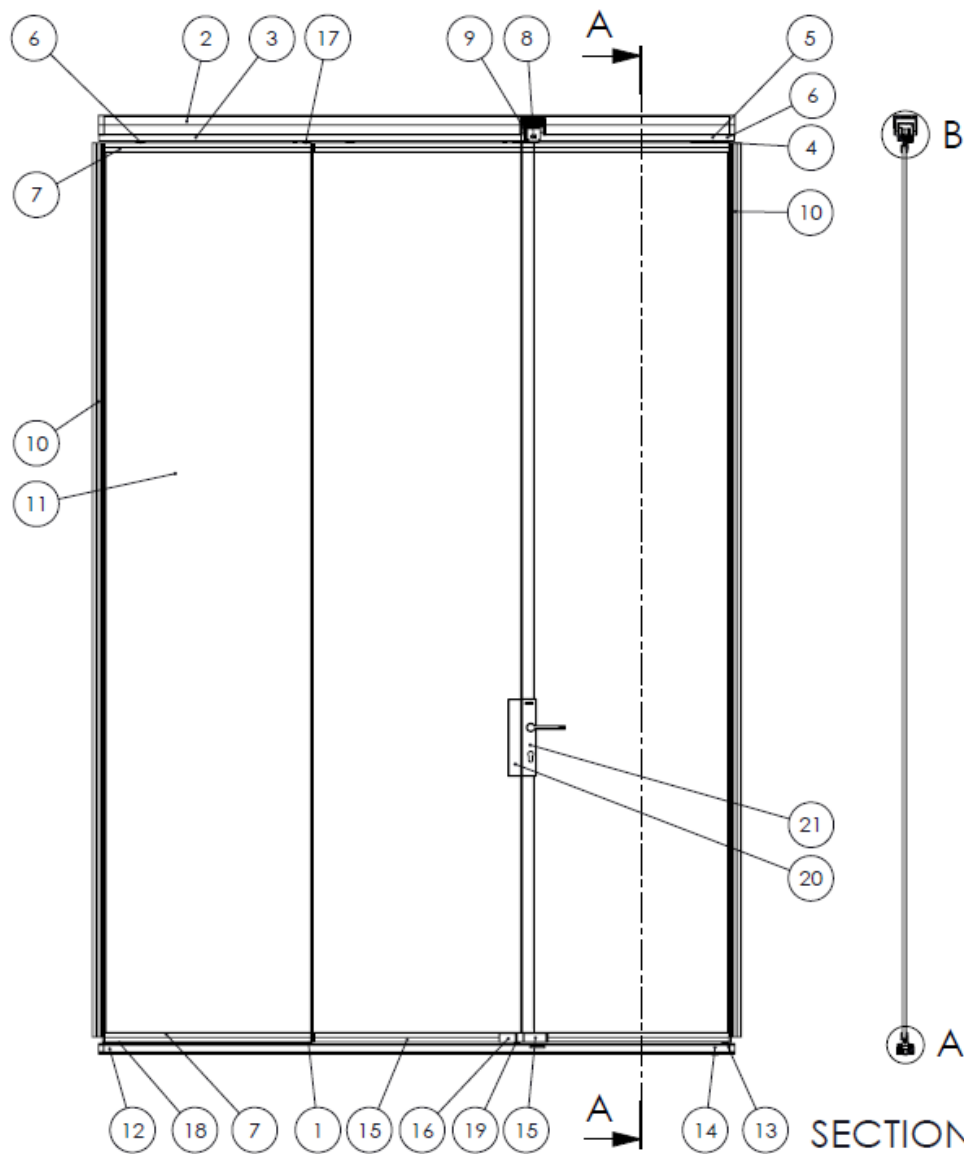


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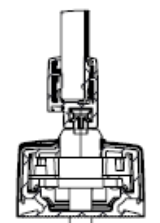


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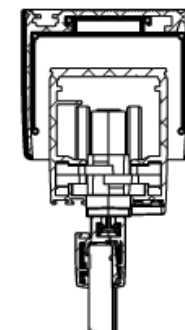
Figure 4. Example drawing of Lumon® Glazing Retractable Strong Middle Handle with Lock



Item number	Name		
1	50250014	Lower hinge embedded LGR	Plastic
2	11222206	Telescopic profile L5/LGR	Aluminium
3	11251205	Upper profile strong LGR	Aluminium
4	53240020	Additional locking component LGR	Plastic
5	53240015	Upper chamber 6 LGR	Plastic
6	50240005	Upper rail guide strong LGR	Plastic
7	11245233	Glazing bead 8mm LGR	Aluminium
	11255234	Glazing bead 10mm LGR	
	11255235	Glazing bead 12mm LGR	
8	50240008	Upper latch LGR	Plastic
9	53240021	Follower L LGR	Plastic
10	54042024	Edge seal 30mm	Silicone
11		Toughened glass 8mm Toughened glass 10mm Toughened glass 12mm	Glass
12	11253002	Lower profile embedded LGR	Aluminium
13	50250020	Lower start hinge emb. LGR	Plastic
14	50240012	Lower chamber 6 LGR	Plastic
15	50250013	Lower latch embedded LGR	Aluminium
16	51250028	Latch counterpart embedded LGR	Aluminium
17	50250004	Upper hinge strong LGR	Plastic
18	53250019	Pin for last pane embedded LGR	Plastic
19	50250021	Lower hinge 2.pane emb. LGR	Plastic
20	50250010	Glass counterpart LGR/LGS	Aluminium
21	50250007	Lock LG	Aluminium / Steel



DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 2

Figure 5. Example drawing of Lumon® Glazing Retractable Low Threshold Strong Middle Handle with lock