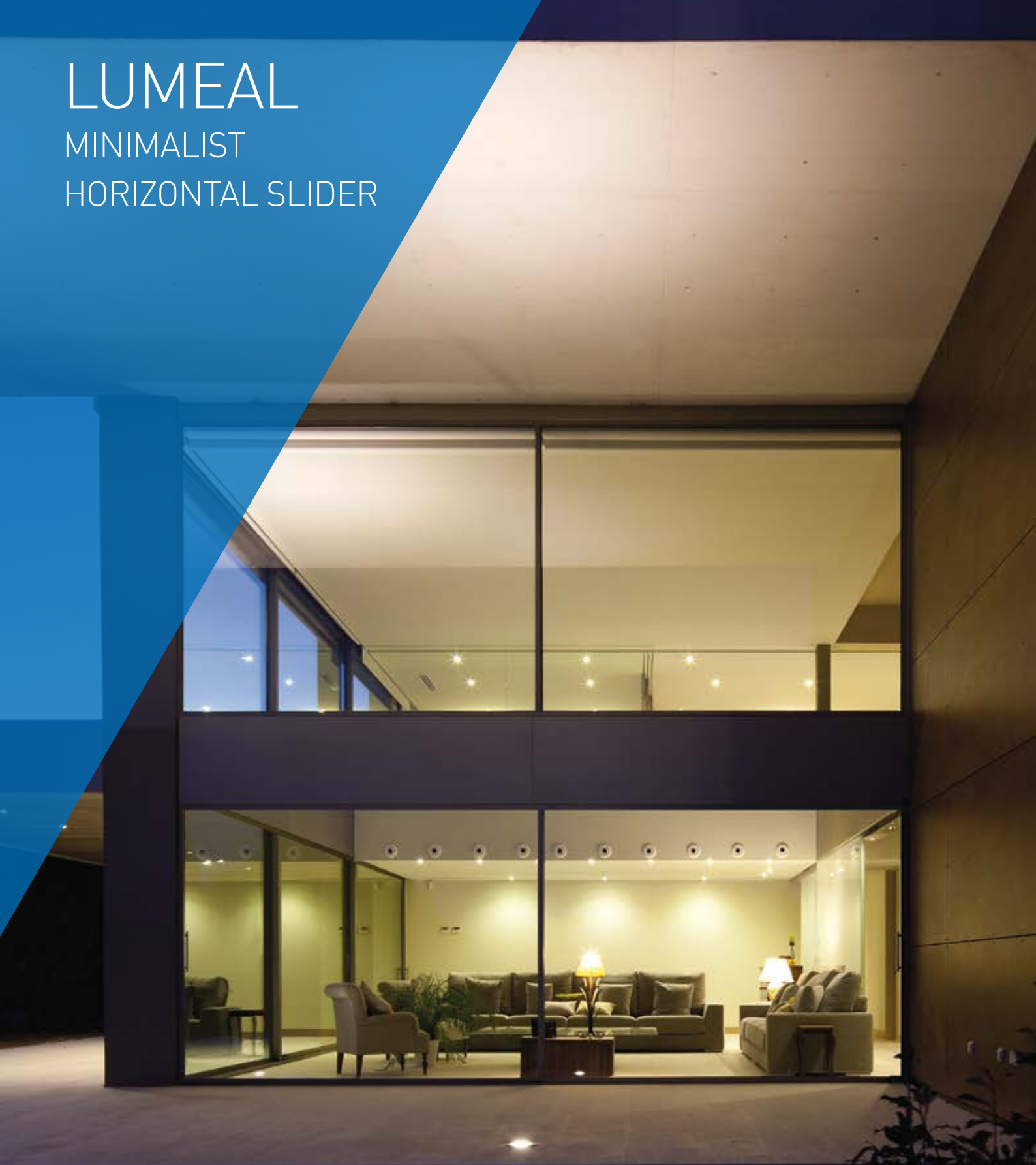
LUMEAL

MINIMALIST
HORIZONTAL SLIDER



Architect: Esther Santos
Photography: Wenzel

IMAGINE WHAT'S NEXT

TECHNAL

Architect: A7 Architecture
Photographer: DR Technal

LUMEAL
/ DESIGN TO ENHANCE PERFORMANCE

DESIGN AND INNOVATION

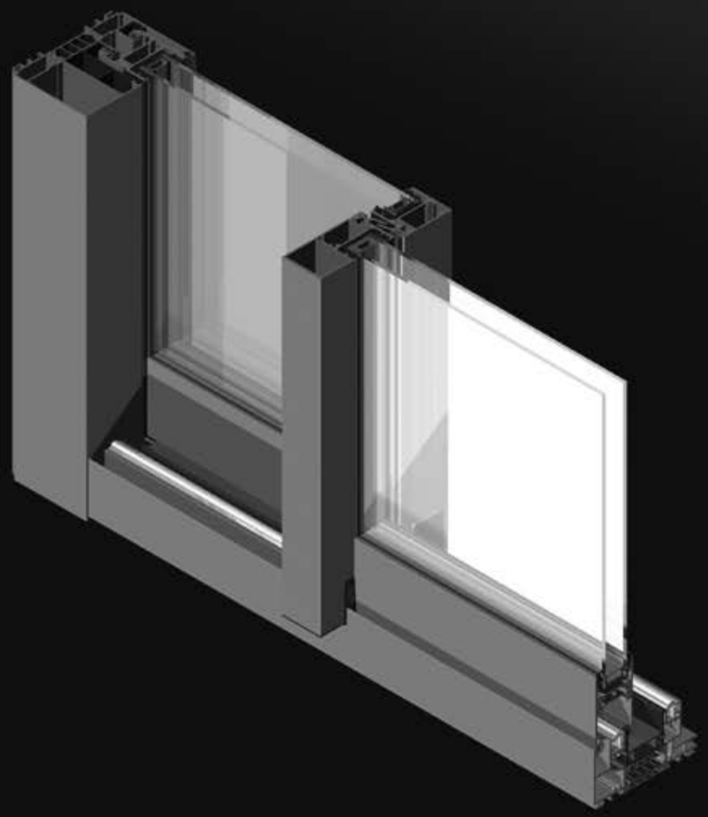
LUMEAL Minimal, 100mm module, is a minimalist sliding system with a concealed opening sash.
Its minimalist design ensures an 8 to 14% gain in glass surface area depending on the application. LUMEAL Minimal can be used to create different opening configurations combining a fixed section and sliding section, associated with a slim central meeting stile.

A SOLUTION FOR YOUR LOW ENERGY BUILDING PROJECTS

LUMEAL Minimal offers a real solution for low energy building projects due to its very low air permeability and outstanding thermal performance. 1,39 m³/h/m² (under a pressure of 100 Pascals).
1 leaf + fixed section patio door (W: 3 m - H: 2,50 m)
Uw = 1,2 W/m².K et Sw = 0,45 TLw = 0,64
Double glazing with Ug = 1,0 W/m².K + insulating spacer with dimensions (W: 4,50 m - H: 2,70 m).

Architect: B720 Arquitectos
Photography: Sandra Karre

LUMEAL
/ AN INNOVATIVE SLIDING SYSTEM



FEATURES AND KEY INNOVATIONS

LARGE DIMENSIONS

- Maximum sizes up to W: 5,30 m - H: 2,70 m
- Maximum weight per leaf: 300 kg with triple stainless steel rollers

THERMAL PERFORMANCES

- Up to Uw = 1,2 W/m².K, Sw = 0,46 and TLw = 0,65
- Double glazing with Ug = 1,0 W/m².K + Insulation spacer with dimensions W: 5,30 m - H: 2,70 m

WEATHER PERFORMANCES

Air permeability

- Very little loss, a solution for low energy building projects
- Up to 1,39 m³/h/m² (1 leaf + fixed section: W: 3 m - H: 2,50 m) under a pressure of 100 Pascals

ACOUSTIC PERFORMANCE

- Reduction equivalent to a hinged window / patio door
- 1 leaf + fixed section patio door (W: 2,8 m - H: 2,2 m) + fixed section: 35 dB (Ra,Tr)

DESIGN

- Lighter aluminium weight (-35%) with only 68 mm and 77 mm of visible aluminium
- Slim central meeting stile
- Concealed drainage for all applications

ACCESSIBILITY AND COMFORT

- Device adapted for easy access
- Flat threshold fitted into the floor or access ramp profile have been developed to improve user's comfort
- Motorized option to make easier opening/ closing of large dimensions and heavy frames

LOCKING MECHANISMS

- Several handle options with a refined design, non-locking or 2-point and 3-point locking

LUMEAL / AN EXCLUSIVE DESIGN

This attractive and effective solution is created using minimalist lines and an exclusive design. The design optimises natural light. The slider has a distinct refined finish with no overlapping of profiles and concealed drainage. Square-jointed assembly also helps to refine the structure.
The concealed opening sash principle is used to create a more attractive finish. Only the frame remains visible with a 68mm aluminium sight line (in relation to a 150mm conventional sliding system) which maximises the glass surface area by +8%.
Several exclusive design handles are available to customise the slider.

Minimal handle on service opening sash and semi fixed sash

Straight design handle on service opening sash

Knob

Central opening handle on 4 and 6-sash

Minimal handle design

Exterior detail of frame: frame-lower transom

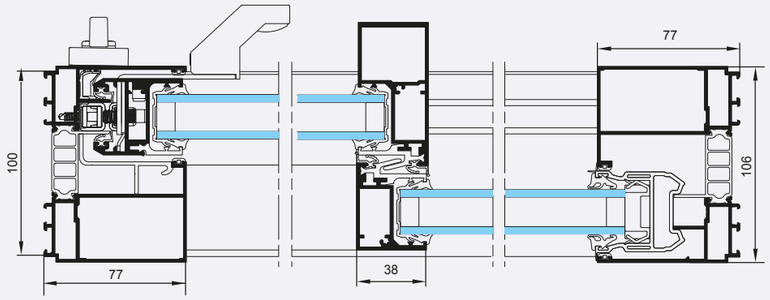
Central mullion

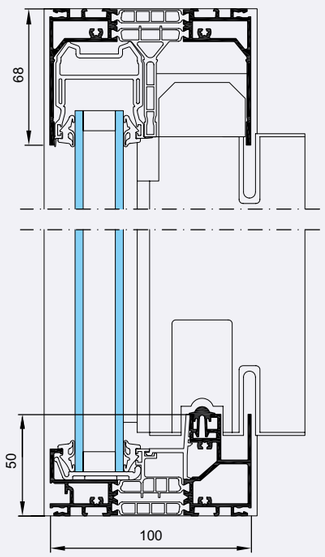
Frame detail: frame-opening sash

Architect: Franck Martinez
Photographer: Franck Martinez

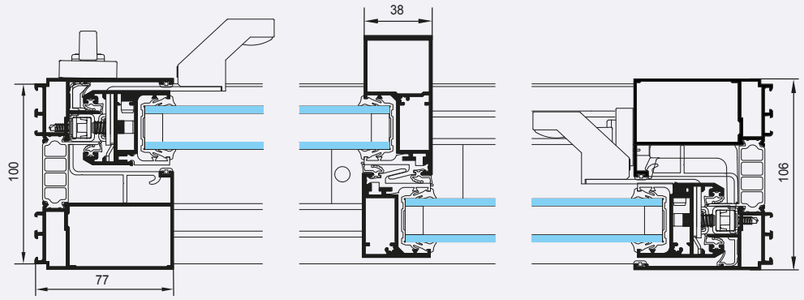
SECTION

1-LEAF + 1 FIXED SECTION – 2 TRACKS

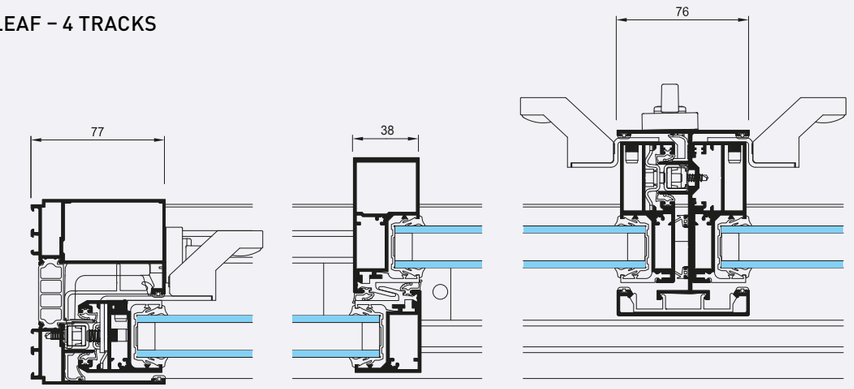


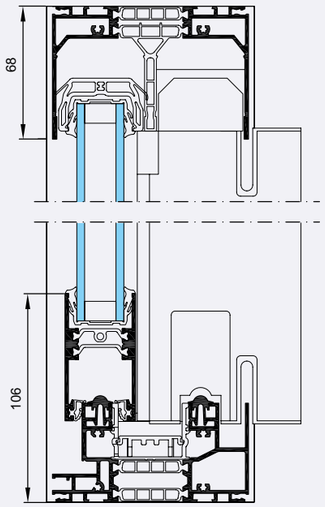


2-LEAF - 2 TRACKS

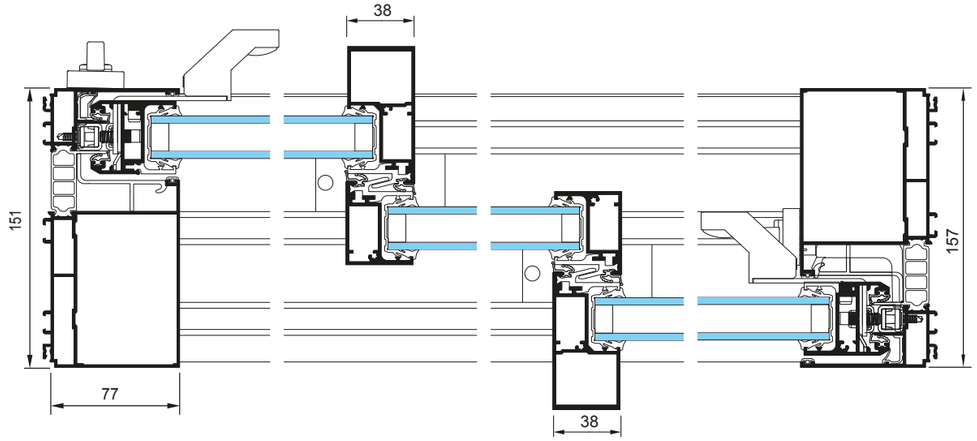


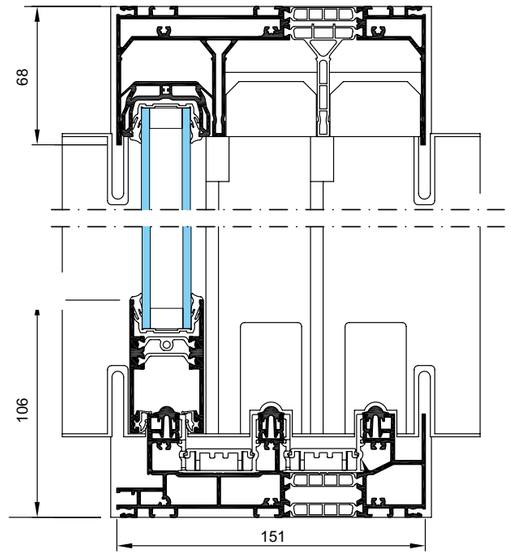
4-LEAF – 4 TRACKS



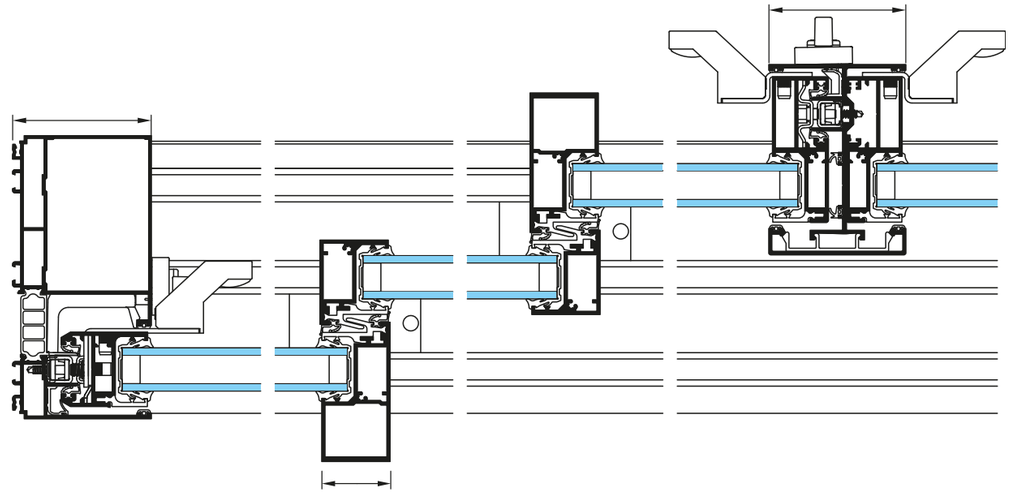


3-LEAF – 3 TRACKS





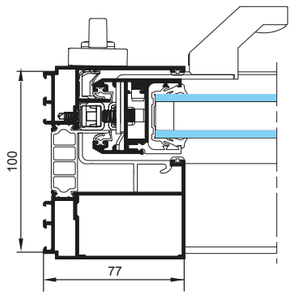
6-LEAF – 3 TRACKS



SECURITY

/ FORCIBLE ENTRY DELAY

LUMEAL sliding system, resistance class level 3 (RC3) against burglary according to the European norm EN 1627-30, by resisting more than 5 minutes to an attempted break-in.
Locking system inaccessible from the outside, with either non-locking or 2-point and 3-point locking.



Multipoint lock inaccessible from outside

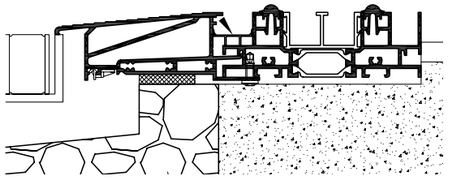
Architect: Raimon Parera
Photographer: Eugeni Pons

LUMEAL
/ ACCESSIBILITY AND COMFORT

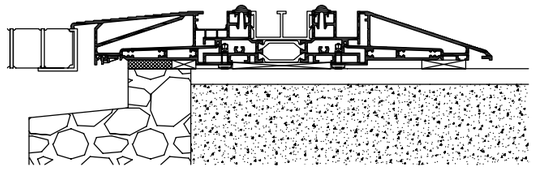
FLAT THRESHOLDS

The LUMEAL patio door threshold complies with the French law concerning building accessibility regulating patio door access whilst ensuring watertightness.

BUILD-NEW INSTALLATION CASE: THRESHOLD FITTED INTO THE FLOOR



RENOVATION INSTALLATION CASE: ACCESS RAMP PROFILE



MOTORIZED OPTION FOR MORE COMFORT AND ACCESSIBILITY

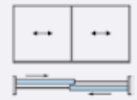
- Motorization allowing automatic lateral displacement and locking/unlocking of the operating sash
- Motorization system fully integrated to the slider to keep LUMEAL high performance and aesthetic
- Easy and noiseless lateral displacement: speed around 15 cm/s (according to the size of the sash)
- In case of obstacle, the sash stops and goes back to release
- Large dimensions (frames up to 4 meter long)
- International use thanks to tropical circuit board running in 100% relative humidity atmosphere

APPLICATIONS

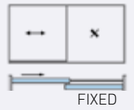
All of these applications are available with concealed drainage.

2 TRACKS

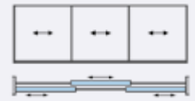
2 leaves



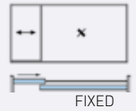
1 leaf + fixed section



3 leaves

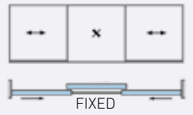


1 leaf offset in relation to fixed section

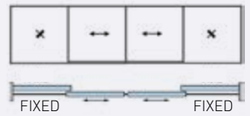


4 leaves

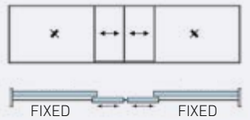
2 leaves + fixed section



2 leaves + 2 fixed sections

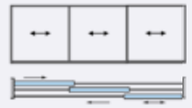


2 leaves offset in relation to 2 fixed sections

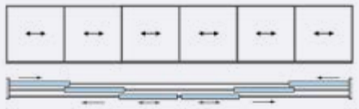


3 TRACKS

3 leaves
3 tracks

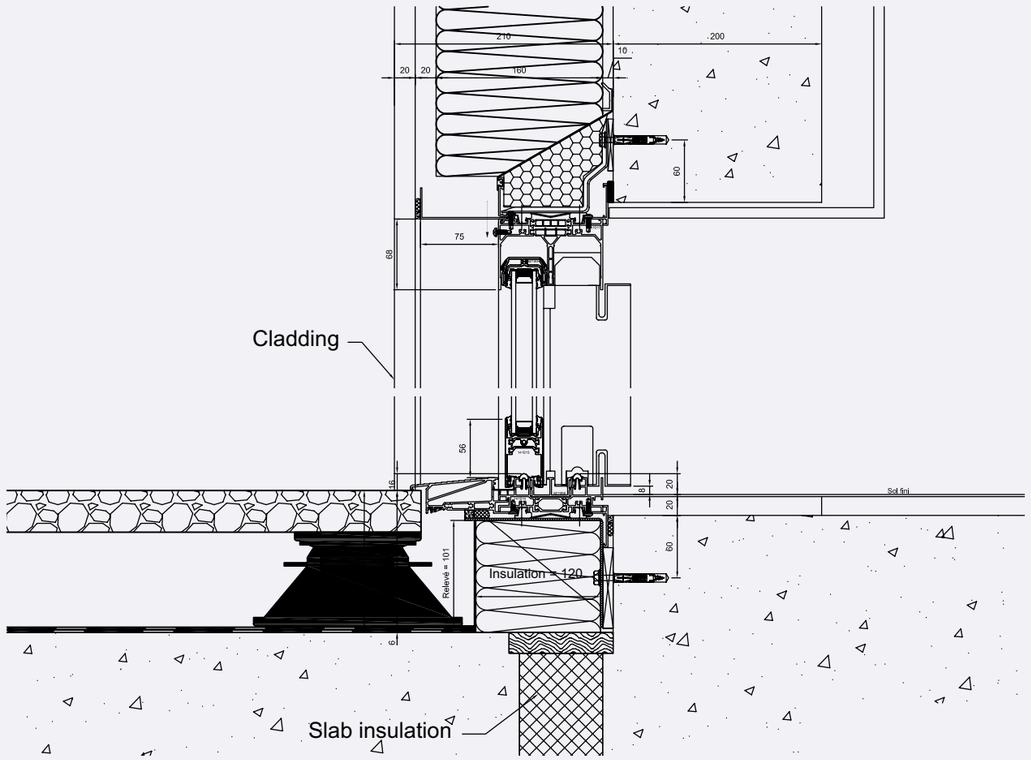


6 leaves
3 tracks

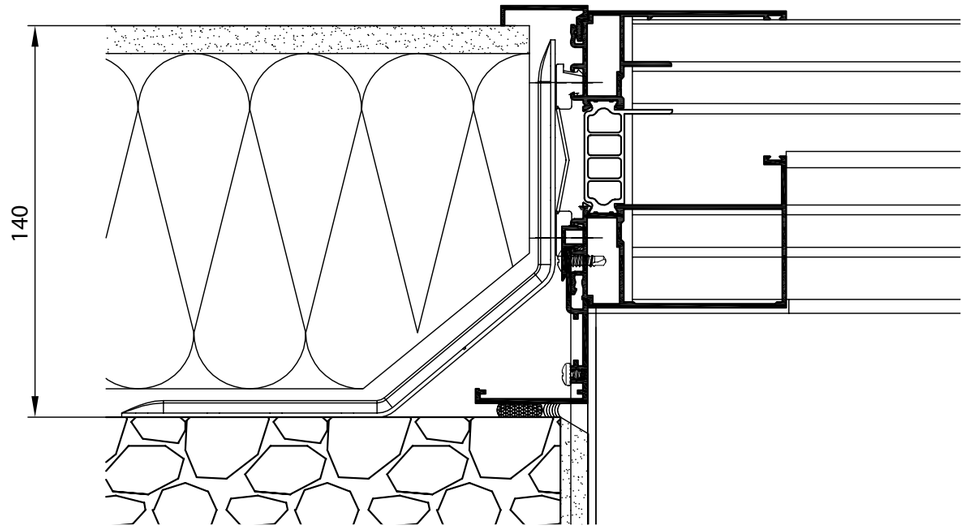


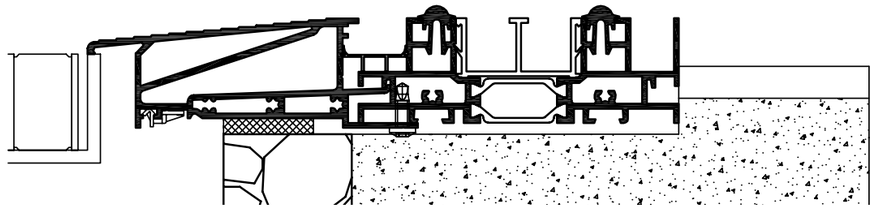
INSTALLATION OPTIONS

EXTERIOR INSULATION INSTALLATION



INSIDE INSTALLATION





PERFORMANCE

Whether for residential or office buildings, the thermal regulations RT 2012 aim to fix a maximum energy consumption for new buildings. These regulations do not impose a minimum requirement: TECHNAL® aims to support architects in this new objective.

The LUMEAL sliding system preserves the permeability of the building envelope due to its excellent Q100* and Q4 values.

*Q100 represents leakage from the frame at 100 Pascals. For Low Energy Consumption Building. Q100 must not exceed 5.1 for single-family housing or 8.5 apartment blocks (in m³/(h.m²)).

AIR, WATER, WIND SEALING PERFORMANCE

Applications	W x H dimensions in mm	Air permeability	Water tightness	Wind resistance	Q100	Q4
2 tracks – 1 leaf + 1 fixed section	3 x 2.5	Class 4	Class 7A	Class B3	1.39	0.16
2 tracks – 1 leaf + 1 fixed section disabled access threshold	2.97 x 2.482	Class 4	Class 5A	Class B2	1,92	0.22
2 tracks – 2 leaves	3 x 2.5	Class 4	Class 7A	Class B3	1.9	0.22
2 tracks – 2 leaves disabled access threshold	2.4 x 2.15	Class 4	Class 5B	Class B2	2.28	0.27
2 tracks – 4 drilled section leaves	3.5 x 2.35	Class 4	Class 5A	Class C3	2.93	0.34
3 tracks – 3 leaves	3.5 x 2.348	Class 4	Class 6A	Class B2	2,24	0.26

AIR PERMEABILITY FOR LOW ENERGY CONSUMPTION BUILDINGS (average per m² including walls)

	Q4 Pa Max	equivalent to	Q100 Pa Max
Private housing m³/(h.m²)	0.6		5.1
Apartment blocks m³/(h.m²)	1		8.5

Note: Q = Q100 x (P/100)2/3

Q100 = Leakage flow at 100 Pa
P = Pressure Pa
Q = Leakage flow at P Pa

ACOUSTIC PERFORMANCE

Applications	Description	W x H dimensions in mm	Glazing			Windows		
			Rw (C;Ctr)	Ra	Ra,Tr	Rw (C;Ctr)	Ra	Ra,Tr
Window								
2 tracks – 1 leaf + 1 fixed section	44 - 1 Where (14)10	1.39 x 1.40	42	40	38	40	39	37
2 tracks – 1 leaf + 1 fixed section with disabled access threshold	44 - 1 Where (14)10	1.39 x 1.40	42	40	38	39	39	37
2 tracks – 2 leaves	44 - 1 Where (14)10	1.39 x 1.40	42	40	38	38	38	36
2 tracks – 2 leaves + 1 fixed section with disabled access threshold	44 - 1 Where (14)10	1.39 x 1.40	42	40	38	37	37	35
Patio door								
2 tracks – 1 leaf + 1 fixed section	44 - 1 Where (14)10	2.8 x 2.2	42	40	38	38	37	35
2 tracks – 2 hidden frame leaves	44 - 1 Where (14)10	2.954 x 2.268	42	40	38	37	36	34
2 tracks – 2 leaves	44 - 1 Where (14)10	2.8 x 2.2	42	40	38	38	37	35

In accordance with EN 14351-1, these window performances are valid for:
- Rw+Ctr (for index RA,tr) glass greater than or equal to the values of the glass tested-corrections
- 1 dB for leaf surface + 50% to + 100% / - 2 dB for + 100 % to + 150% / - 3 dB for + 150 % to + 200%

THERMAL PERFORMANCE - Uw

Applications	W x H dimensions in mm	Uw with Ug 1.1	Uw with Ug 1.1 warm edge	Uw with Ug 1.0 warm edge
2 tracks – 1 leaf + 1 fixed	2.3 x 2.18	1.5	1.5	1.4
2 tracks – 2 leaves	2.3 x 2.18	1.6	1.5	1.5
2 tracks – 4 leaves	4.6 x 2.18	1.6	1.5	1.4
3 tracks – 3 leaves	3.45 x 2.18	1.7	1.6	1.5
3 tracks – 6 leaves	6.5 x 2.18	1.7	1.6	1.5

PERFORMANCE - SOLAR FACTOR

Applications	W x H dimensions in mm	Sw with Ug 1.1 Sg of single glazing 0.6 *	Sw with Ug 1.0 Sg of single glazing 0.5
2 tracks – 1 leaf + 1 fixed	2.3 x 2.18	0.53	0.44
2 tracks – 2 leaves	2.3 x 2.18	0.53	0.44
3 tracks – 3 leaves	3.45 x 2.18	0.54	0.45

PERFORMANCE - LIGHT TRANSMISSION

Applications	W x H dimensions in mm	TLw with Ug 1.1 TLg of single glazing 0.8 *	TLw with Ug 1.0 TLg of single glazing 0.7
2 tracks – 1 leaf + 1 fixed	2.3 x 2.18	0.68	0.6
2 tracks – 2 leaves	2.3 x 2.18	0.67	0.59
3 tracks – 3 leaves	3.45 x 2.18	0.69	0.6

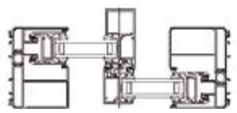
* Dark coloured sections, absorption equal to 1.0

Saint-Paul-lès-Dax College
Architect: Cabinet Hubert
Photography: P. Loubet

ENVIRONMENTAL PRODUCT DECLARATION (EPD)

Life cycle indicators	Unit per window	Results
Non-renewable primary energy	(MJ)	2912
Renewable primary energy	(MJ)	184.5
Water consumption	(kg)	3261
Reduction in abiotic resources	(kg Sb eqv.)	1.634
Climatic warming potential	(kg CO_2 eqv.)	313.1
Ozone layer depletion potential	(kg R11 eqv.)	6.892E-005
Acidification potential	(kg SO_2 eqv.)	1.33
Eutrophication potential	(kg PO_4 eqv.)	0.1406
Photochemical ozone creation potential	(kg ethene eqv.)	0.1653
Non-hazardous waste	(kg)	10.14
Hazardous waste	(kg)	6.116

The indicators are calculated based on mean representative data for the production of aluminium in the European Union, and on generic data for a standard glass unit and standard gaskets.



Horizontal section of the system tested

MATERIALS AND COMPONENTS

As with all Technal systems, only high-quality materials and components are used to reduce maintenance and guarantee long-term performance.

- The aluminium profiles are extruded from alloys 6060 Building compliant with EN 12020, EN 573-3, EN 515 and EN 775-1 to 9.
- Accessories are cast using Zamak 5 as in EN 12844.
- All gaskets are Thermoplastic elastomer (TPE) EPDM.
- Polyamide thermal breaks are extruded using PA6-6 (0,25 FV).
- Screws are stainless steel.

FINISHES AND COLOURS

A wide range of finishes is available to meet the requirements of individual projects, to enhance existing buildings and to offer increased design choice to architects and designers.

- Natural anodised in compliance with EN123731: 2001.
- Polyester powder coating finishes in an extensive range of colours, in compliance with «QUALICOAT» standards.
- LUMEAL is also available in painted finishes in Exclusives Technal colours for a stylish and modern appearance.

TECHNAL

IMAGINE WHAT'S NEXT

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By Hydro

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