

Breezway Louvre Windows

DESIGN MANUAL

AUSTRALIA

breezway[®]

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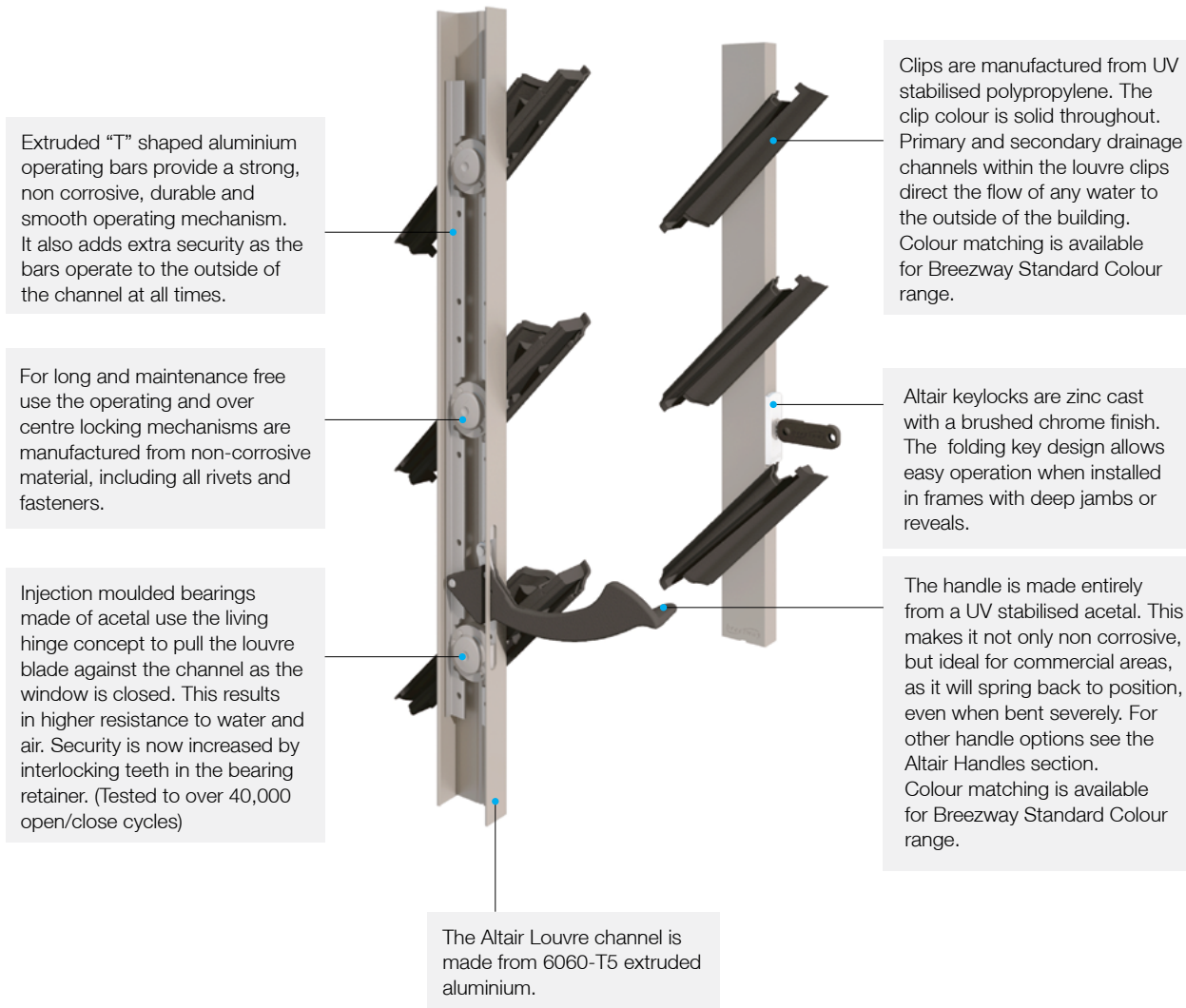
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Altair® Louvre Description and Functions



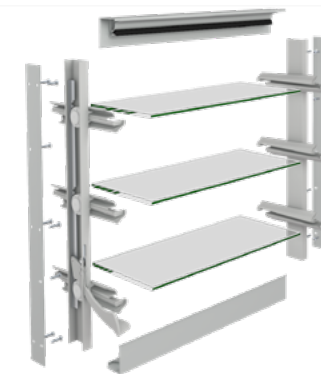
Altair® Louvre Systems

Altair Louvres are available in either the fully integrated Louvre Window System or a Component System for other frames.



Louvre Window System

Altair Louvres in a Breezway Easyscreen™, Innoscreen® or SL2® Frame.



Louvre Component System

Altair Louvres used in other Framing System.

Product Performance Warranty: Housing

Altair Louvres are designed to meet and exceed the requirements of AS2047-2014 "Windows in Buildings".

The following tables outline the maximum variations that Breezway will warrant per Non-Cyclonic and Cyclonic Wind Classification and Water Penetration as per AS2047-2014 "Windows in Buildings". Exceeding these constraints will void this Warranty. The limitations have been generated through extensive NATA test results, calculations and over 85 years of experience manufacturing louvre windows.

Breezway Window Systems supplied fully glazed by Breezway Australia will be labelled as compliant with AS2047-2014 by Breezway Australia.

Breezway Window Systems supplied unglazed by Breezway Australia can be labelled as compliant with AS2047-2014 by the window system supplier when glazed according to the limitations of this Product Performance Warranty.

Window fabricators installing the Altair Component System within a window frame will be able to label their window as compliant with AS2047-2014 when:

- The limitations of this Product Performance Warranty are complied with.
- The complete Altair Component System is used, complete with Altair Weatherstrips and seals. If the complete Altair Component System is not used, the window fabricator assumes responsibility for the testing and warranting of the performance of the window system.
- The Altair Component System is installed to Breezway procedures.

Window fabricators installing the Altair Component System within a window frame assume responsibility for:

- The fixing of the Altair Component System into the window frame.
- The performance and fixings of the frame, mullions and transoms.

For residential or commercial building classes, or for housing outside the limitations of AS4055, please consult Breezway with your specific project requirements so we can correctly apply the relevant performance warranty constraints.

NOTES:

SLS (Serviceability Limit State Wind Pressure / Design Wind Pressure / Permissible Stress)
The ability of the window to perform the intended function under normal service conditions avoiding excessive deflection or the appearance of buckling.

ULS (Ultimate Limit State Wind Pressure / Ultimate Strength Pressure)
The maximum load carrying resistance of the window. Subjecting the window to wind pressures in excess of the ULS is likely to result in the window collapsing.

1. Glass blade size and flatness

Glass blades must be 6.0mm $\pm$ 0.1mm thick and must be straight and flat within 0.3mm/m. Glass blades must be 152.00mm $\pm$ 0.6mm high or 102.00mm $\pm$ 0.6mm high.

2. Mullions

Mullion heights are based on a 1:250 deflection ratio and the maximum warranted louvre bay widths for each N or C rating and window location.

3. Using the Stronghold System for 152mm blade lengths greater than 900mm

The Stronghold System is an optional feature of the Altair Louvre Window which mechanically fixes the blades into the clips. These mechanical fixings enable bay widths of up to 1200mm to be achieved in some regions. In other regions, the ULS and Water Pass requirements of AS2047-2014 prevent these wider bay widths from being warranted. Easyscreen, Innoscreen or Altair Component System High Profile Sills and standard heights are required.

4. Water Pass Ratings greater than 300Pa

A High Profile Sill is required to achieve Water Pass ratings greater than 300Pa.

- High Profile Sills are available in the Breezway Easyscreen and Innoscreen Window Systems and in the Altair Component System.
- High Profile Sills are not available in the Breezway SL2 Window System.
- Altair 102mm Louvres are not suitable for use with High Profile Sills as they are prevented from opening beyond 28°.
- Water Pass ratings greater than 300Pa are only achievable using Altair Gallery sets without screw holes.
- Altair Gallery sets snap into Breezway Window Systems, so do not require screw holes.
- Altair Backing Strips allow Altair Component Systems to be installed without screw holes.

5. Narrower, taller bays with toughened glass

The Product Performance Warranty constraints for annealed glass can also be applied to toughened glass. The Product Performance Warranty constraints for toughened glass cannot be applied to annealed glass.

Product Performance Warranty: Altair® Louvres in Non-Cyclonic Regions: Housing

	N1/N2				N3				N4				N5				N6				
	General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		
	400 Pa SLS 900 Pa ULS 150 Pa Water Pass		600 Pa SLS 1300 Pa ULS 150 Pa Water Pass		600 Pa SLS 1400 Pa ULS 150 Pa Water Pass		800 Pa SLS 2000 Pa ULS 150 Pa Water Pass		800 Pa SLS 2000 Pa ULS 200 Pa Water Pass		1200 Pa SLS 3000 Pa ULS 200 Pa Water Pass		1200 Pa SLS 3000 Pa ULS 300 Pa Water Pass		1800 Pa SLS 4500 Pa ULS 300 Pa Water Pass		1600 Pa SLS 4000 Pa ULS 450 Pa Water Pass		2500 Pa SLS 6000 Pa ULS 450 Pa Water Pass		
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	
	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	
	152mm Altair Louvre with or without the Stronghold System																				
152mm annealed glass ¹	900	21	900	21	900	21	805	21	805	21	658	21	658 ⁵	17 ⁵	537 ⁵	20 ⁵	569 ^{4,5}	8 ^{4,5}	465 ^{4,5}	10 ^{4,5}	
152mm toughened glass ¹	900	21	900	21	900	21	900	21	900	21	900	21	900 ⁵	14 ⁵	849 ⁵	15 ⁵	800 ^{4,5}	5 ^{4,5}	735 ^{4,5}	6 ^{4,5}	
152mm aluminium blade	900	21	900	21	900	21	900	21	900	21	900	21	707	17	707	17	NA	NA	NA	NA	
Easyscreen & Innoscreen Mullion ²	–	21	–	21	–	21	–	20	–	20	–	17	–	17	–	16	–	8	–	10	
SL2 Mullion ²	–	13	–	11	–	10	–	9	–	9	–	8	–	8	–	7	–	NA	–	NA	
152mm Altair Louvre with the Stronghold System																					
152mm toughened glass ¹	1200 ³	15 ³	1200 ³	15 ³	1200 ³	15 ³	1200 ³	15 ³	1127 ³	15 ³	–	–	–	–	–	–					
Easyscreen & Innoscreen Mullion ²	–	15	–	15	–	15	–	15	–	15	–	–	–	–	–	–					
102mm Altair Louvre with or without the Stronghold System																					
102mm annealed glass ¹	750	33	750	33	750	33	750	33	750	33	658	33	658	27	537	31	NA	NA	NA	NA	
102mm toughened glass ¹	750	33	750	33	750	33	750	33	750	33	750	33	750	25	750	25	NA	NA	NA	NA	
102mm aluminium blade	750	33	750	33	750	33	750	33	750	33	750	33	707	27	707	27	NA	NA	NA	NA	
Easyscreen & Innoscreen Mullion ²	–	33	–	33	–	33	–	33	–	33	–	29	–	27	–	25	–	NA	–	NA	
SL2 Mullion ²	–	22	–	19	–	17	–	15	–	15	–	13	–	13	–	11	–	NA	–	NA	

1. Glass blade size and flatness

Glass blades must be 6.0mm ±0.1mm thick and must be straight and flat within 0.3mm/m. Glass blades must be 152.00mm ±0.6mm high or 102.00mm ±0.6mm high.

2. Mullions

Mullion heights are based on a 1:250 deflection ratio and the maximum warranted louvre bay widths for each N or C rating and window location.

3. Using the Stronghold System for blade lengths greater than 900mm

The Stronghold System is an optional feature of the Altair Louvre Window which mechanically fixes the blades into the clips. These mechanical fixings enable bay widths of up to 1300mm to be achieved in some regions. In other regions, the ULS and Water Pass requirements of AS2047-2014 prevent these wider bay widths from being warranted. Easyscreen, Innoscreen or Altair Component System High Profile Sills and standard heights are required.

4. Water Pass Ratings greater than 300Pa

- A High Profile Sill is required to achieve Water Pass ratings greater than 300Pa.
- High Profile Sills are available in the Breezway Easyscreen and Innoscreen Window Systems and in the Altair Component System.
- High Profile Sills are not available in the Breezway SL2 Window System.
- Altair 102mm Louvres are not suitable for use with High Profile Sills as they are prevented from opening beyond 28°. Water Pass ratings greater than 300Pa are only achievable using Altair Gallery sets without screw holes.
- Altair Gallery sets snap into Breezway Window Systems, so do not require screw holes.
- Altair Backing Strips allow Altair Component Systems to be installed without screw holes.

5. Narrower, taller bays with toughened glass

The Product Performance Warranty constraints for annealed glass can also be applied to toughened glass. The Product Performance Warranty constraints for toughened glass cannot be applied to annealed glass.

Product Performance Warranty: Altair® Louvres in Cyclonic Regions: Housing

	C1				C2				C3				C4			
	General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows	
	600 Pa SLS 1800 Pa ULS 150 Pa Water Pass		800 Pa SLS 2700 Pa ULS 150 Pa Water Pass		800 Pa SLS 2700 Pa ULS 200 Pa Water Pass		1200 Pa SLS 4000 Pa ULS 200 Pa Water Pass		1200 Pa SLS 4000 Pa ULS 300 Pa Water Pass		1800 Pa SLS 5900 Pa ULS 300 Pa Water Pass		1600 Pa SLS 5300 Pa ULS 450 Pa Water Pass		2500 Pa SLS 8000 Pa ULS 450 Pa Water Pass	
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height
	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades
152mm Altair Louvre with or without the Stronghold System																
152mm annealed glass ¹	849	21	693	21	693	21	569	21	569 ⁵	19 ⁵	469 ⁵	20 ⁵	495 ⁵	10 ⁵	NA	NA
152mm toughened glass ¹	900	21	900	21	900	21	900	21	900 ⁵	14 ⁵	741 ⁵	17 ⁵	741 ⁵	6 ⁵	637	7
152mm aluminium blade	900	21	900	21	900	21	900	21	707	17	707	17	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion ²	–	20	–	18	–	18	–	16	–	17	–	14	–	10	–	7
SL2 Mullion ²	–	9	–	8	–	8	–	7	–	7	–	6	–	NA	–	NA
152mm Altair Louvre with the Stronghold System																
152mm toughened glass ¹	1200 ³	15 ³	1096 ³	15 ³	1096 ³	15 ³	–	–	–	–	–	–	–	–	–	–
Easyscreen & Innoscreen Mullion ²	–	15	–	15	–	15	–	–	–	–	–	–	–	–	–	–
102mm Altair Louvre with or without the Stronghold System																
102mm annealed glass ¹	750	33	693	33	693	33	569	33	569	30	469	32	NA	NA	NA	NA
102mm toughened glass ¹	750	33	750	33	750	33	750	33	750	25	741	26	NA	NA	NA	NA
102mm aluminium blade	750	33	750	33	750	33	750	33	707	27	707	27	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion ²	–	33	–	30	–	30	–	26	–	27	–	23	–	NA	–	NA
SL2 Mullion ²	–	15	–	14	–	14	–	12	–	12	–	10	–	NA	–	NA

1. Glass blade size and flatness

Glass blades must be 6.0mm ±0.1mm thick and must be straight and flat within 0.3mm/m. Glass blades must be 152.00mm ±0.6mm high or 102.00mm ±0.6mm high.

2. Mullions

Mullion heights are based on a 1:250 deflection ratio and the maximum warranted louvre bay widths for each N or C rating and window location.

3. Using the Stronghold System for blade lengths greater than 900mm

The Stronghold System is an optional feature of the Altair Louvre Window which mechanically fixes the blades into the clips. These mechanical fixings enable bay widths of up to 1300mm to be achieved in some regions. In other regions, the ULS and Water Pass requirements of AS2047-2014 prevent these wider bay widths from being warranted. Easyscreen, Innoscreen or Altair Component System High Profile Sills and standard heights are required.

4. Water Pass Ratings greater than 300Pa

- A High Profile Sill is required to achieve Water Pass ratings greater than 300Pa.
- High Profile Sills are available in the Breezway Easyscreen and Innoscreen Window Systems and in the Altair Component System.
- High Profile Sills are not available in the Breezway SL2 Window System.
- Altair 102mm Louvres are not suitable for use with High Profile Sills as they are prevented from opening beyond 28°. Water Pass ratings greater than 300Pa are only achievable using Altair Gallery sets without screw holes.
- Altair Gallery sets snap into Breezway Window Systems, so do not require screw holes.
- Altair Backing Strips allow Altair Component Systems to be installed without screw holes.

5. Narrower, taller bays with toughened glass

The Product Performance Warranty constraints for annealed glass can also be applied to toughened glass. The Product Performance Warranty constraints for toughened glass cannot be applied to annealed glass.

Product Performance Warranty: Altair® IGLU® Louvres in Non-Cyclonic Regions: Housing

		N1/N2				N3				N4				N5				N6			
		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows	
		400 Pa SLS		600 Pa SLS		600 Pa SLS		800 Pa SLS		800 Pa SLS		1200 Pa SLS		1200 Pa SLS		1800 Pa SLS		1600 Pa SLS		2500 Pa SLS	
		900 Pa ULS		1300 Pa ULS		1400 Pa ULS		2000 Pa ULS		2000 Pa ULS		3000 Pa ULS		3000 Pa ULS		4500 Pa ULS		4000 Pa ULS		6000 Pa ULS	
		150 Pa Water Pass		150 Pa Water Pass		150 Pa Water Pass		150 Pa Water Pass		200 Pa Water Pass		200 Pa Water Pass		300 Pa Water Pass		300 Pa Water Pass		450 Pa Water Pass		450 Pa Water Pass	
Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height		
mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades		
Altair IGLU Double Glazed Louvre ²																					
IGLU Blade (5LE/Ar/5LE)	800	21	800	21	800	21	800	21	800	21	800	21	800	18	800	18	500	11	500	11	
IGLU Blade (5LE/Ar/5LE)	1127	20	1127	20	1127	20	1127	20	1127	15	–	–	–	–	–	–	–	–	–	–	
Easyscreen Mullion ¹	–	21	–	21	–	21	–	20	–	21	–	21	–	17	–	16	–	8	–	10	

1. Mullions

Mullion heights are based on a 1:250 deflection ratio and the maximum warranted louvre bay widths for each N or C rating and window location.

2. Sills

All IGLU Louvre assemblies must utilise the Breezway High Profile Sill

Product Performance Warranty: Altair® IGLU® Louvres in Cyclonic Regions: Housing

	C1				C2				C3				C4			
	General location		Corner Windows		General location		Corner Windows		General location		Corner Windows		General location		Corner Windows	
	600 Pa SLS 1800 Pa ULS 150 Pa Water Pass		800 Pa SLS 2700 Pa ULS 150 Pa Water Pass		800 Pa SLS 2700 Pa ULS 200 Pa Water Pass		1200 Pa SLS 4000 Pa ULS 200 Pa Water Pass		1200 Pa SLS 4000 Pa ULS 300 Pa Water Pass		1800 Pa SLS 5900 Pa ULS 300 Pa Water Pass		1600 Pa SLS 5300 Pa ULS 450 Pa Water Pass		2500 Pa SLS 8000 Pa ULS 450 Pa Water Pass	
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height
	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades	mm	Blades
Altair IGLU Double Glazed Louvre²																
IGLU Blade (5LE/Ar/5LE)	800	21	800	21	800	21	800	21	800	18	500	11	500	11	500	11
IGLU Blade (5LE/Ar/5LE)	1127	20	1127	20	1127	15	–	–	–	–	–	–	–	–	–	–
Easyscreen Mullion¹	–	21	–	18	–	18	–	16	–	17	–	14	–	10	–	7

1. Mullions

Mullion heights are based on a 1:250 deflection ratio and the maximum warranted louvre bay widths for each N or C rating and window location.

2. Sills

All IGLU Louvre assemblies must utilise the Breezway High Profile Sill

Product Performance Warranty: Altair® Dualair™ Secondary Glazed Louvre Component System

Altair® Louvres are designed to meet and exceed the requirements of AS2047-2014 "Windows in Buildings".

The following table outlines the maximum variations that Breezway will warrant for Ultimate Limit State Wind Pressure and Water Penetration Resistance as per AS2047-2014 "Windows in Buildings". Exceeding these constraints will void this Warranty. The limitations have been generated through NATA test results.

Window fabricators installing the Altair Dualair Component System within a window frame will be able to label their window as compliant with AS2047-2014 when:

- The limitations of this Product Performance Warranty are complied with.
- The complete Dualair Component System is used.
- The sill of the frame the Dualair Component System has a face dimension of at least 45mm.
- Sub-sill has 5mm x 400mm drainage slots, 200mm from ends, at 500mm centres.
- The sub-sill that the frame with the Dualair Component System is installed into has a baffle or drainage flap to prevent wind driven rain back through the drainage sections.
- The Dualair Component System is installed to Breezway procedures.
- Window fabricators installing the Dualair Component System within a window frame assume responsibility for the performance and fixings of the frame, mullions and transoms.

	2500 Pa ULS 600 Pa Water Pass		3400 Pa ULS 600 Pa Water Pass		6000 Pa ULS 620 Pa Water Pass	
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height
Altair Dualair Secondary Glazed 152mm Louvre System without the Stronghold System						
Toughened glass ¹ (inside) & toughened glass ¹ (outside)	900	18 blade	900	18 blade	736	18 blade
Toughened glass ¹ (inside) & aluminium blade (outside)	900	18 blade	900	18 blade	–	–
Altair Dualair Secondary Glazed 152mm Louvre System with the Stronghold System						
Toughened glass ¹ (inside) & toughened glass ¹ (outside)	1127	18 blade	900	18 blade	736	18 blade
Toughened glass ¹ (inside) & aluminium blade (outside)	1127	18 blade	900	18 blade	–	–

1. Glass blade size and flatness

Glass blades must be 6.0mm ±0.1mm thick and must be straight and flat within 0.3mm/m. Glass blades must be 152.00mm ±0.6mm high.

2. Frame Performance Warranty

The Product Performance Warranty detailed above only relates to the Altair Dualair Secondary Glazed Louvre Component System, the product performance limitations of the framing into which the Dualair Component System is installed should also be considered.

3. Using the Stronghold System for blade lengths greater than 900mm

The Stronghold System is an optional feature of the Altair Louvre Window which mechanically fixes the blades into the clips. These mechanical fixings enable blade lengths of up to 1127mm to be achieved in some situations. In other situations, the ULS and Water Pass requirements of AS2047-2014 prevent these wider bay widths from being warranted.

Testing Standards

Altair® Louvre Windows are tested to meet the mandatory minimum specifications under Australian Standard AS2047 (including AS1288) as required by the Australian Building Code. All windows for the Australian market whether made from timber, aluminium, uPVC or other materials are required to undergo the following performance tests in accordance with AS4420.1 to verify performance claims.

- Deflection Test — positive and negative wind pressures are applied to the face of the window to test the maximum deflection under wind load.
- Operating Force Test — to verify that an opening sash is capable of opening and closing without undue effort.
- Air Infiltration Test — the air leakage of a window is tested to ensure energy and acoustic efficiency.
- Water Penetration Resistance Test — this test is designed to ensure no water leaks through the window into the building.
- Ultimate Strength Test — negative and positive wind pressures are applied to the window to at least 1.5 times the design wind pressure to ensure it does not fail in unusual wind conditions.

Product Certification — Structural & Water Performance

The Australian Standard AS2047-2014 "Windows and external glazed doors in buildings" requires all window manufacturers to label their windows with:

- Their identification mark
- The Design Wind Pressures and Water Penetration Resistance of each window.

Window Systems, complete with all glazing, supplied by Breezway will have Breezway product certification stickers fixed to the underside of the head of the window frame.



Warranty

Subject to the Warranty Claim Procedure, Breezway warrants the goods supplied to be free of defects arising from faulty workmanship or materials for a period of up to ten (10) years on frames, seven (7) years on louvre moving parts, and three (3) years on electronic components from the date of purchase and guarantees that services will be rendered with due care and skill. Please download the PDF's below relevant to your date of purchase.

Breezway VENTORA Warranty Download https://www.breezway.com.au/downloads/australia/Breezway_VENTORA_Warranty_March_2024.pdf

Louvre Care And Maintenance

Maintaining Aluminium Finishes

Regular maintenance of the surface finish will be necessary to reduce the rate of weathering. The frequency of cleaning will depend on the environmental conditions, but as a guide should be done at 3 monthly intervals, or more frequently in aggressive coastal or industrial environments.

- Remove loose deposits by gently brushing or hosing.
- Clean using a sponge or soft brush and warm water with a mild detergent. Avoid cleaning agents with a caustic base, abrasive materials or harsh chemicals.
- Rinse with clean water.
- Dry with a chamois (optional).

Apply a 'non-abrasive' car polish to maintain the lustre of the finish (optional).

Glass Maintenance

For best results glass blades should be regularly cleaned with mild, non-abrasive detergents. Low e glass blades should be installed with the coated side facing to the inside of the building and should only be cleaned with mild, non-abrasive detergents. Abrasive detergents or cleaning tools will visibly damage the low e coating.

Timber Louvre Blade Finishes

Western Red Cedar blades are a natural material and as such will be susceptible to colour variations and natural movement. Prior to installation or exposure to weather, all timber blade surfaces must be finished with a suitable exterior grade sealant. The finish used should be 'non-tacky' or 'abrasion-resistant' to avoid blades sticking together when closed. Dark colours can cause timber movement. The surface sealant should be re-applied to the sealant manufacturer's instructions to avoid weathering of the timber and minimise timber movement. The product warranty will become void if these actions are not adhered to.

Louvre Maintenance

It is recommended that inspection be carried out at the time of installation and then at yearly intervals. This may be required more frequently depending upon the variation of location, and environmental conditions.

Inspection and checks

- Inspect all fittings and screw fixings for firmness.
- Ensure that all Stronghold System pins (if present) are firmly clicked in place.
- Check the louvre clips for any degradation over time.
- Check that the blade is firmly and safely positioned in the clips.
- Ensure all louvre blades operate freely.
- Ensure that seals are in place and clean.
- The Powerlouvre™ Window should be operated at least once per month.

Lubrication

All internal louvre operating mechanisms are pre-lubricated, prior to assembly, with a clear lubricant where required. Under normal conditions this will be satisfactory for the life of the window.

Plastic Maintenance

When cleaning plastic components it is recommended to be done by wetting a cloth with a neutral cleaning agent such as a car wash without wax/polymer, or alternatively a mild furniture polish.

Acidic or alkaline cleaning solutions, such as vinegar, detergents and glass cleaners should be avoided.

Lock Maintenance

The lock has been designed to be maintenance free besides regular cleaning. If the lock barrel needs to be replaced, for example to change the key types, or if the lock mechanism suffers damage, please contact the window fabricator that supplied the louvre.

Selecting The Right Aluminium Finish

The aluminium components of Altair® Louvre windows are available in three different surface finishes: anodised, standard powder coating and high performance powder coating.

Powder coatings are polyester coatings from leading powder suppliers applied to a thickness of 50 µm and anodised finishes are to a thickness of 25 µm. Over time, weathering of powder coated surfaces should be expected, resulting in a gradual change in appearance.

This will be evident in loss of gloss, chalking, colour change and erosion of the powder coatings. Selecting the right powder for the atmospheric conditions of the site and correct maintenance will be critical to the ongoing appearance of the finish.

The application of high durability powder will reduce this deterioration and is essential for severe industrial, coastal or tropical environments.

Note that industry accepted colour variation can occur during the aluminium anodising process.

Energy Efficiency

Breezway® Altair® Louvre Windows can help to enhance the energy efficiency and comfort of a building by offering:

Maximum ventilation

With no fixed panes and blades that open almost fully horizontally (87°) Altair Louvre Windows welcome fresh, cooling breezes. These cooling breezes reduce the need for power hungry electric air conditioning systems, thereby helping to save our fragile environment.

Tight Sealing

Altair Louvre Windows have an air infiltration rating that meets the requirements of AS2047-2014. Tight sealing reduces draughts thereby allowing heating and cooling systems to run more efficiently.

Choice of Glazing

A variety of energy efficient glazing options is available to meet local requirements. For example, in cooling climates toned glass blades reduce the amount of hot sunlight that enters a building. In mixed and heating climates, the improved insulating properties of low e glass blades offer thermal performance comparable to clear double glazing.

Additional Benefits of External Screening

External screens deliver additional insulating and shading benefits to Altair Louvre Windows. The Easyscreen Altair Louvre Window is the only window system currently energy rated under the Window Energy Rating Scheme (WERS) with permanent, externally fitted metal mesh screens. WERS ratings of screened products can be found at www.wers.net/werscontent/screened-products

Additional Benefits of the Altair Dualair Secondary Glazed Louvre System

The secondary glazing configuration of the Dualair System results in significant improvements to the thermal insulation of Dualair Window Systems due to the large air gap.

Energy ratings of most windows sold in Australia can be found in the Window Energy Rating Scheme (WERS) website, werslink.com.au

In warm climates the shading offered by tinted glass has a positive impact on the window's energy rating.

In cold and mixed climates the insulating properties of clear low e glass blades give comparative thermal performance to clear double glazing.

Compliance with the energy efficiency provisions of both Section J and Clause 3.12.2 of the National Construction Code is possible when Altair Louvre Windows are used appropriately.

Airborne Sound Insulation

Altair Louvre Window

The Altair Louvre window system has been both laboratory and field tested for sound transmission loss.

The laboratory tests were conducted by Stantec Australia Pty Ltd. Testing was conducted to AS1191-2002 in accordance with AS5218:2018.

The field tests were conducted by a member firm of the Association of the Australia Acoustical Consultants. Testing was conducted to AS 5218:2018 and ISO 717-1: 1996E.

	Lab Test	Field Test
Blade Material	R _w (C,Ctr)	R' _{45°w} (C,Ctr)
Toughened Glass	28 (0;-1)	27 (-0.6;-2.7)
Aluminium	25 (-1;-2)	25 (-0.7;-2.3)

Dualair System

The Altair Dualair Secondary Glazed Louvre system has been laboratory tested for sound transmission loss.

The laboratory tests were conducted by the CSIRO on an Altair Dualair Secondary Glazed Louvre System. The windows comprised of Altair Dualair Secondary Glazed Louvre System within Alspec McArthur 150mm Framing. Testing was conducted to AS/NZS 1276.1:1999 (ISO 717-1:1996).

Test results for Dualair System.

Outer Blade Material	Inner Blade Material	R _w (C,Ctr)
Glass	Glass	35 (-1;-3)
Aluminium	Glass	35 (-2;-4)

IGLU Louvre System

The Altair IGLU Louvre System has been laboratory tested for sound transmission loss.

The laboratory tests were conducted by Stantec Australia Pty Ltd. Testing was conducted to AS1191-2002 in accordance with AS5218:2018.

Test results for IGLU Louvre System.

IGLU Blade	R' _w (C,Ctr)
5mm Glass / 12mm Argon / 5mm Glass	30 (-1;-3)

Breezway® Policy For Louvres and Breezway Fixed Lites in Bush Fire Prone Areas

Using Altair® Louvres in a Bush Fire Prone Area

The following requirements for using louvre windows in bushfire prone areas are based on:

- Our interpretation of AS 3959-2018 “Construction of Buildings in Bushfire Prone Areas”,
- BAL-29 bushfire testing by the CSIRO of the Easyscreen Altair Louvre Window System with CrimSafe screens to AS1530.8.1-2007 (CSIRO Report number FSZ1572), and
- A CSIRO Infrastructure Technologies report assessing alternative steel mesh screens (CSIRO Report number FCO-3026).
- BAL-40 bushfire testing by Warrington Fire of the Easyscreen Altair Louvre Window System and Easyscreen Altair IGLU Double Glazed Louvre System with Invisi-Gard screens to AS1530.8.1-2007 (Warrington Fire Report number FRT200407), and
- A Warrington Fire report assessing alternative steel mesh screens (Warrington Fire Report number FAS200470).
- Breezway Easyscreen Window Systems Fixed Lites can meet deemed-to-satisfy provisions of AS3959:2018 providing certain conditions are met for each Bushfire Attack Level. The Easyscreen Window System is an aluminium framing system with metal hardware.

We recommend that you receive independent advice from both an engineer and your local council authority to determine your level of construction and to ensure that you comply with the correct protection measures for your individual circumstance.

AS 3959-2018

Bushfire Attack Level Low

- **Louvres and Fixed Lites**
 - The degree of bushfire attack is considered insufficient to warrant specific construction requirements.

Bushfire Attack Levels 12.5 & 19.

- **Louvres**
 - Glazing must be toughened glass if the window is within 400mm of the ground or other structures within 18° of the horizontal (such as an eave). Glazing elsewhere may be annealed.
 - Louvres are to be screened externally using corrosion-resistant steel, bronze or aluminium mesh.
 - Maximum screen aperture size of 2 mm in such a way that the entire opening remains screened when the louvre is open.
 - Gaps between the screen and the window do not exceed 3mm.
 - The mesh or perforated screen must be completely supported by framing made of metal or bushfire resistant timber.
- **Fixed Lites**
 - All single glaze fixed lite glass must be toughened safety glass with a minimum thickness of 5mm.
 - All double glazed fixed lite glass must be toughened safety glass with a minimum thickness of 5mm for the outer glazing layer.

Bushfire Attack Level 29

- **Louvres**
 - Louvres are to be Altair Louvres within the Breezway Easyscreen Window System.
 - Glazing must be toughened glass.
 - Window must be externally screened using corrosion-resistant steel mesh or perforated screens.
 - Maximum screen aperture size of 2mm in such a way that the entire opening remains screened when the louvre is open.
 - Gaps between the screen and the Breezway Easyscreen window frame do not exceed 3mm.
 - The mesh or perforated screen must be completely supported by framing made of metal or bushfire resistant timber.
- **Fixed Lites**
 - All single glaze fixed lite glass must be toughened safety glass with a minimum thickness of 5mm.
 - All double glazed fixed lite glass must be toughened safety glass with a minimum thickness of 5mm for the outer glazing layer.
 - If glass is within 400mm of the ground or others structures (like decks or eaves) within 18° of horizontal, the window must be externally screened using corrosion-resistant steel, bronze or aluminium mesh, or perforated screens.
 - Maximum screen aperture size of 2mm
 - Gaps between the screen and window frame do not exceed 3mm.
 - The mesh or perforated screen must be completely supported by framing made of metal or bushfire resistant timber.

Breezway® Policy For Louvres and Breezway Fixed Lites in Bush Fire Prone Areas

Bushfire Attack Level 40

• Louvres

- Louvres are to be Altair Louvres within the Breezway Easyscreen Window System.
- Glazing must be toughened glass.
- Window must be externally screened using corrosion-resistant steel mesh or perforated screens.
- Maximum screen aperture size of 2mm in such a way that the entire opening remains screened when the louvre is open.
- Gaps between the screen and the Breezway Easyscreen window frame do not exceed 3mm.
- The mesh or perforated screen must be completely supported by Easyscreen framing

• Fixed Lites

- All single glaze fixed lite glass must be toughened safety glass with a minimum thickness of 6mm.
- All double glazed fixed lite glass must be toughened safety glass with a minimum thickness of 6mm for the outer glazing layer.
- All glazing wedge must be of a Flammability Index >5. Glazing wedge supplied by Breezway on glazed and unglazed fixed lites has a Flammability Index >5.
- Window must be externally screened using corrosion-resistant steel or bronze mesh or perforated screens.
- Maximum screen aperture size of 2mm.
- Gaps between the screen and the window frame do not exceed 3mm.
- The mesh or perforated screen must be completely supported by framing made of metal.

Bushfire Attack Level 40 - Alternative Solution for Louvres

- Alspec has completed BAL-40 testing using the Altair Louvre within an aluminium Alspec frame fitted with an Invisi-Gard stainless steel mesh screen. Refer to www.invisi-gard.com.au/bushfire-testing for more details.

Bushfire Attack Level FZ

• Louvres and Fixed Lites

- Windows are to be completely protected by compliant bushfire shutters.



Breezway® Policy for Louvres Adjacent to Australian Swimming Pools

Using Altair® Louvres Adjacent to Swimming Pools

Clause 2.6 of AS1926.1-2012 "Swimming pool safety. Part 1: Safety barriers for swimming pools" defines the requirements for windows opening directly into a pool area. Openable portions of the windows must comply with one of the following:

- Be totally covered by bars or a metal screen, that are fixed to the building with fasteners that can only be removed by the use of a tool. The opening between bars and the horizontal dimensions of openings in a metal screen shall not be greater than 100mm.
- Be fixed to the building with fasteners that can only be removed by use of a tool so that it will remain closed or will open to a maximum of 100mm.

A 152mm Altair Louvre Window with the Stronghold System and restricted opening to 100mm will comply with AS1926.1-2012 clause 2.6(b).

A 102mm Altair Louvre Window with the Stronghold System will comply with AS1926.1-2012 clause 2.6(b).

If compliance is required to earlier versions of AS1926 where restricted openings must also satisfy clause 3.1 then:

A 152mm Altair Louvre with the Stronghold System and restricted opening to 80mm and maximum blade length of 600mm will comply with AS1926.1-2007 clause 2.7(a)ii

A 102mm Altair Louvre with the Stronghold System, toughened glass blades and restricted opening to 80mm and a maximum blade length of 600mm will comply with AS1926.1-2007 clause 2.7(a)ii.

Please note that state and local government authorities may choose to impose stricter local requirements.

Fall Prevention through Openable Louvre Windows

Using Altair Louvres to Meet Fall Prevention through Openable Window Requirements

Clauses 11.3.7, 11.3.8 and D3D29 of the Building Code of Australia detail the situations in which openable windows require fall prevention measures and the requirements that windows in these situations must meet.

The following Altair Louvre Window configurations have passed testing to "AS5203:2016 - Protection of Openable Windows/Fall Prevention":

NOTES:

The Altair Louvre restricted opening devices and the Stronghold System blade retention are permanent fixtures which cannot be removed, unlocked or overridden without complex tool usage (such as a drill). Products that can be unlocked or overridden with a simple tool or two-handed operation, such as removing a louvre blade with coordinated two-handed operation, will also require additional barriers to 865mm.

If screens will be used to provide protection as per Clauses 11.3.7, 11.3.8 and D3D29 then the Altair Louvre Windows will not require the Stronghold System and will not require blade openings to be restricted. The window frame and securely fitted screen assembly should be tested to "AS5203:2016 - Protection of Openable Windows/Fall Prevention" to ensure that the assembly will not permit a 125mm sphere to pass through it and resist a horizontal outward force of 250N.

Balustrades

Breezway Altair Louvre products are not a balustrade system. Nor are any other window types. Balustrades are one type of barrier. Altair louvres with the Stronghold System and suitable openings are another. It is always important to ensure that a particular barrier system complies with the relevant Building Codes and associated Standards.

Breezway louvres with the Stronghold System have passed testing up to 750N for AS1170.1 barrier infill loadings, making them suitable for use in the following occupancy types: A, B, E, and C3. For other occupancy types, appropriate, permanently fixed screening is recommended.

Manual Stronghold® System		
Product Range	Maximum Blade Length	Required Restriction
152 Toughened Glass	1,127mm	100mm
102 Toughened Glass	707mm	None
102 Toughened Glass	750mm	80mm
152 Aluminium	900mm	100mm
102 Aluminium	750mm	80mm

Powerlouvre™ Stronghold® System		
Product Range	Maximum Blade Length	Required Restriction
152 Toughened Glass	900mm	80mm
152 Toughened Glass with Security D-Bar	1,127mm	100mm
102 Toughened Glass	707mm	None
102 Toughened Glass	750mm	80mm
152 Aluminium	900mm	80mm
152 Aluminium with Security D-Bar	900mm	100mm
102 Aluminium	650mm	None
102 Aluminium	750mm	80mm

Fixed Stronghold® System		
Product Range	Maximum Blade Length	Required Restriction
Toughened Glass & Aluminium	900mm	Fixed

Dualair® Stronghold® System		
Product Range	Maximum Blade Length	Required Restriction
Toughened Glass & Aluminium	900mm	100mm ¹
Toughened Glass & Aluminium	1,127mm	80mm ¹

IGLU® Double Glazed Louvre System		
Product Range	Maximum Blade Length	Required Restriction
IGLU Manual	1,127mm	72mm
IGLU Powerlouvre System	800mm	72mm

1. Dualair Secondary Glazed System requires both inner and outer glazing layers to be configured for compliance

Altair® Louvre Gallery Sets

For Glass & Aluminium Blades

Left

Right



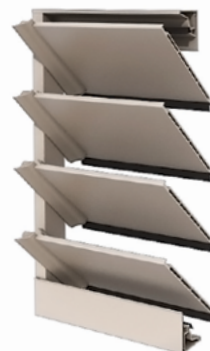
Altair Louvre

Operating bars and handles are supplied to one side only (left control is the standard, viewed from inside).



Altair Powerlouvre® System

Automated louvres are ideal for out of reach installations or for integration with building automation systems.



152mm
Fixed
Louvre

Altair Keylock Louvre

Key locks are only available in a brushed chrome finish.

Note: Altair louvres cannot be used on rake head windows.

Altair® Louvre Gallery Features

Gallery Type Options

- Single Operating Mechanism
- The Powerlouvre™ System
- The Stronghold® System
- Key Lock Gallery — not available with: variable keylock positions, additional keylocks or Powerlouvre® options.
- Fixed Louvre Gallery

“Standard” Inclusions

- Extruded channel with or without screw holes;
- Single operating mechanism with single left hand control handle (viewed from inside);
 - Black handles and clips for all finishes, except white handles and clips for region specific Standard White finishes;
 - Standard louvre gallery heights.
 - Choice of clips to suit 6mm or 14mm blades.

“Off Standard” Features Available

- (No change to manufacturing lead time)
- Right hand control (viewed from inside);
 - Top Extended channel to next standard clip size, or cut to length channel for off standard heights;
 - Colour matched handles and clips;
 - Optional handle Low Profile Handle, Ring Handle (P13);
 - 80mm or 100mm restricted opening
 - Variable or additional handle position.

Off Standard Louvre Gallery Heights (Extended Channel)

It is recommended that, wherever possible, Altair® Louvre Windows should be designed to a standard height. This will reduce the product cost and ensure effective opening of all blades.

In some circumstances this may not be possible. In these instances the Altair Louvre can be ordered with Extended Channel. The Extended Channel is a continuation of the channel that is cut to size, giving improved appearance and water performance in comparison to an add-on extension piece.

The Louvre is supplied with an Extended Channel that can be cut back to the required height. Note that the part to be cut down is located at the top of the gallery. All glass blades must comply with the requirements of AS1288 “Glass in Buildings”.

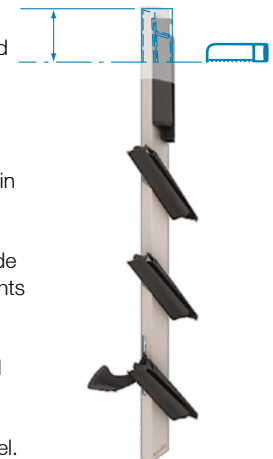
Off-standard heights within 5mm of a standard height do not need a fixed blade but the shrouds of the top clips may need to be trimmed for off-standard heights between 5mm and 2mm below a standard height.

Off-standard heights that are not within 5mm of a standard height will be fitted with a top fixed blade.

For example, the louvre illustrated is ordered as 3 blade with Extended Channel.

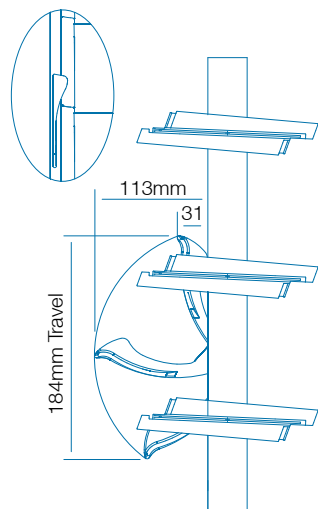
Off-standard heights are not available with the IGLU Double Glazed Louvre System or the Dualair Secondary Glazed Louvre System.

Top extension can be achieved by cutting back to required height.



Altair® Louvre Handles

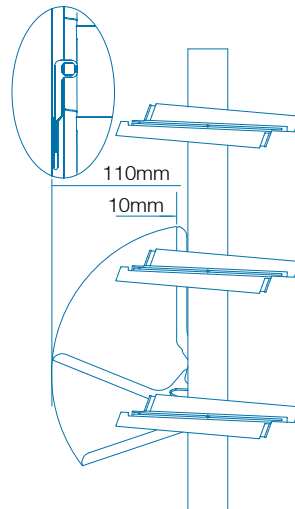
Handle Front View



Standard Handle

- Acetal handle
- Ergonomic design for comfortable use

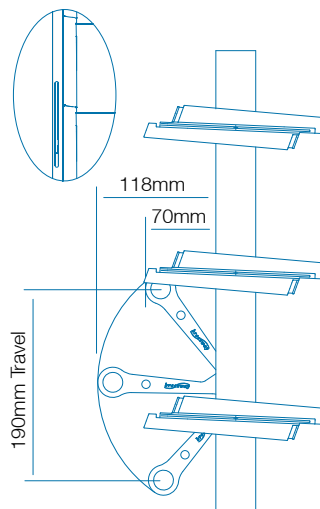
Handle Front View



Low Profile Handle

- Stainless steel handle
- Substitute for Standard Handle when inserting into bi-folding & sliding door panels

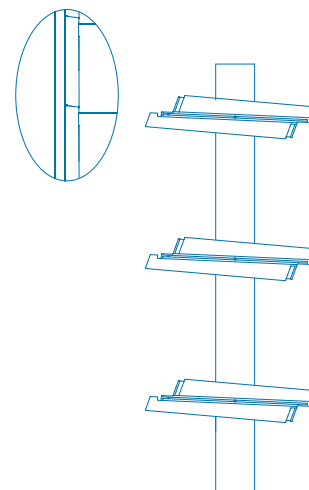
Handle Front View



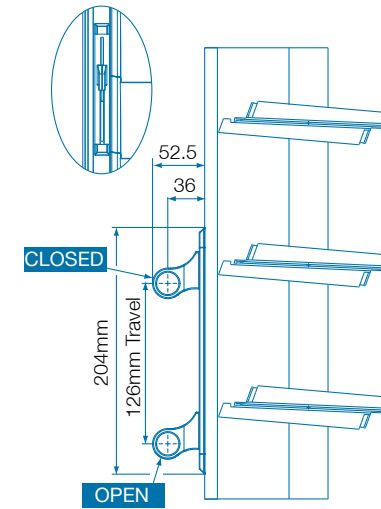
Ring Handle (P13)

Acetal handle for manual operation with Breezway Map Rod when installed out of arm's reach.

Front View: No handle



Handle Front View



Innoscreen® Slide Handle

- Acetal handle
- For manual operation with Innoscreen Window System only
- Should not be operated using a map rod, Powerlouvre should be used for out of reach applications
- Patented design

Powerlouvre™ System*

Concealed motors and connectors for use with Remote Window Control Systems

*Keylock not available with Powerlouvre System.

Map Rod

To operate Ring Handle when installed out of arm's reach
2m, 3m and 4m set lengths
1.8m - 3.6m telescopic length



Altair® 152mm Louvre Standard Handle Positions

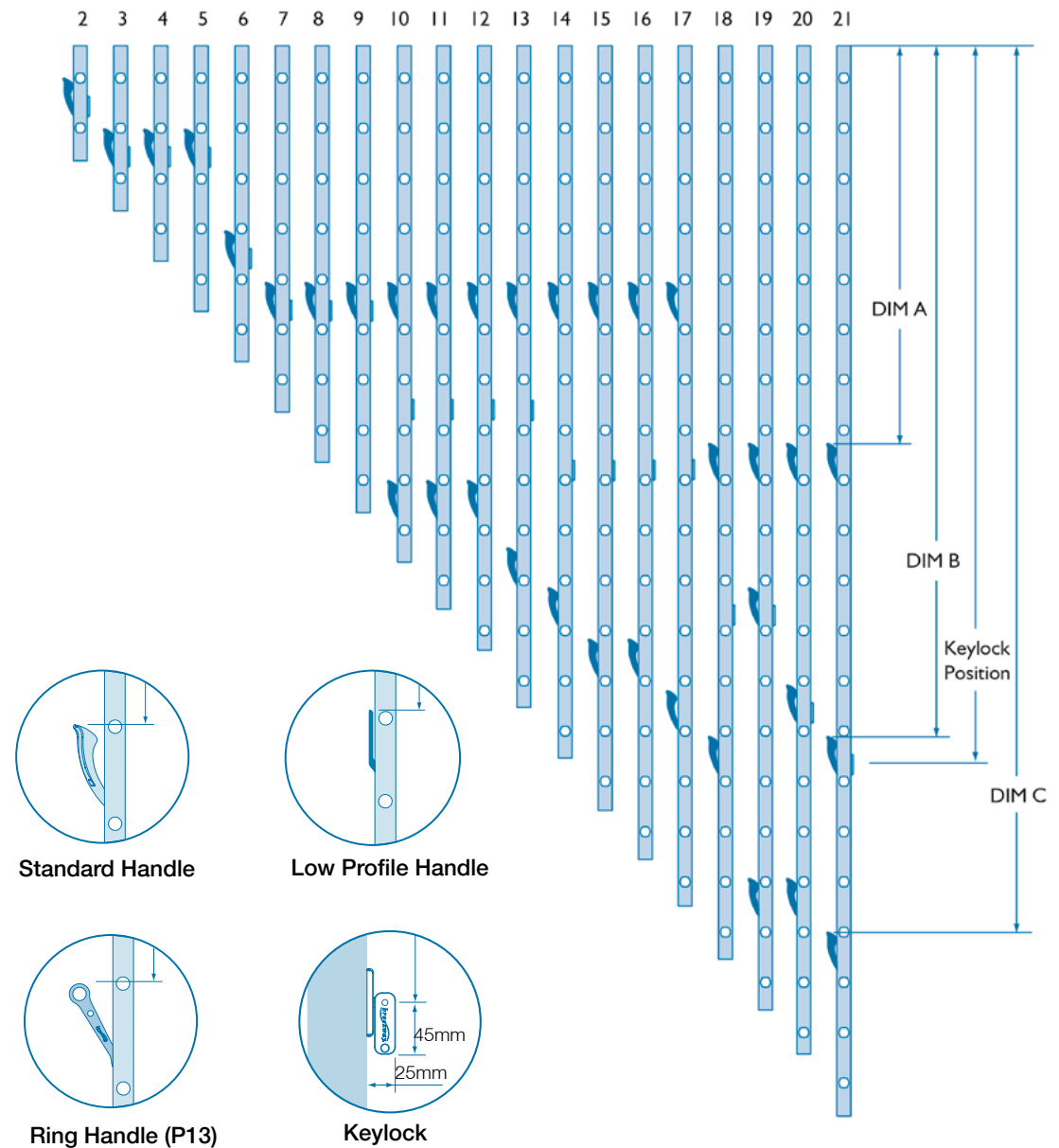
Formulas for Other Handle Positions

1. Low Profile Handle Position = Standard Handle Position – 3mm
2. Ring Handle Position = Standard Handle Position +22mm

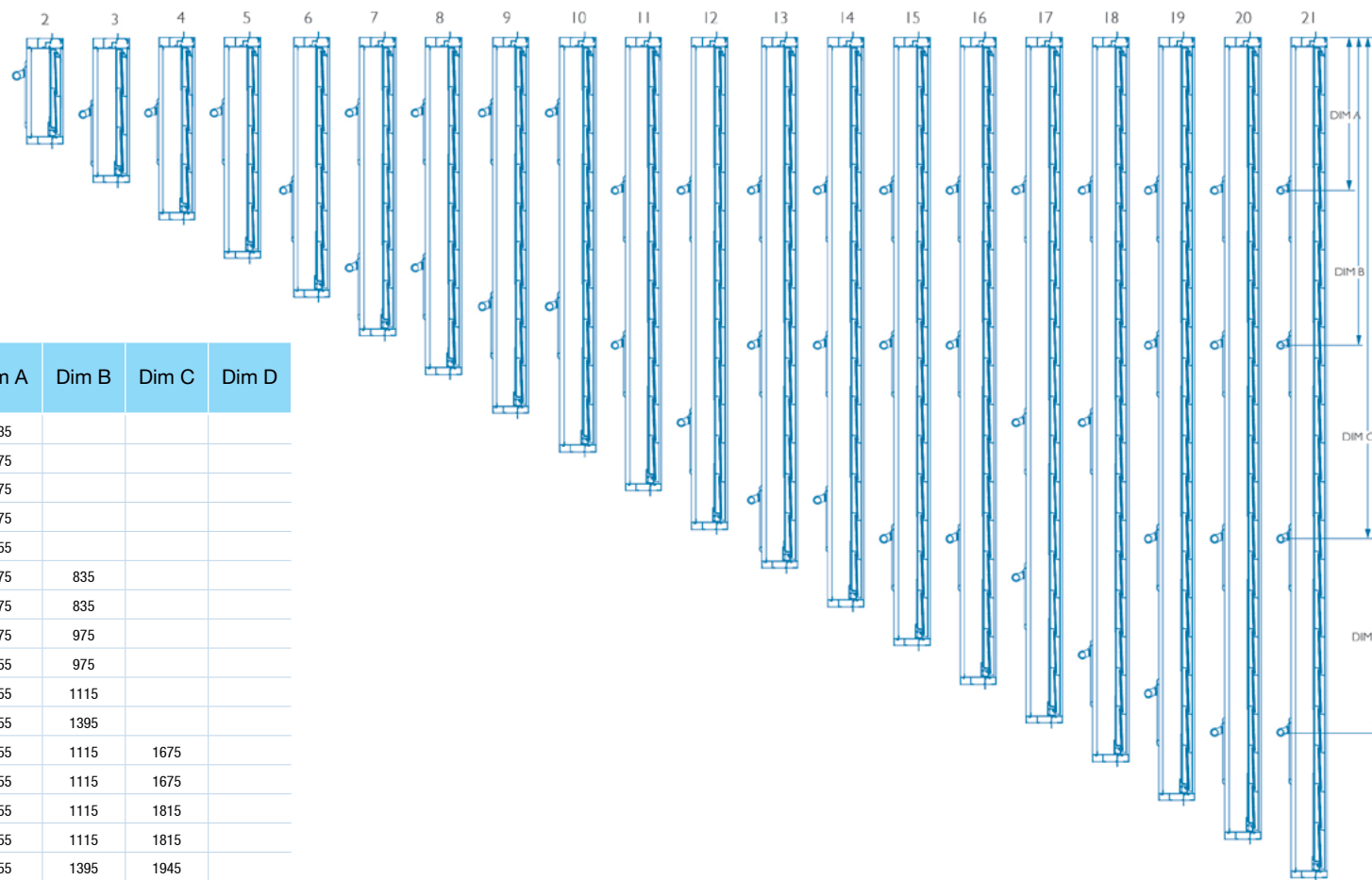
No. of Blades	Banks of Blades Controlled from Head Downwards	Channel Length	Dim A	Dim B	Dim C	Keylock Positions
2	2	320	72			128
3	3	460	212			268
4	4	600	212			268
5	5	740	212			268
6	6	880	492			548
7	7	1020	632			688
8	8	1160	632			688
9	9	1300	632			688
10	7 3	1440	632	1192		968
11	7 4	1580	632	1192		968
12	7 5	1720	632	1192		968
13	8 5	1860	632	1332		968
14	9 5	2000	632	1472		1108
15	7 8	2140	632	1612		1108
16	7 9	2280	632	1612		1108
17	8 9	2420	632	1752		1108
18	9 9	2560	1052	1892		1528
19	9 4 6	2700	1052	1472	2312	1528
20	9 6 5	2840	1052	1752	2312	1808
21	9 7 5	2980	1052	1892	2452	1948

NOTES:

- Additional handles can be specified or relocated to another position. Each handle can operate a maximum of nine clips including at least one clip directly below the handle.
- Keylocks are always located on the opposite side to handles.
- Relocated keylocks are not available.



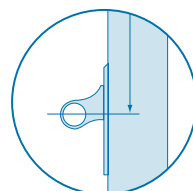
Innoscreen Window System Altair® 152mm Louvre Slide Handle Positions



No. of Blades	Banks of Blades Controlled from Head Downwards	Window Height	Dim A	Dim B	Dim C	Dim D
2	2	380	135			
3	3	520	275			
4	4	660	275			
5	5	800	275			
6	6	940	555			
7	4 3	1080	275	835		
8	4 4	1220	275	835		
9	5 4	1360	275	975		
10	5 5	1500	555	975		
11	6 5	1640	555	1115		
12	6 6	1780	555	1395		
13	6 4 3	1920	555	1115	1675	
14	6 4 4	2060	555	1115	1675	
15	6 5 4	2200	555	1115	1815	
16	6 5 5	2340	555	1115	1815	
17	6 6 5	2480	555	1395	1945	
18	6 6 6	2620	555	1395	2235	
19	6 5 4 4	2760	555	1115	1815	2375
20	6 5 5 4	2900	555	1115	1815	2515
21	6 5 5 5	3040	555	1115	1815	2515

NOTES:

- Additional handles and alternate handle positions are not available.



Innoscreen Slide Handle

Altair® IGLU® Louvre System Standard Handle Positions for 300mm and 500mm Blade Lengths

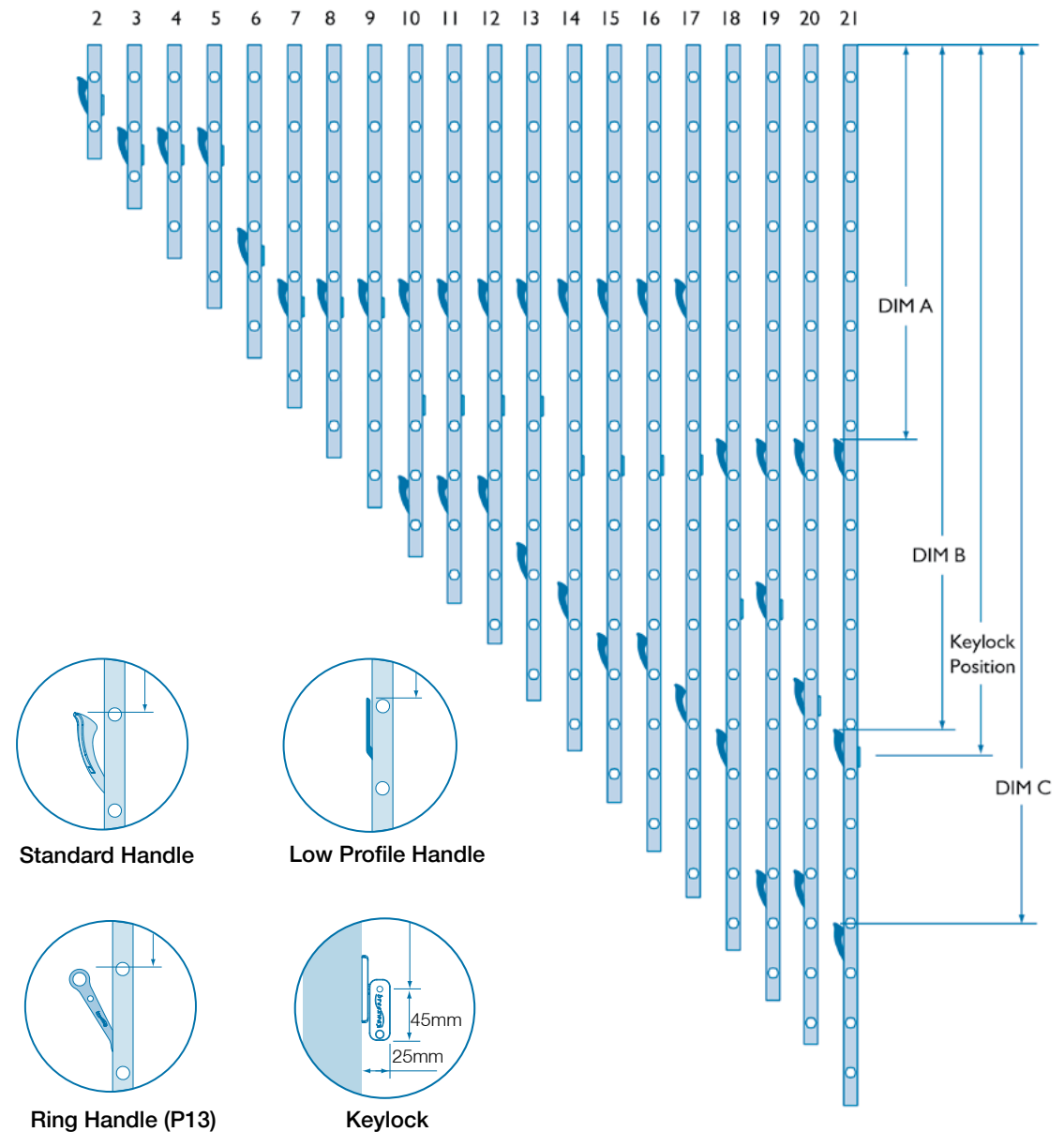
Formulas for Other Handle Positions

1. Low Profile Handle Position = Standard Handle Position – 3mm
2. Ring Handle Position = Standard Handle Position +22mm

No. of Blades	Banks of Blades Controlled from Head Downwards	Channel Length	Dim A	Dim B	Dim C	Keylock Positions
2	2	325	77			133
3	3	465	217			273
4	4	605	217			273
5	5	745	217			273
6	6	885	497			553
7	7	1025	637			693
8	8	1165	637			693
9	9	1305	637			693
10	7 3	1445	637	1197		973
11	7 4	1585	637	1197		973
12	7 5	1725	637	1197		973
13	8 5	1865	637	1337		973
14	9 5	2005	637	1477		1113
15	7 8	2145	637	1617		1113
16	7 9	2285	637	1617		1113
17	8 9	2425	637	1757		1113
18	9 9	2565	1057	1897		1533
19	9 4 6	2705	1057	1477	2317	1533
20	9 6 5	2845	1057	1757	2317	1813
21	9 7 5	2985	1057	1897	2457	1953

NOTES:

- Additional handles can be specified or relocated to another position. Each handle can operate a maximum of nine clips including at least one clip directly below the handle.
- Keylocks are always located on the opposite side to handles.
- Relocated keylocks are not available.

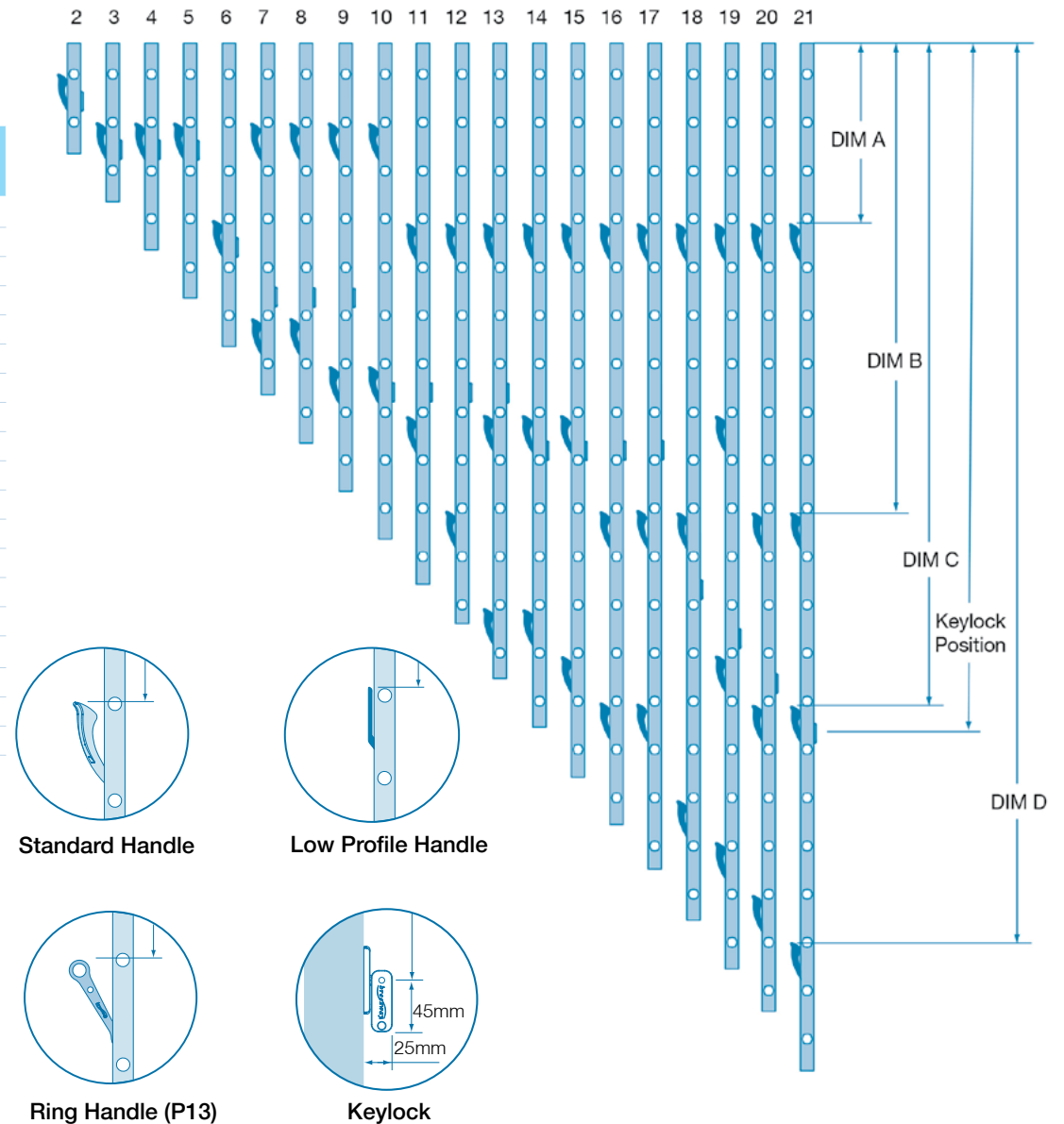


Altair® IGLU® Louvre System Standard Handle Positions for 800mm Blade Lengths

Formulas for Other Handle Positions

1. Low Profile Handle Position = Standard Handle Position – 3mm
2. Ring Handle Position = Standard Handle Position +22mm

No. of Blades	Banks of Blades Controlled from Head Downwards	Channel Length	Dim A	Dim B	Dim C	Dim D	Keylock Positions
2	2	325	77				133
3	3	465	217				273
4	4	605	217				273
5	5	745	217				273
6	6	885	497				553
7	4 3	1025	217	777			693
8	4 4	1165	217	777			693
9	5 4	1305	217	917			693
10	5 5	1445	217	917			973
11	6 5	1585	497	1057			973
12	6 6	1725	497	1337			973
13	6 4 3	1865	497	1057	1617		973
14	6 4 4	2005	497	1057	1617		1113
15	6 5 4	2145	497	1057	1757		1113
16	6 6 4	2285	497	1337	1897		1113
17	6 6 5	2425	497	1337	1897		1113
18	6 6 6	2565	497	1337	2177		1533
19	6 5 4 4	2705	497	1057	1757	2317	1533
20	6 6 4 4	2845	497	1337	1897	2457	1813
21	6 6 5 4	2985	497	1337	1897	2597	1953



NOTES:

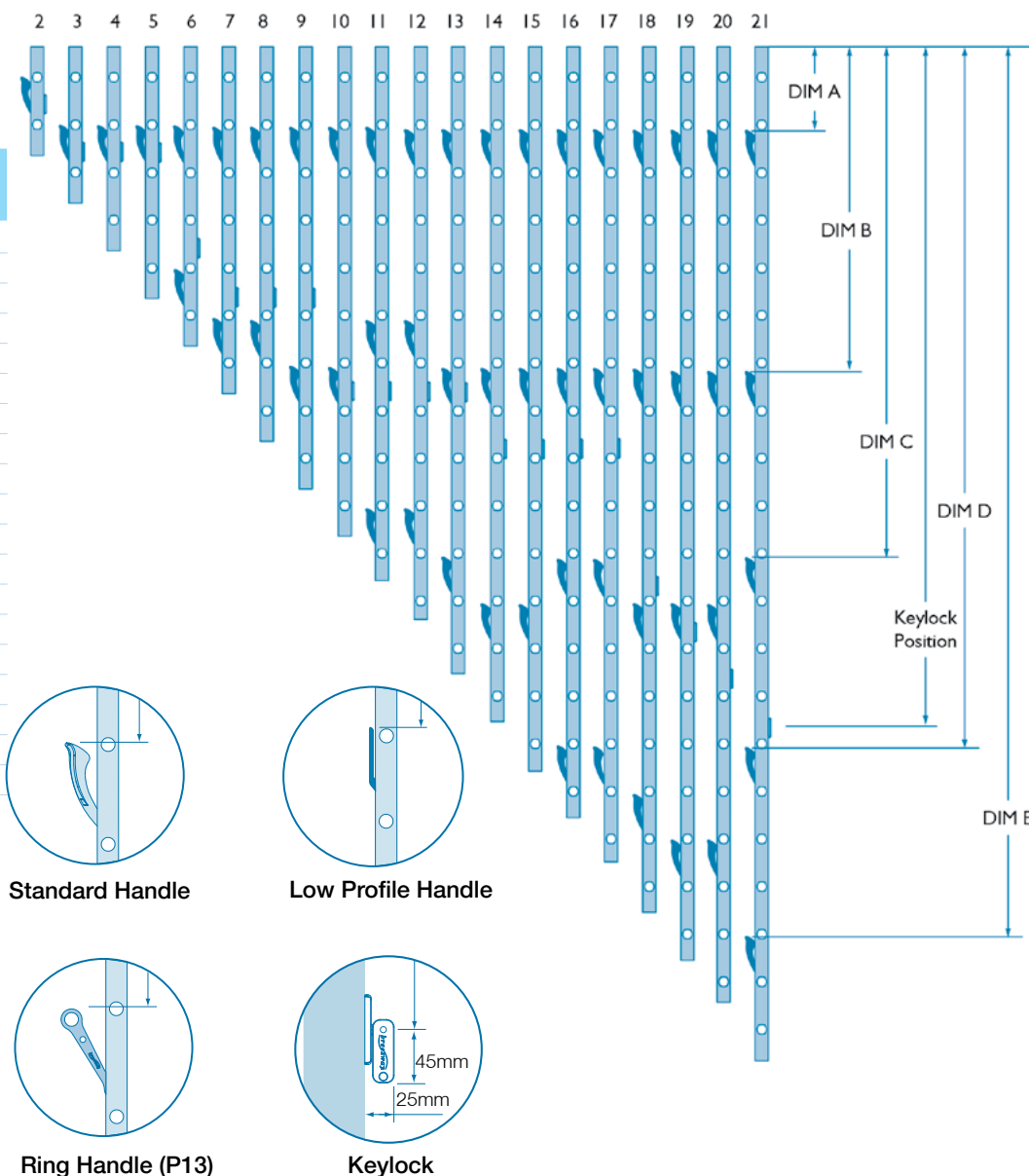
- Additional handles can be specified or relocated to another position. Each handle can operate a maximum of six clips including at least one clip directly below the handle.
- Keylocks are always located on the opposite side to handles.
- Relocated keylocks are not available.

Altair® IGLU® Louvre System Standard Handle Positions for 1,127mm Blade Length

Formulas for Other Handle Positions

1. Low Profile Handle Position = Standard Handle Position – 3mm
2. Ring Handle Position = Standard Handle Position +22mm

No. of Blades	Banks of Blades Controlled from Head Downwards	Channel Length	Dim A	Dim B	Dim C	Dim D	Dim E	Keylock Positions
2	2	325	77					133
3	3	465	217					273
4	4	605	217					273
5	5	745	217					273
6	3 3	885	217	637				553
7	4 3	1025	217	777				693
8	4 4	1165	217	777				693
9	5 4	1305	217	917				693
10	5 5	1445	217	917				973
11	4 4 3	1585	217	777	1337			973
12	4 4 4	1725	217	917	1337			973
13	5 4 4	1865	217	917	1477			973
14	5 5 4	2005	217	917	1617			1113
15	5 5 5	2145	217	917	1617			1113
16	5 4 4 3	2285	217	917	1477	2037		1113
17	5 4 4 4	2425	217	917	1477	2037		1113
18	5 5 4 4	2565	217	917	1617	2177		1533
19	5 5 5 4	2705	217	917	1617	2317		1533
20	5 5 5 5	2845	217	917	1617	2317		1813
21	5 4 4 4 4	2985	217	917	1477	2037	2597	1953



NOTES:

- Additional handles can be specified or relocated to another position. Each handle can operate a maximum of five clips including at least one clip directly below the handle.
- Keylocks are always located on the opposite side to handles.
- Relocated keylocks are not available.

Altair® 102mm Louvre Standard Handle Positions

Formulas for Other Handle Positions

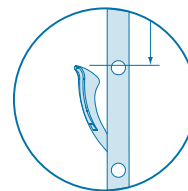
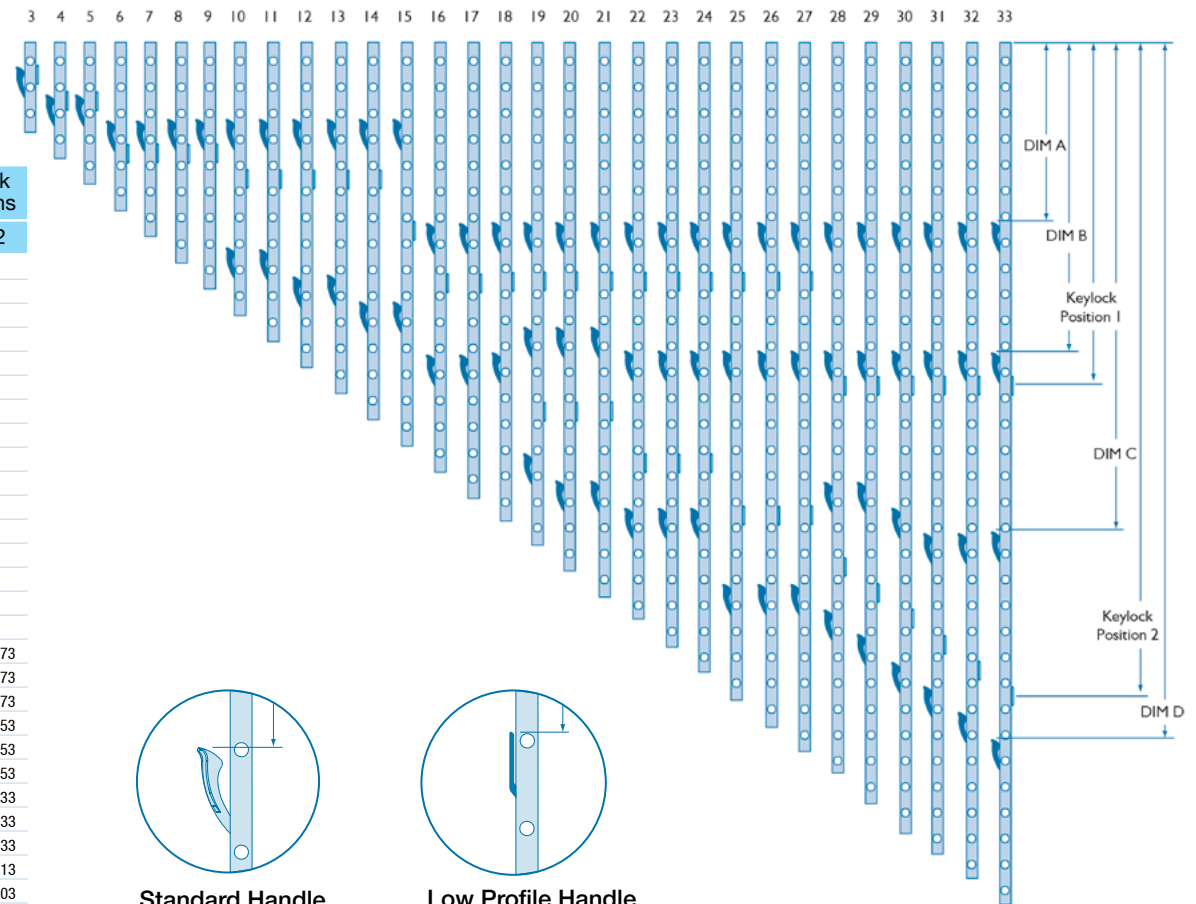
1. Low Profile Handle Position = Standard Handle Position – 8mm
2. Ring Handle Position = Standard Handle Position + 19mm*

* For 3 and 4 blade galleries: Ring Handle position = Standard Handle Position – 71mm

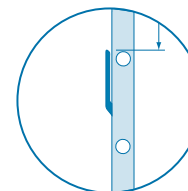
No. of Blades	Banks of Blades Controlled from Head Downwards	Channel Length	Dim A	Dim B	Dim C	Dim D	Keylock Positions	
							1	2
3	3	310	90				103	
4	4	400	180				193	
5	5	490	180				193	
6	6	580	270				373	
7	7	670	270				373	
8	8	760	270				373	
9	9	850	270				373	
10	6 4	940	270	720			463	
11	6 5	1030	270	720			463	
12	6 6	1120	270	810			463	
13	6 7	1210	270	810			463	
14	7 7	1300	270	900			643	
15	7 8	1390	270	900			643	
16	9 7	1480	630	1080			823	
17	9 8	1570	630	1080			823	
18	9 9	1660	630	1080			823	
19	9 5 5	1750	630	990	1440		823	1273
20	9 5 6	1840	630	990	1530		823	1273
21	9 5 7	1930	630	990	1530		823	1273
22	9 6 7	2020	630	1080	1620		823	1453
23	9 6 8	2110	630	1080	1620		823	1453
24	9 6 9	2200	630	1080	1620		823	1453
25	9 9 7	2290	630	1080	1890		823	1633
26	9 9 8	2380	630	1080	1890		823	1633
27	9 9 9	2470	630	1080	1890		823	1633
28	9 6 4 9	2560	630	1080	1530	1980	1183	1813
29	9 6 5 9	2650	630	1080	1530	2070	1183	1903
30	9 7 5 9	2740	630	1080	1620	2160	1183	1993
31	9 7 6 9	2830	630	1080	1710	2250	1183	2083
32	9 7 7 9	2920	630	1080	1710	2340	1183	2173
33	9 7 8 9	3010	630	1080	1710	2430	1183	2263

NOTES:

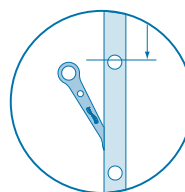
- Additional handles can be specified or relocated to another position. Each handle can operate a maximum of nine clips including at least one clip directly below the handle.
- Keylocks are always located on the opposite side to handles.
- Relocated keylocks are not available.



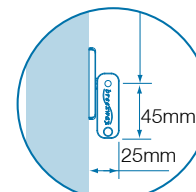
Standard Handle



Low Profile Handle

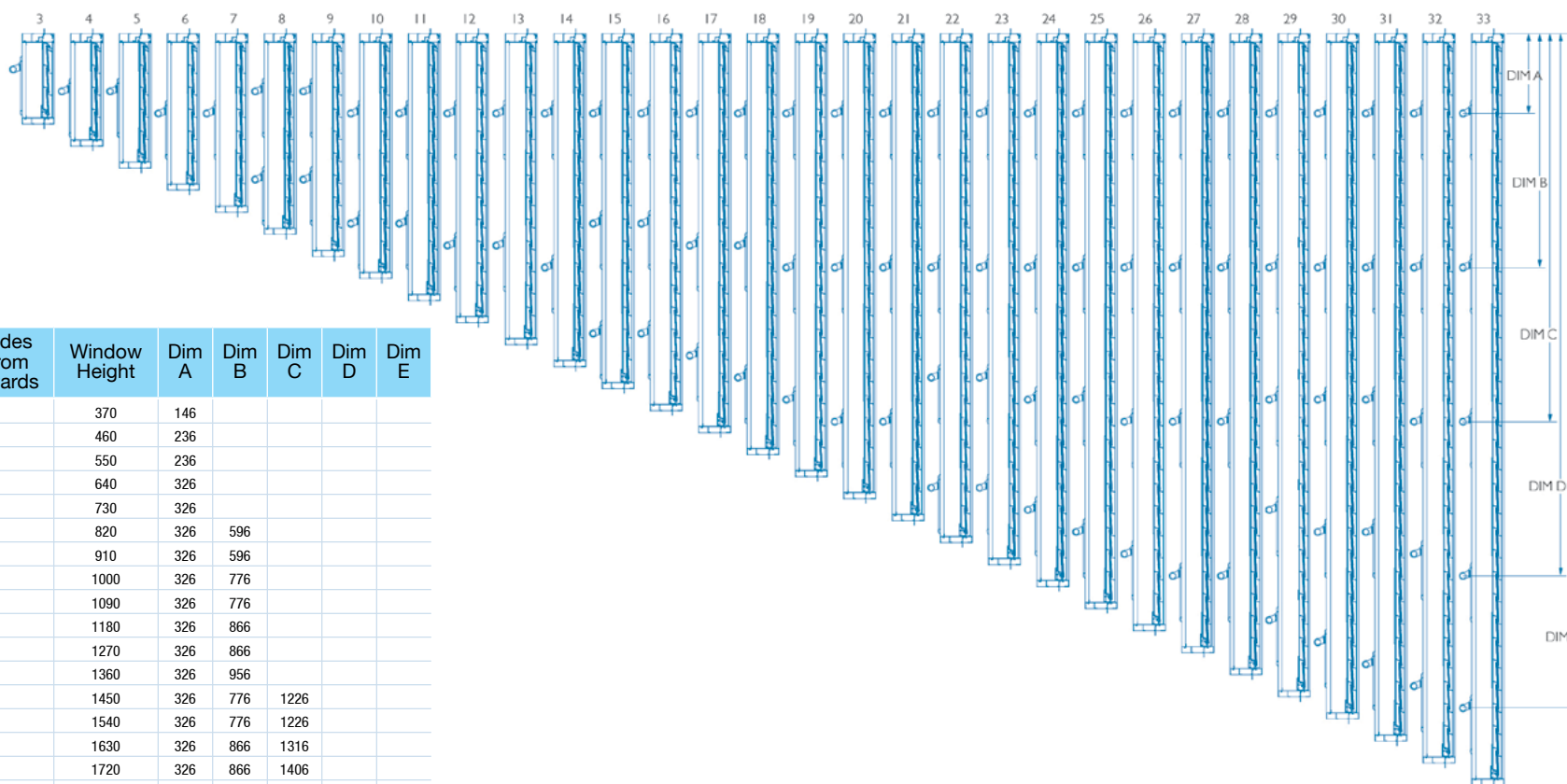


Ring Handle (P13)



Keylock

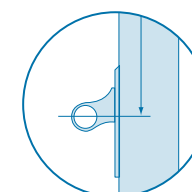
Innoscreen Window System Altair® 102mm Louvre Slide Handle Positions



No. of Blades	Banks of Blades Controlled from Head Downwards	Window Height	Dim A	Dim B	Dim C	Dim D	Dim E
3	3	370	146				
4	4	460	236				
5	5	550	236				
6	6	640	326				
7	7	730	326				
8	4 4	820	326	596			
9	4 5	910	326	596			
10	6 4	1000	326	776			
11	6 5	1090	326	776			
12	6 6	1180	326	866			
13	6 7	1270	326	866			
14	7 7	1360	326	956			
15	6 5 4	1450	326	776	1226		
16	6 5 5	1540	326	776	1226		
17	6 6 5	1630	326	866	1316		
18	6 6 6	1720	326	866	1406		
19	7 6 6	1810	326	956	1496		
20	7 7 6	1900	326	956	1586		
21	7 7 7	1990	326	956	1586		
22	7 6 5 4	2080	326	956	1406	1856	
23	7 6 5 5	2170	326	956	1406	1856	
24	7 6 6 5	2260	326	956	1496	1946	
25	7 6 6 6	2350	326	956	1496	2036	
26	7 7 6 6	2440	326	956	1586	2126	
27	7 7 7 6	2530	326	956	1586	2216	
28	7 7 7 7	2620	326	956	1586	2216	
29	7 6 6 5 5	2710	326	956	1496	1946	2396
30	7 6 6 6 5	2800	326	956	1496	2036	2486
31	7 6 6 6 6	2890	326	956	1496	2036	2576
32	7 7 6 6 6	2980	326	956	1586	2126	2666
33	7 7 7 6 6	3070	326	956	1586	2126	2756

NOTES:

- Additional handles and alternate handle positions are not available.



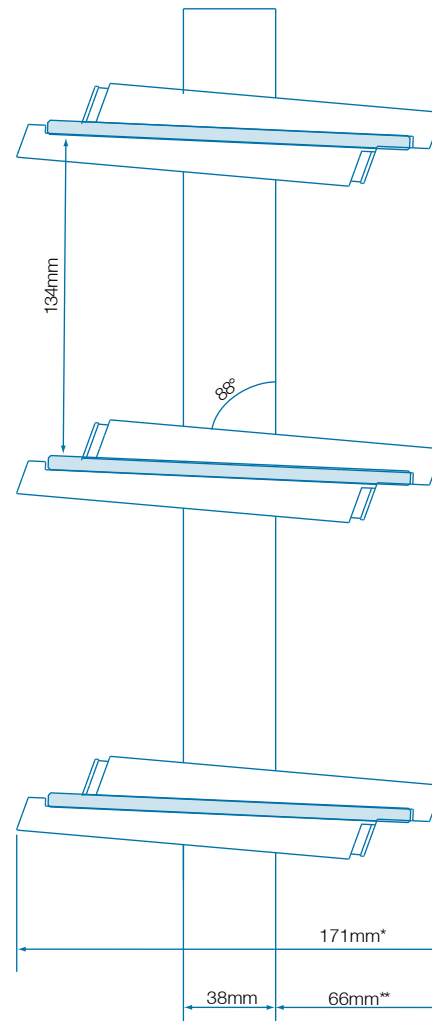
Innoscreen Slide Handle

Altair® Louvres With Restricted Opening

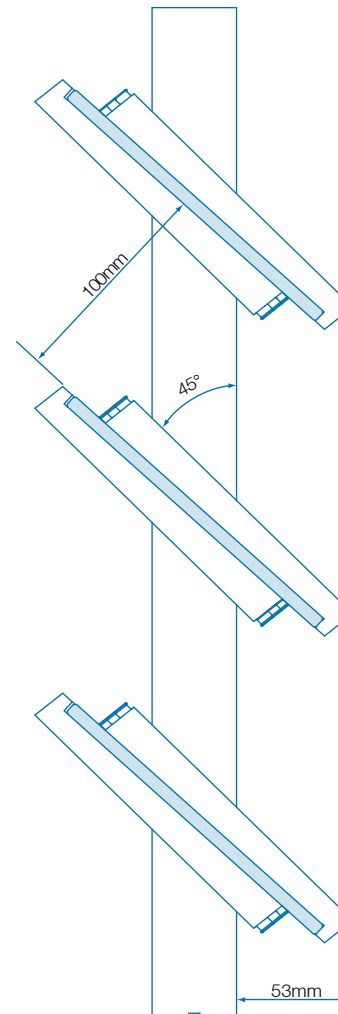
Altair Louvre Windows can be restricted to only allow a nominal opening of 80mm or 100mm between open single glaze blades, and 72mm between IGLU double glazed blades.

Restricted openings can be used to prevent clips from impacting screens in some frames, or to limit the size of objects able to pass through the open window.

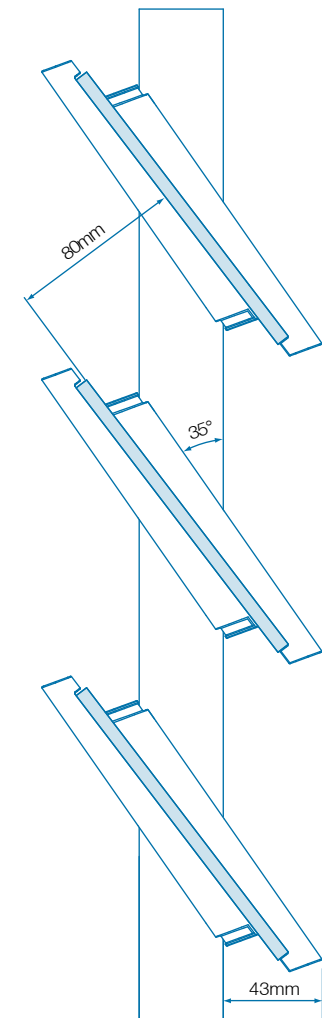
For details on compliance options for louvres adjacent to swimming pools and for fall prevention through openable windows see page 10.



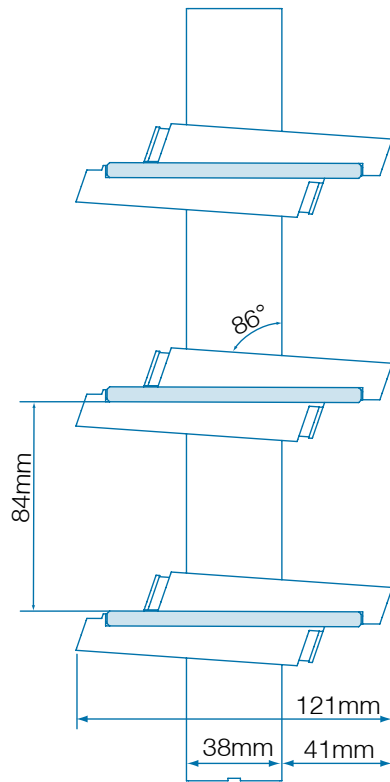
**152mm Louvre
Unrestricted Opening**



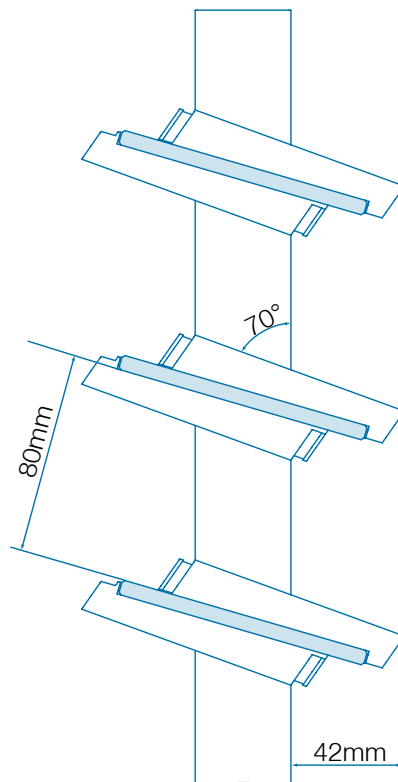
**152mm Louvre
100mm Restricted Opening**



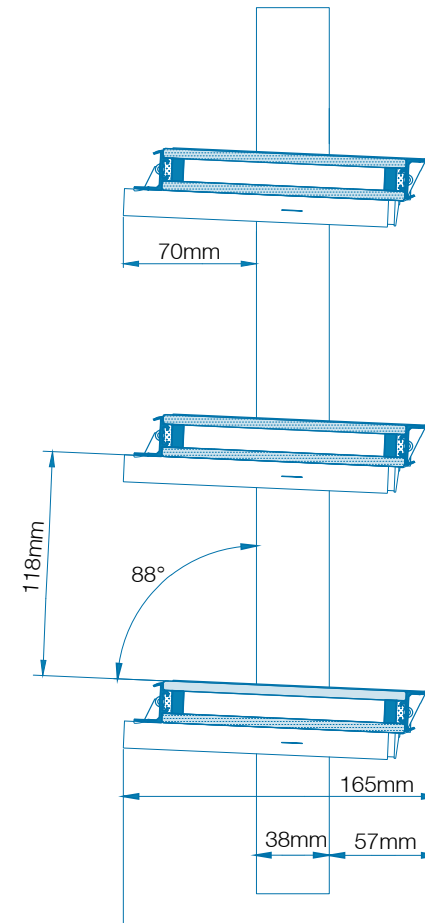
**152mm Louvre
80mm Restricted Opening**



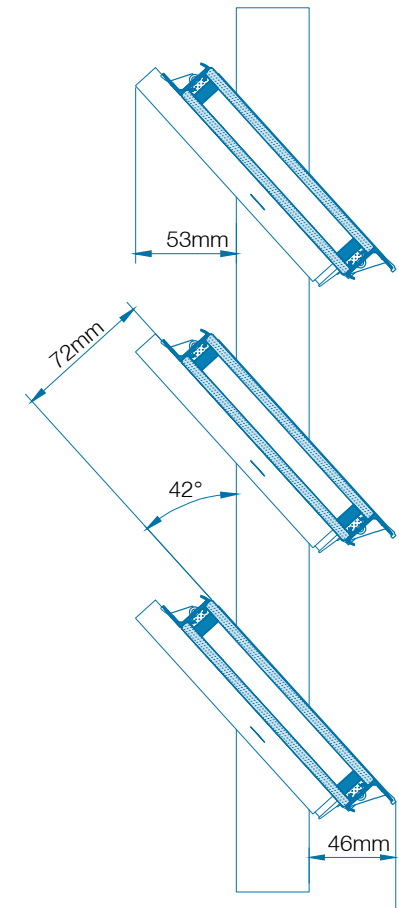
**102mm Louvre
Unrestricted Opening**



**102mm Louvre
80mm Restricted Opening**



**IGLU® System
Unrestricted Opening**



**IGLU® System
Restricted Opening**

Altair® Louvre Keylock

The Altair Keylock has been designed to be inconspicuous, strong and durable.

Improved Aesthetics

Housing the lock mechanisms internally results in a low profile design.
The brushed silver or black finish suits all aluminium finishes.

Strong & Durable

All metal construction and housing the mechanisms internally results in a strong, highly durable lock.

Easy Operation With Deep Jambs Or Reveals

The folding key design allows easy locking and unlocking even when situated right beside deep jambs or reveals.

Maintenance Free

No ongoing maintenance require besides normal cleaning. Tested and passed 15,000 lock & unlock cycles.



Keylock in unlocked position



Folding key

Glass Blades

Glass Type

Glass blades must be 6mm thick and monolithic. Laminated glass should not be used due to the risk of delamination.

Breezway Toughened Glass Blades

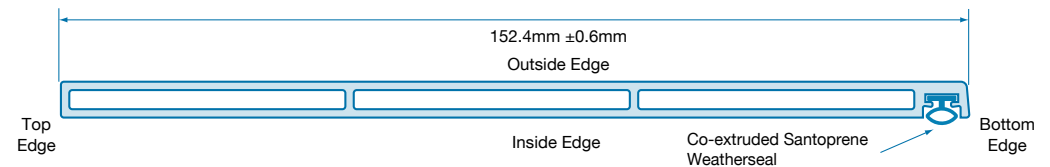
Regular and toughened glass blades are available directly from Breezway® Australia. Toughened glass should be specified in wet areas or areas where there is a chance of human impact as not only is toughened glass stronger but, if it does break, it produces small pieces of glass with square edges rather than jagged shards of glass which are likely to cause injury. Refer to Glass Standard AS1288 for detailed requirements.

Breezway toughened glass blades are processed to Breezway's demanding quality specifications which produces blades with a flatness tolerance of $\pm 0.35\text{mm}$ per metre. This exceptional flatness ensures excellent sealing and therefore improved wind and water performances. Breezway toughened glass blades are available in clear, clear low e, grey, green, satina and satinlite to allow matching to other windows.

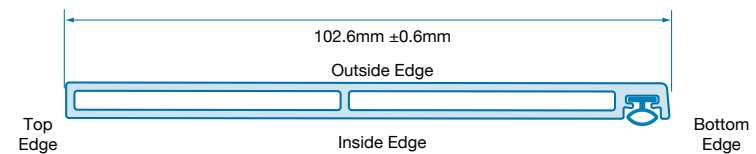
Extruded Aluminium Blades

Refined Design

Breezway aluminium blades feature low profile weatherseals and a clean design at the top of the blade for a minimalist, modern aesthetic.



152mm Aluminium Blade



102mm Aluminium Blade

Altair® Powerlouvre™ System

Anticipation of needs

When paired with intelligent control systems, automated Powerlouvre Windows can be opened and closed in anticipation of the building occupant's needs. Unlike manually operated windows which are normally opened and closed only once the building occupant has become uncomfortable.

More frequent use

With operation as simple and easy as the push of a button, Altair Powerlouvre windows will be opened and closed more frequently than windows which require more effort to operate, and therefore the benefits of the windows will be enjoyed more frequently.

Integrated Motor and Gearbox

The Altair Powerlouvre Window incorporates a motor and gearbox concealed within the Easyscreen Window Frame or within the head section, resulting in an automated louvre window with no visible motors, rods or arms.

Variety of Control Options

Control is possible via wall switches, remote control systems or integration into building management systems.

Frame Options

Altair Powerlouvre Windows are available as a complete Window System within the Breezway Easyscreen or Innoscreen Surround Frames, or in component form that can be installed in flat commercial frames or timber frames. (See the WINDOW SYSTEM and OTHER FRAMES sections for standard sizes)

Ease of use

Altair Powerlouvre Windows can easily be operated by young, aged or infirm building occupants



The Powerlouvre System motor is neatly concealed within the Easyscreen™ or Innoscreen® Frame or the Component Powerlouvre Head Section.

Powerlouvre™ System Operating Conditions

Tests Passed	
Cyclical open / closed	30,000 cycles
Salt mist	1,000 hours
Extreme humidity	90% humidity at 35 °C
Extreme heat	60 °C
Extreme cold	0 °C
Electromagnetic Compatibility	Complies with the requirements of EN61000-6-3 and AS/NZS 4251.1

Powerlouvre™ System Maintenance

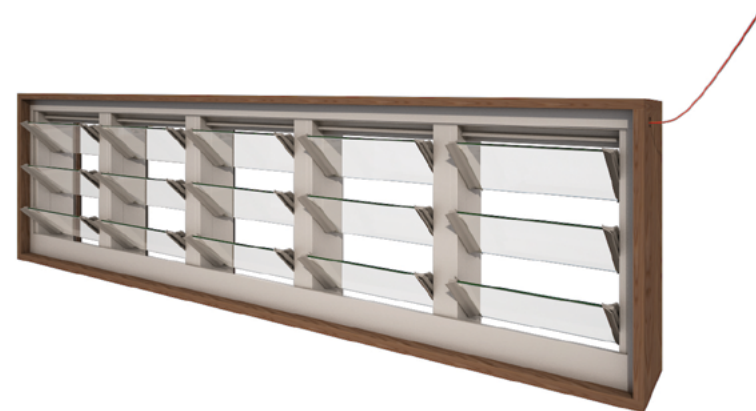
Breezway Powerlouvre Windows should be operated at monthly intervals. Frames should be cleaned periodically as per Breezway Care and Maintenance recommendations.

Powerlouvre™ System Opening Configurations

Powerlouvre Windows that are 2-9 blades high contain one motor per bay and are wired such that the entire window opens and closes simultaneously.

Powerlouvre Windows that are 10-18 blades high contain 2 motors per bay, one motor drives the blades in the top half of the bay and the other motor drives the blades in the bottom half of the bay. 10-18 Blade high Powerlouvre Windows are wired such that the blades in the top halves of all the bays form a bank that opens and closes simultaneously and the blades in the bottom halves of all the bays form a second bank that opens and closes simultaneously. The top and bottom banks can be operated independantly of each other.

Breezway™ Altair® Powerlouvre Window Opening Configurations		
No. of Blades	Motors per bay	Banks of Blades Controlled from Head Downwards
2	1	2
3	1	3
4	1	4
5	1	5
6	1	6
7	1	7
8	1	8
9	1	9
10	2	5 5
11	2	5 6
12	2	6 6
13	2	6 7
14	2	7 7
15	2	7 8
16	2	8 8
17	2	8 9
18	2	9 9



Powerlouvre™ System Electrical Requirements & Wiring

- Operating voltage: 24V DC
- Maximum allowed voltage: 29V DC
- Maximum constant current: 0.25A per motor
- Maximum startup current: 0.4A per motor
- Opening time: Approx 14 seconds
- Working temperature: -20°C to +60°C

NOTE: In extreme cold conditions the windows will not operate if there is excessive ice build up or if the louvre blades are frozen together.

Maximum Constant Current Requirements

Powerlouvre Window Type	Motors per bay	Maximum Constant Current Required	Maximum Instantaneous Start Up Current Required
2-9 Blades High	1	0.25 amps per bay	0.4 amps per bay
10-18 Blades High	2	0.5 amps per bay	0.8 amps per bay

The direction in which the Powerlouvre System moves is determined by the polarity of the low voltage current supplied. Once the Powerlouvre Window has fully opened or fully closed, an electronic circuit stops power being delivered to the motors to prevent the motor being damaged should power be supplied continuously.

Breezway® Transformers

Breezway supplies transformers (as optional extras) that have been specified to meet the particular requirements of Powerlouvre Windows.

- 240V AC input current.
- 24V DC output.
- Two model options with sufficient amps to power up to 6 or 14 Powerlouvre Motors.
- Built-in overload protection to prevent accidental short circuits from damaging the transformer.

Transformers should be installed in an easily accessible location. It is recommended that transformers are located in a position that enables easy power cycling.

Controlling Powerlouvre™ System

Control options include:

- Bell press style wall switches, which allow for simple open and close functionality. One button for open, and one for close.
- Breezway Powerlouvre Apptivate® Advance Control Units, which allow control via a touch sensitive wall plate, remote control via a smartphone application, or automatic operation in response to temperature or timer events.
- Building management systems, which allow control along with other automated building products and automatic operation in response to various sensors and inputs.

Uninterrupted Power Supply

Breezway supplies an Uninterrupted Power Supply (UPS) to allow users to continue operating their Powerlouvre Windows in the event of power loss until the UPS battery is depleted. The UPS is connected to and charges from 240V AC power. UPS output is also 240V AC and will require transformers to convert to 24V DC.

Up to 3 transformers can be plugged into the UPS. The quantity of windows that can be powered is dependant on the amperage of the transformers used.

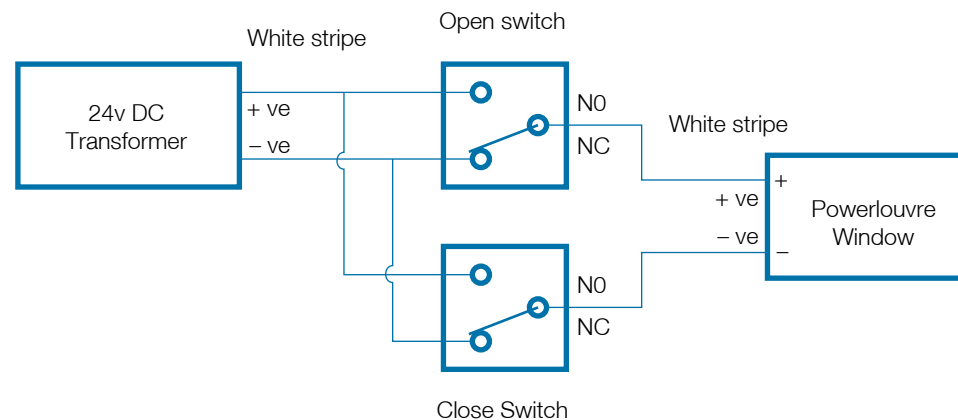
Powerlouvre™ System Wiring And Control Details - Control Via Wall Switches

The most basic way to control Powerlouvre Windows is via a pair of simple bell type wall switches (open and close).

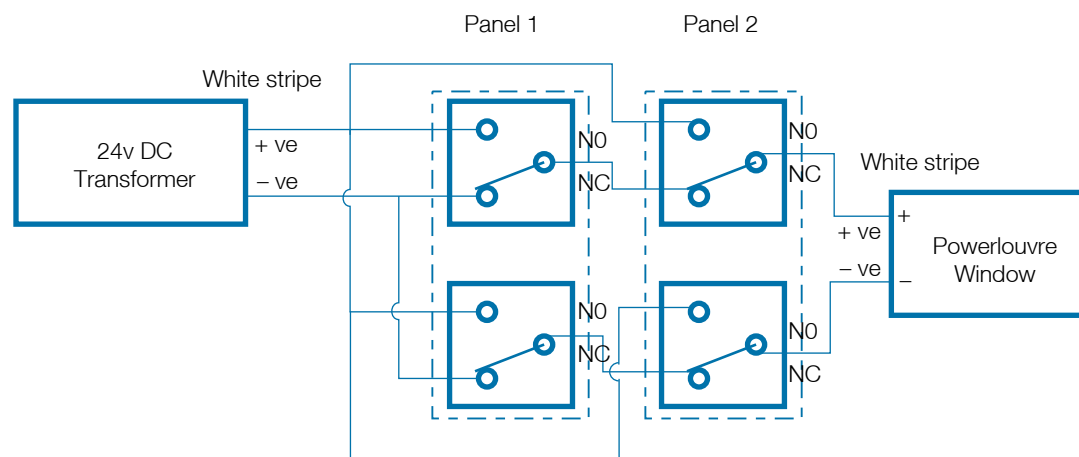
Switches are suggested below. It is recommended that non-latching, normally open, bell press switches be used. See your electrical wholesaler for switch options.

Switch Specification:

HPM	Part # 770XM
Clipsal	Part # 30M BPR



Single Switch Panel Wiring



Twin Switch Panel Wiring

Powerlouvre™ Apptivate® Advance Control Unit

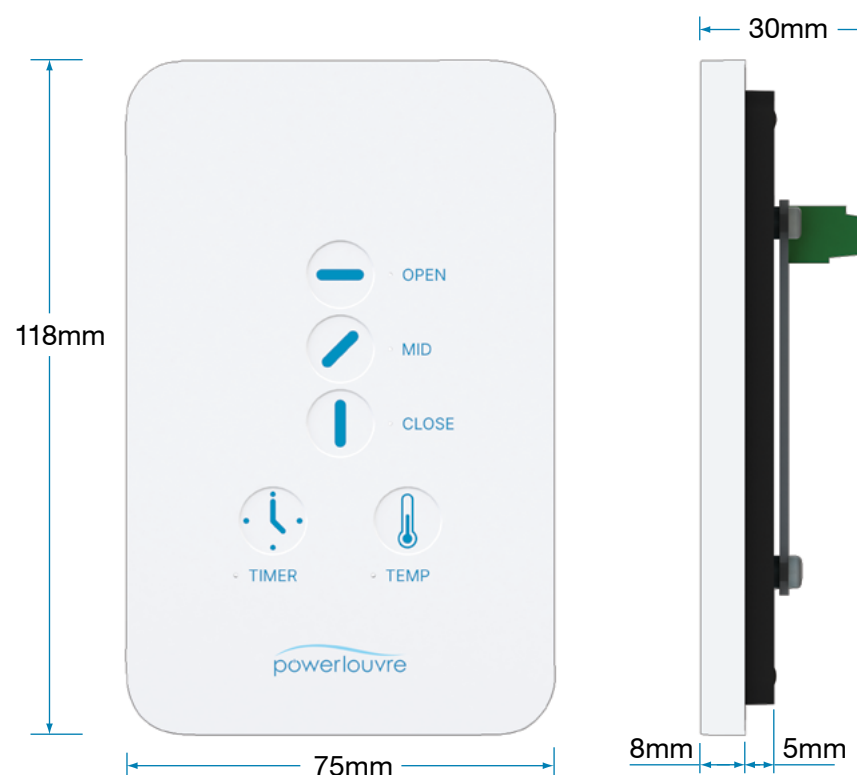
The Powerlouvre Apptivate Advance Control Unit is a plastic, touch-sensitive wall switch.

Features include:

- White, standard sized wall switch.
- Control of up to 12 Powerlouvre Motors on a single Control Unit.
- Fully open, fully close or open to an intermediate (half-open) position at a single touch.
- Precise control of opening angle by touching and then releasing when the window is in the desired position, or by touching another button to stop the window in the desired position.
- Automatic operation in response to an in-built temperature sensor.
- Bluetooth® LE module to allow control by and communication with compatible smartphones.
- Floating appearance, featuring a shadow line around the perimeter of the cover which allows it to visually stand off the wall.
- Wireless communication with the Breezway® Rain Sensor (Coming Soon).

Additional features accessible through the Powerlouvre™ Advance App:

- Remote control.
- Automatic operation in response to an in-built temperature sensor.
- Automatic operation in response to pre-set timers.
- 'Night mode' which adjusts the brightness of LED lights overnight to minimise potential sleep disruptions.
- Over the air firmware updates to the Apptivate Advance Control Unit when updated versions become available.



Apptivate® Advance Control Unit

Powerlouvre™ Advance App

The Apptivate® Advance Control Unit includes a Bluetooth® LE module which allows wireless communication between a compatible device running the Powerlouvre Advance App and the Apptivate Advance Control Unit.

Remote control.

The Powerlouvre Advance app enables:

- Remote opening and closing of each Apptivate Advance Control Unit. The range of the Bluetooth signal is approximately 10m - 20m. (The range will be maximised by maintaining a clear line of sight between the device running the Powerlouvre Advance App and the Apptivate Advance Control Unit.)
- Naming of Apptivate Advance Control Units for easy identification.
- An indication of the open/close position of the Powerlouvre Windows connected to each Apptivate Advance Control Unit.

Compatible devices.

Compatible devices will have Bluetooth® LE modules installed and have an iOS or Android operating system.

Devices include:

- Apple products running iOS 12 or newer.
- Devices running Android 10 or newer.

Security.

Establishing associations between the Powerlouvre Advance App and Apptivate Advance Control Units requires:

Close physical proximity between the Powerlouvre Advance App and the Apptivate Advance Control Unit, and;

An access code (defined by the first Powerlouvre Advance App to be associated to the Apptivate Advance Control Unit). For first time connections the PIN will be '0000'.

If the Access Code is forgotten, a factory reset button can be activated by snapping off the front cover plate of the Apptivate Advance Control Unit and hold the reset button down for a 5 seconds. Additionally, holding the reset button for 10 seconds will reset the Apptivate Advance Control Unit to its factory settings.

Security will be maximised by positioning the Apptivate Advance Control Unit in a location that restricts unauthorised access.

Automatic operation in response to temperature.

Temperatures can be set at which the Apptivate Advance Control Unit will:

- Automatically open the windows to naturally cool the room, or
- Automatically close the windows to retain warmth within the room.

Automatic response to temperature can be enabled or disabled:

- Remotely from the Powerlouvre Advance App, or
- Directly on the Apptivate Advance Control Unit.

NOTES:

- As the temperature sensor will be located within the wall cavity it may be susceptible to environmental conditions so the temperature readings will be indicative of the air temperature within the room, but will not exactly reflect the air temperature within the room.



Powerlouvre™ Advance App

Automatic operation in response to timers

Timer events (time of day and day of week) can be set to:

- Open the windows
- Move the window to an intermediate position
- Close the windows
- Begin responding automatically to temperatures.

This allows the windows to be set to operate in anticipation of the building occupant's daily routine. For example, opening before employees arrive to pre-cool the building, or responding to temperatures from when a homeowner goes to bed so that the windows close when the temperature drops in the early hours of the morning.

Timer events can be enabled or disabled:

- Remotely from the Powerlouvre™ Advance App, or
- Directly on the Apptivate® Advance Control Unit.

Control of multiple Apptivate® Advance Control Units

Up to 10 Apptivate Advance Control Units can be associated to each Powerlouvre Advance App allowing building occupants to control windows around their home from their Powerlouvre Advance App. Some mobile devices may have Bluetooth connection limits that reduce this number.

For ease of identification:

- Each of the Apptivate Advance Control Units can be given a customised name.
- The Powerlouvre Advance App will indicate any Apptivate Advance Control Units which are out of range, or with which a Bluetooth® LE connection cannot be made.

For maximum control and ease of use, all the Apptivate Advance Control Units associated to a Powerlouvre Advance App can be operated simultaneously or independently.

Control by multiple Powerlouvre™ Advance Apps

Associations can be established between multiple Powerlouvre Advance Apps and each Apptivate Advance Control Unit, to allow all family members to control the windows from their smartphones.

NOTES:

- Only one Powerlouvre Advance App will be able to maintain an active Bluetooth® LE connection with an Apptivate Advance Control Unit at any given time. A second device can take control if the initial device is inactive with the screen on for 60 seconds, or 10 seconds if the initial device's screen is off, or the App put to sleep.

Apptivate® Advance Control Unit Standard Wiring

Powerlouvre Motors and Apptivate Advance Control Units require 24V DC power. For ease of wiring the Apptivate Advance Control Unit senses the polarity of the current provided from the transformer and automatically adjusts accordingly.

Up to 12 Powerlouvre Motors can be wired to each Apptivate Advance Control Unit. It is recommended that transformers are located in a position that enables easy power cycling.

NOTES:

- The Apptivate Advance Control Unit is incompatible with some switch mode transformers due to high levels of electrical noise (eg Meanwell GS40 series).

Building Management System Compatibility

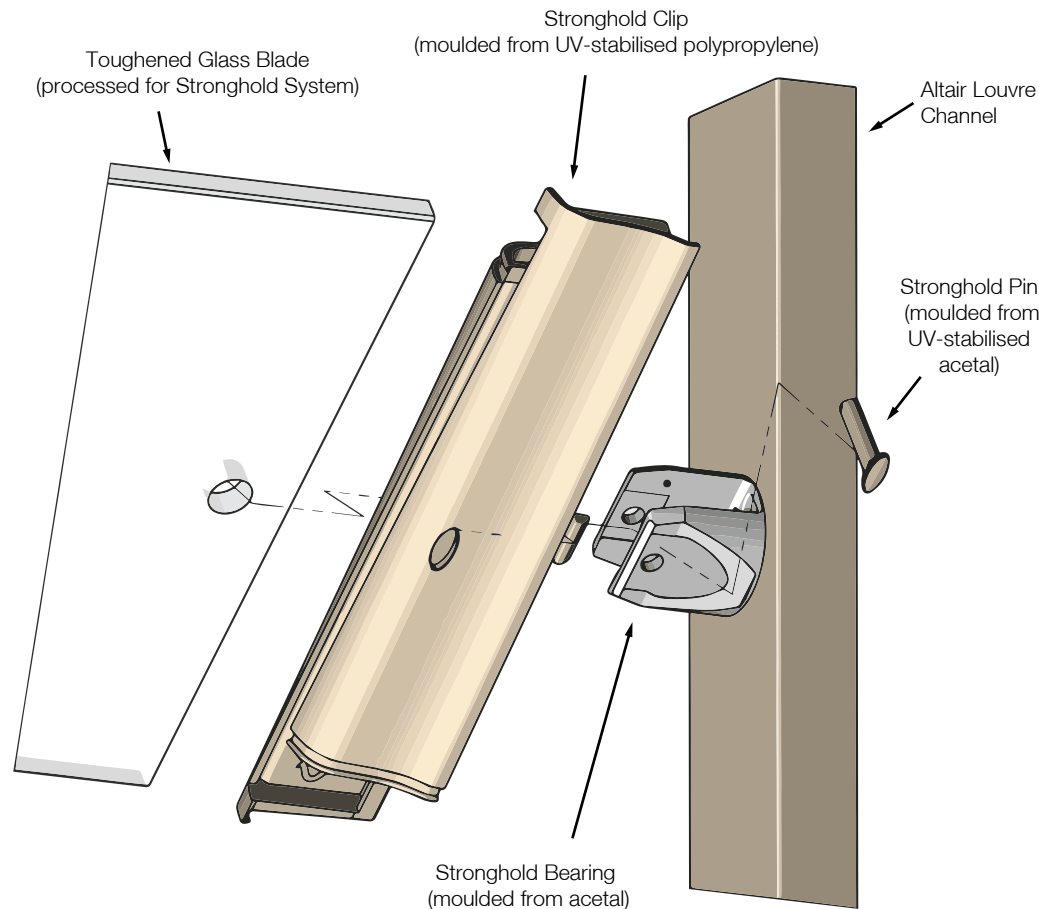
The Altair® Powerlouvre Window System has been reviewed for compatibility by the leading suppliers of building management systems. When considering integration into a building management system, the following should be considered:

- Breezway does not supply the various sensors which could be used to instigate opening or closing of the windows (eg temperature or rain sensors).
- Transformer requirements may differ from the requirements of Powerlouvre Windows controlled by Apptivate Advance Control Units.
- The Powerlouvre Window System does not include an inbuilt electronic mechanism to inform the building management system of its current open or close position.
- Powerlouvre Motors include limit switches which prevent the motors from continuing to attempt to open or close the window once the window is fully open or fully closed, thereby preventing damage to the motors and electronics.

Apptivate Advance Control Units are not compatible with building management systems.



Altair® Louvres with the Stronghold® System



Viewed from inside

NOTES:

- Louvre blades are mechanically retained within the clips by the Stronghold System.
- Patented design.

Blade Retention System

Blades are retained in Stronghold Clips by a pin that passes through the clips, bearing and blade. Once installed, the pins cannot be removed without tools and the blades are prevented from being removed from the clips. Pins are visible on the inside/underside of the clips.

High Rise Applications

Breezway Altair Stronghold Louvres are fit for purpose for installation more than 2 metres above ground level. As the entire glazed area can be opened to allow airflow they can be used to maximise natural ventilation and cooling in multi level applications. They are also ideal for creating winter gardens as they can be opened for ventilation in warmer weather or closed for protection in colder weather.

Frame Options

Altair Stronghold Louvre Windows are available as complete window systems within the Breezway Easyscreen®, Innoscreen® and SL2® Window Systems or in component form for installation into other manufacturer's framing systems.

Fall Prevention

Altair Louvre Windows with the Stronghold System are ideal for use in bedrooms, early childhood centres and other situations where fall prevention measures are required by the BCA. With openings on both sides of every blade, they deliver real ventilation benefits for naturally cool, healthy and safe spaces. BCA compliance is proven by successful testing to the Industry Code of Practice "ICP.005 - Protection of Openable Window Testing Specification"

Blade Options

Processed and toughened glass and processed aluminium blades can be used in the Stronghold System. Heat soak testing of glass blades already processed for use with the Stronghold System is also available. The Altair Stronghold System is available for use with both 152mm and 102mm high blades.

Blade Type Compatibility

	152mm High	102mm High
Annealed glass	N	N
Toughened glass	Y	Y
Aluminium	Y	Y

Powerlouvre™ System Compatibility

Altair Stronghold Clips are fully compatible with the Powerlouvre Systems and have no impact on minimum and maximum Powerlouvre Window sizes.

Maintenance

If blades need to be removed from an Altair Stronghold Louvre Window or if broken blades need to be replaced, the pins must be removed. The removal process requires tools and will destroy the pins so new pins will be required when blades are re-installed.

Compliance With Balustrading Requirements

The Stronghold System is a window, not a balustrade system. The Stronghold System has been tested to AS2047 "Windows in Buildings" and has completed static load, swing bag and sphere tests. Test reports are available from the Breezway website. It is the responsibility of the building designer to specify systems and products that meet the barrier and balustrade requirements for a building.

Window Sizes

Window Size Constraints

The Altair Product Performance Warranty size constraints for Ultimate Limit State Pressure, Serviceability Limit State Pressure and Water Pass must be adhered to in order to ensure compliance with AS2047.

Standard Heights

The standard heights of Breezway Window Systems with Altair Stronghold Louvres are identical to the standard heights of Breezway Window Systems with regular Altair Louvres.

Off-Standard Heights

It is recommended that, whenever possible, Altair Louvre Windows with the Stronghold System should be designed to a standard height. This will reduce the product cost and ensure effective opening of all blades.

Some off-standard heights are unavailable when using the 102mm Altair Louvre Galleries with the Stronghold System.

	Unavailable Off-Standard Heights when using 102mm Altair Galleries with the Stronghold System
Easyscreen Window System	Standard height + 26mm to standard height + 36mm
Innoscreen Window System	Standard height + 25mm to standard height + 36mm
SL2 Window System	Standard height + 19mm to standard height + 30mm
Altair Component System	Standard height + 19mm to standard height + 30mm

Altair® IGLU® Louvre System**NOTES:**

- Louvre blades are mechanically retained within the clips by the Stronghold System.

High Energy Performance

The 22mm IGLU® Blade, comprising of 5mm Low E glazing, 12mm Argon filled spacer, and another layer of 5mm Low E, offers the highest thermal performance of any louvre. This double glazed louvre is ideal for use in colder climates, or anywhere higher levels of thermal insulation are required.

Elegantly Robust Clip

The IGLU® Clip utilises the Breezway Stronghold® System, granting superior blade retention, with all the other benefits the Stronghold® System offers. The stepped nature of the IGLU® blade allows for the internal glazing layer to be retained in the clip, while the outer glazing layer finishes flush with the clip. This allows for a completely flat aesthetic to the outside of the window. All IGLU Clips are supplied in Black to offer a neat and uniform look to the window..

Acoustic Performance

The double glazed nature of the Breezway Altair® IGLU® System offers superior sound isolation to that of single glazed louvres, able to achieve an Rw.30 making it an ideal solution for applications near main roads, or anywhere else peace and quiet is desired.

Frameless Glazing

Breezway Altair® IGLU® Blades are assembled in a way that does not require thermally compromising aluminium framing to each blade. Instead, the blades are capped top and bottom by rubber blade-to-blade seals, embedded into the Insulated Glazing Unit (IGU) sealant, with a clean ceramic print running the perimeter of each blade to conceal the IGU spacer, while still drawing the eye through to the view outside.

Blade Options

IGLU® Blades come in 4 standard sizes; 300mm, 500mm, 800mm, and 1,127mm. This allows for standard window widths of approximately 400mm, 600mm, 900mm, and 1,200mm in most 3rd party framing systems.

Frame Options

Altair® IGLU® Louvre Windows are available as complete window systems within the Breezway Easyscreen® Window System or in component form for installation into other manufacturer's framing systems.

IGLU® Blades



Stock Blade Sizes

IGLU blades are available in 4 different stock lengths.

- 300mm*
- 500mm
- 800mm
- 1,127mm

These blade sizes allow for standardised window widths, dependent on the framing system used.

* Please note that the 300mm blade width is not available with the Powerlouvre™ System.

IGLU blades comprise of two layers of 5mm toughened Low E with a 12mm Argon filled spacer, and utilise the Stronghold® System for superior blade retention. IGU spacer concealed behind a mirrored ceramic print.

Window Sizes

Window Size Constraints

The Altair Product Performance Warranty size constraints for Ultimate Limit State Pressure, Serviceability Limit State Pressure and Water Pass must be adhered to in order to ensure compliance with AS2047.

Standard Heights and Widths

Due to the stock nature of the IGLU Louvre System, standard heights apply as well as standard widths for each system. Standard size charts on page 36.

Powerlouvre™ Compatibility

Altair IGLU Louvre System is compatible with the Powerlouvre Systems. However, the 300mm blade width is unavailable due to minimum Powerlouvre Window sizes.

IGLU® Louvre System in Breezway Window System Configurations

Product		Description
IGLU Louvre System		A single IGLU louvre bay contained within a single frame..
Horizontal IGLU Louvre and Fixed Lite Combination		Horizontal combination IGLU Louvre and IGLU Fixed Lite combinations contained within a single Breezway Window System. Available Fixed Lite thicknesses: 18mm, 20mm and 24mm available in Easyscreen Window Systems.

Standard Heights

Standard Height sizes are measured from bottom of visible metal to top of visible metal.

Breezway™ Altair® IGLU® System Standard Heights (mm)				
No. of Blades	Easyscreen™ Window System	Easyscreen™ Powerlouvre™ Window System	IGLU® Galleries with Weatherstrip*	IGLU® Powerlouvre™ Galleries with Weatherstrip*
2	376	376	335	365
3	516	516	475	505
4	656	656	615	645
5	796	796	755	785
6	936	936	895	925
7	1076	1076	1035	1065
8	1216	1216	1175	1205
9	1356	1356	1315	1345
10	1496	1496	1455	1485
11	1636	1636	1595	1625
12	1776	1776	1735	1765
13	1916	1916	1875	1905
14	2056	2056	2015	2045
15	2196	2196	2155	2185
16	2336	2336	2295	2325
17	2476	2476	2435	2465
18	2616	2616	2575	2605
19	2756	-	2715	-
20	2896	-	2855	-
21	3036	-	2995	-

*Height without weatherstrip = -10mm for manual, -40mm for Powerlouvre™.

Standard Widths

Breezway Altair® Easyscreen™ Window System Widths with IGLU® Standard Blade Lengths (mm) at Equal Bays				
No. of Bays	300mm Blade Length	500mm Blade Length	800mm Blade Length	1127mm Blade Length
1	381	581	881	1208
2	757	1157	1757	2411
3	1133	1733	2633	3614
4	1509	2309	3509	4817*
5	1885	2885	4385*	-
6	2261	3461	5261*	-

* Only available in Custom Black, CAA, Pearl White Gloss, or by special order.

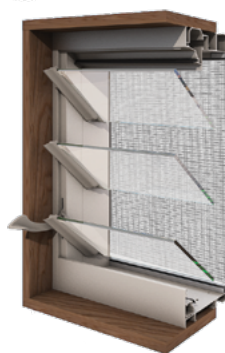
NB: Widths not shown in the table can be achieved via coupling or via manipulation of fixed lite bay widths.

Opening Width when using Breezway Altair IGLU Galleries in Component Form

Daylight opening = IGLU Blade Length + 51mm

Altair® Louvre Window Systems

Easyscreen™ Window System



Innoscreen® Window System



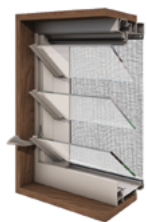
SL2® Window System



Frame depth	131mm	131mm	52mm
Frame construction	Aluminium	Aluminium	Aluminium
Visible fixings	None	None	None
Altair Louvre Bays	Yes	Yes	Yes
Altair IGLU® Louvre Bays	Yes	No	No
5mm & 6mm Fixed Lite Bays	Yes*	Yes*	Yes*
18mm, 20mm & 24mm Fixed Lite Bays	Yes*	No	No
Screen position	Outside	Inside	No screen
Powerlouvre™ compatibility	Yes	Yes	No
Handle options	Standard handle Low Profile Handle Ring handle No handles (Powerlouvre)	Slide handle No handles (Powerlouvre)	Standard handle Low Profile Handle Ring handle
Stronghold® compatibility	Yes	Yes	Yes
Security options	Keylocks Integrated solid bars Barrier screens	Barrier screens	Keylocks
Reveals & flashing	Available	Available	Available
Compatible sub framing	Available	Available	None

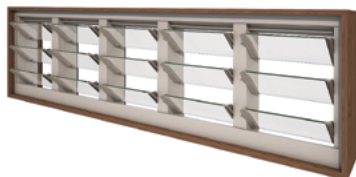
* Fixed Lite maximum bay area of 4m² applies for Breezway framing.

Easyscreen™ Window System



Single Louvre Window Bay

A single louvre window bay contained within a single frame.



Multiple Louvre Window Bays

Multiple louvre window bays contained within a single frame, separated by mullions.



Horizontal fixed light combinations

Horizontal combination louvre fixed light windows are contained within a single frame with the louvres and the fixed lights separated with mullions.



Security bars

The Easyscreen Window System features an (optional) integrated D bar security system. To suit 152mm louvre only.

Easyscreen™ Window System Accessories

Easyscreen Coupler



Couple Easyscreen Window Systems together. (2mm extra height or width)

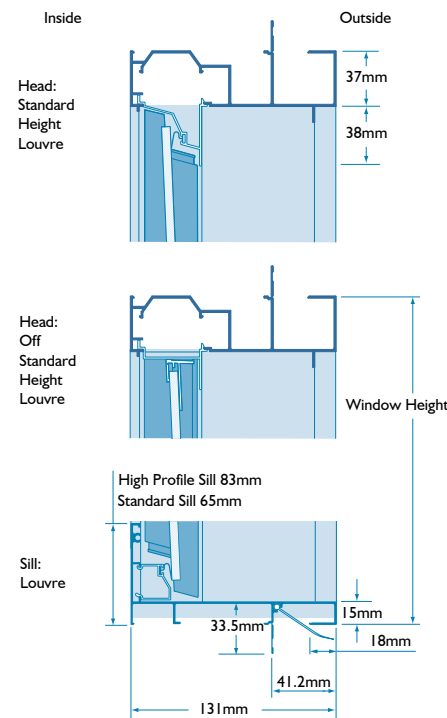
Easyscreen Cover Plate



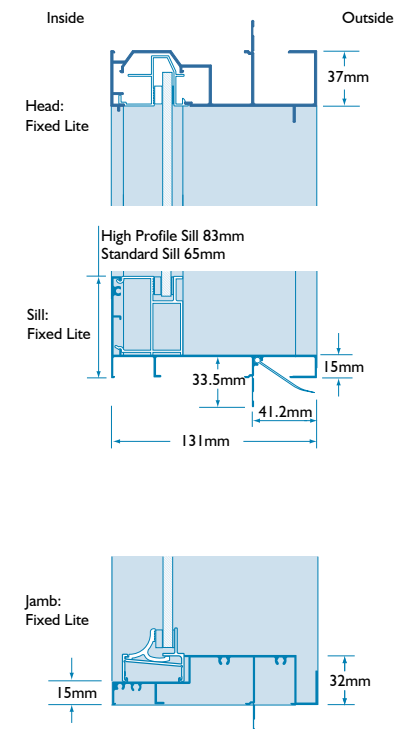
When the Easyscreen Window System extends beyond the building frame, a cover plate can be used to trim the assembly.

(2mm extra height or width per side to which cover plates are applied)

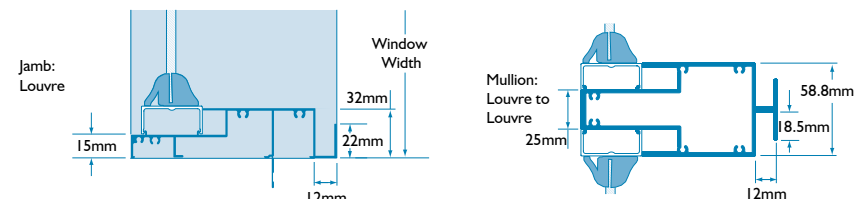
Easyscreen™ Louvre Window System



Easyscreen™ Fixed Light Window System



Easyscreen Mullion



NOTES:

- Design Registrations apply.
- High Profile Sill to be used where >300Pa Water Penetration Resistance is required. 102mm Louvres are not suitable for Innoscreen Window Systems using the High Profile Sill as the blades controlled by the bottom handle will only open to 28°.

Innoscreen® Window System



Single Louvre Window Bay

A single louvre window bay contained within a single frame.



Multiple Louvre Window Bays

Multiple louvre window bays contained within a single frame, separated by mullions.



Horizontal fixed light combinations

Horizontal combination louvre fixed light windows are contained within a single frame with the louvres and the fixed lights separated with mullions.

Innoscreen Window System Accessories

Innoscreen Jamb to Jamb Coupler



Use to couple Innoscreen Window Systems together. (2mm extra width)

Innoscreen Head to Sill Coupler



Use to couple Innoscreen Window Systems together. (2mm extra height)

Innoscreen Jamb and Sill Cover Plate



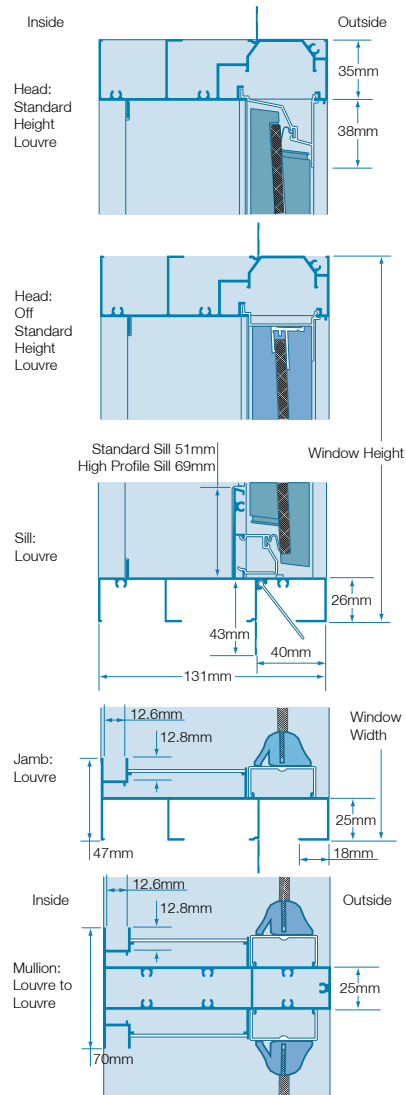
When the Innoscreen Window System extends beyond the building frame, a cover plate can be used to trim the assembly. (2.0mm extra height or width to sides to which cover plates are applied)

Innoscreen Head Cover Plate

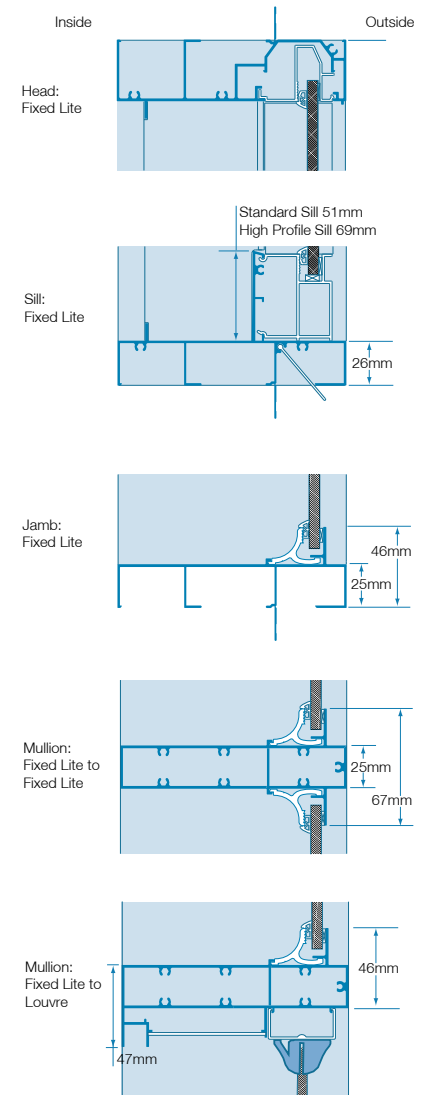


When the Innoscreen Window System extends beyond the building frame, a cover plate can be used to trim the assembly. (2.0mm extra height to side to which cover plates are applied)

Innoscreen® Louvre Window System



Innoscreen® Fixed Lite Window System

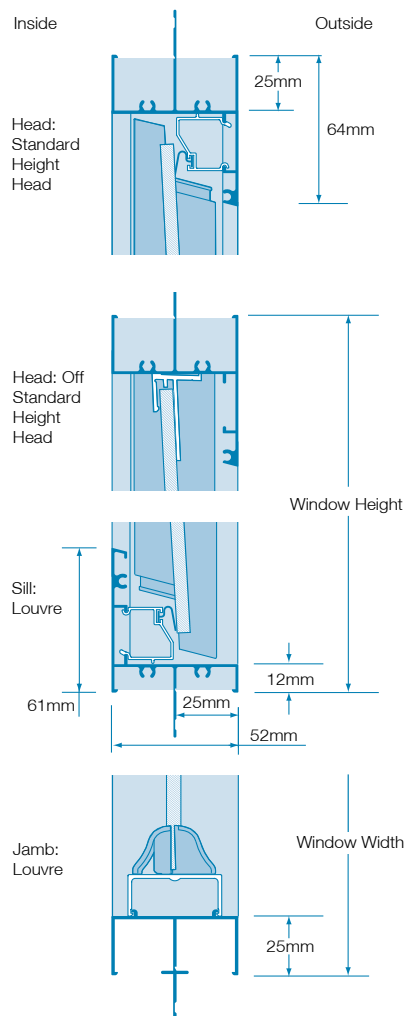


NOTES:

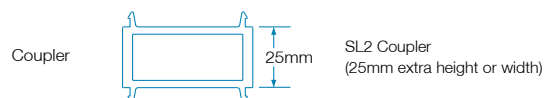
- High Profile Sill to be used where >300Pa Water Penetration Resistance is required. 102mm Louvres are not suitable for Innoscreen Window Systems using the High Profile Sill as the blades controlled by the bottom handle will only open to 28°.

SL2® Window System

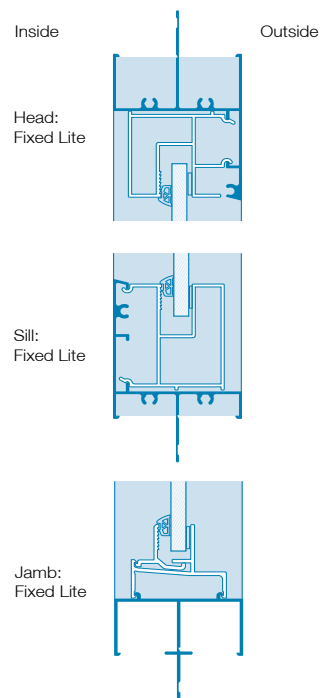
SL2 Louvre Window System



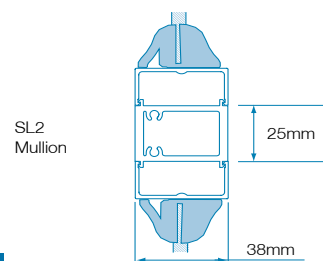
SL2 Window System Accessories



SL2 Fixed Light Window System



SL2 Mullion



Standard Heights

No. of Blades	Breezway Window Systems with 152mm Galleries		
	Easyscreen™ Window System	Innoscreen® Window System	SL2® Window System
Standard Height (mm)	Standard Height (mm)	Standard Height (mm)	Standard Height (mm)
2	371	380	358
3	511	520	498
4	651	660	638
5	791	800	778
6	931	940	918
7	1071	1080	1058
8	1211	1220	1198
9	1351	1360	1338
10	1491	1500	1478
11	1631	1640	1618
12	1771	1780	1758
13	1911	1920	1898
14	2051	2060	2038
14 Ext	2100	2100	2100
15	2191	2200	2178
16	2331	2340	2318
16 Ext	2400	2400	2400
17	2471	2480	2458
18	2611	2620	2598
19	2751	2760	2738
20	2891	2900	2878
21	3031	3040	3018

Maximum window widths:

The maximum width of a single continuous window with multiple bays is 4000mm. Maximum widths greater than 4000mm are possible through coupling two single continuous windows on site or at the window fabricator's factory. Standard Height sizes are measured from bottom of visible metal to top of visible metal.

Please Note:

- Standard Heights are measured from the lowest visible metal to the uppermost visible metal of the frame and excludes fins.
- Off Standard Heights that are more than 5mm greater than or less than a Standard Height will have a top fixed blade to achieve the specified height. Off Standard heights that are within 5mm of a Standard Height will not have a fixed top blade.
- Refer to the product performance warranty on possible height restrictions for different blade types.
- Standard sizes will save money and improve lead times.

Breezway Window Systems with 102mm Galleries

No. of Blades	Easyscreen™ Window System	Innoscreen® Window System	SL2 Window System
	Standard Height (mm)	Standard Height (mm)	Standard Height (mm)
3	361	370	348
4	451	460	438
5	541	550	528
6	631	640	618
7	721	730	708
8	811	820	798
9	901	910	888
10	991	1000	978
11	1081	1090	1068
12	1171	1180	1158
13	1261	1270	1248
14	1351	1360	1338
15	1441	1450	1428
16	1531	1540	1518
17	1621	1630	1608
18	1711	1720	1698
19	1801	1810	1788
20	1891	1900	1878
21	1981	1990	1968
22	2071	2080	2058
22 Ext	2100	2100	2100
23	2161	2170	2148
24	2251	2260	2238
25	2341	2350	2328
26	2431	2440	2418
27	2521	2530	2508
28	2611	2620	2598
29	2701	2710	2688
30	2791	2800	2778
31	2881	2890	2868
32	2971	2980	2958
33	3061	3070	3048

Easyscreen™ and Innoscreen® Powerlouvre™ Window Sizes

Standard Heights are measured from the lowest visible metal to the uppermost visible metal of the frame and excludes fins. For IGLU Louvre standard heights, refer to page 36.

Breezway Powerlouvre Window Systems with 152mm Galleries		
	Easyscreen Window System	Innoscreen Window System
No. of Blades	Standard Height (mm)	Standard Height (mm)
2	371	380
3	511	520
4	651	660
5	791	800
6	931	940
7	1071	1080
8	1211	1220
9	1351	1360
10	1491	1500
11	1631	1640
12	1771	1780
13	1911	1920
14	2051	2060
15	2191	2200
16	2331	2340
17	2471	2480
18	2611	2620

- Off-standard frame heights 6mm to 42mm greater than a standard frame height are not available.
- All other off-standard heights are available.

Minimum Bay Width	
Powerlouvre Window Type	Minimum Bay Width (mm)
2-9 blade high	400
10-18 blade high	500

Breezway Powerlouvre Window Systems with 102mm Galleries		
	Easyscreen Window System	Innoscreen Window System
No. of Blades	Standard Height (mm)	Standard Height (mm)
3	361	370
4	451	460
5	541	550
6	631	640
7	721	730
8	811	820
9	901	910
10	991	1000
11	1081	1090
12	1171	1180
13	1261	1270
14	1351	1360
15	1441	1450
16	1531	1540
17	1621	1630
18	1711	1720

- Off-standard frame heights 1mm to 5mm less than a standard frame height are not available.
- Off-standard frame height 6mm to 44mm greater than a standard frame height are not available.
- All other off-standard heights are available.

- Maximum width = 4000mm (Frames over these dimensions will need to be coupled on site or at a window fabricator's factory.)
- Up to 6 galleries (bays) can be included in a single surround frame.
- Combination louvre and fixed light bays are available.

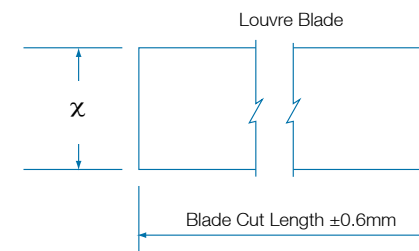
Window System Blade Lengths

Easyscreen Frame	
Glass & aluminium blade	Blade length = window width - 82mm
IGLU Blade	Blade Length = window width - 81mm
Glass & aluminium Stronghold blade	Blade length = window width - 78mm

Innoscreen Frame	
Glass & aluminium blade	Blade length = window width - 102mm
Glass & aluminium Stronghold blade	Blade length = window width - 98mm

SL2 Frame	
Glass & aluminium blade	Blade length = window width - 102mm
Glass & aluminium Stronghold blade	Blade length = window width - 98mm

Extension Blade Dimensions



Easyscreen Frame	
Glass & Aluminium blades	x = Channel extension +13mm

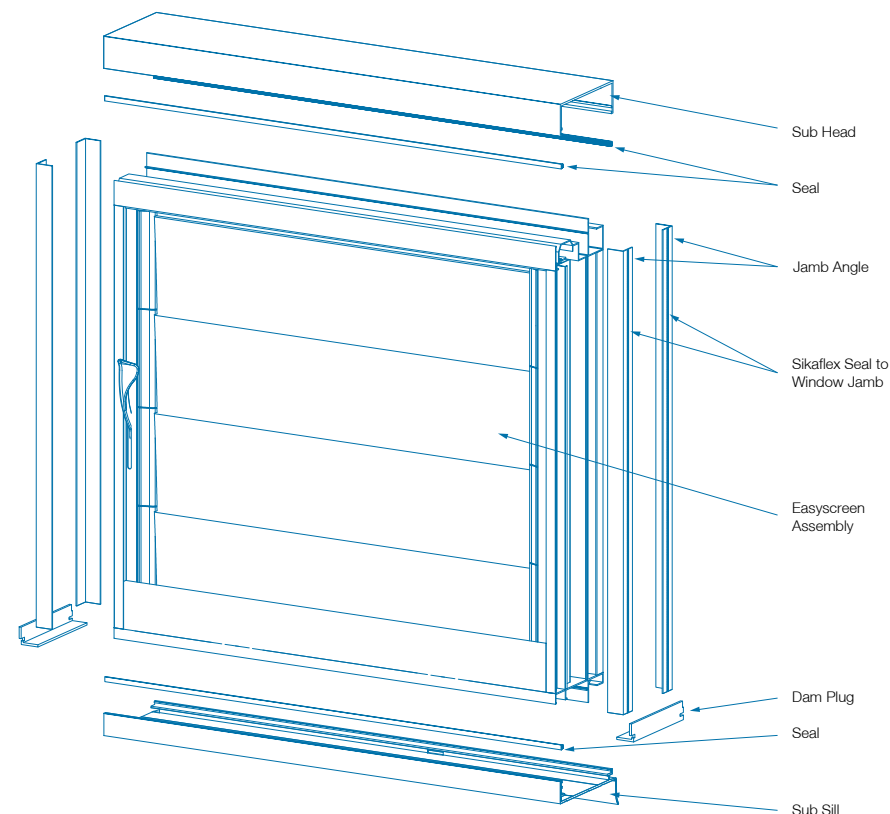
Innoscreen Frame	
Glass & Aluminium blades	x = Channel extension +13mm

SL2 Frame	
Glass & Aluminium blades	x = Channel extension +20mm

Sub Framing

For projects where sub framing is the preferred installation method, Sub Framing is available for the Easyscreen™ and Innoscreen® Window Systems.

Product	Description	Code
Sub Sill	Use to secure the Sill of Easyscreen or Innoscreen Window Systems when installation using sub framing is required.	1900 00380
Sub Sill Dam Plugs	Used to seal ends of Sub Sill against water leaks.	1900 00383
Sub Head	Use to secure the Head of Easyscreen or Innoscreen Window Systems when installation using sub framing is required.	1900 00381
Jamb Angles	Use to secure the Jambs of Easyscreen or Innoscreen Window Systems when installation using sub framing is required.	1900 00382



Sub Framing Sizing

Height

For Window heights $\leq 791\text{mm}$: Combined Window and Sub Framing height = Window height + approximately* 45mm
For Window heights $\geq 792\text{mm}$: Combined Window and Sub Framing height = Window height + approximately* 30mm

Width

Combined Window and Jamb Angles width = Window Width + approximately* 24mm

*To be confirmed by installer. The above calculations include Window System and Sub Framing only. No additional materials or elements.

Breezway® Window System Checklist (Powerlouvre™ & Manual Version)**Required Information viewed from inside**

- Design Wind Pressure Rating
- Manual or Automated
- Frame Size
- With or without the Stronghold® System
- Gallery Clip Size
- Height & Width
- Number of Bays
- Frame Colour
- Gallery Colour
- Clip & Handle Colour
- Handle Type¹ (if required)
- Blade Type²

Optional Information

- Reveal/Flashing Type & Size
- Left or Right Handed
- Restricted Opening
- Variable Handle Position/Additional Handles
- Security Bar System
- Keylock
- Offset Mullions
- Couplers & Cover Plates
- Bay Configuration
- Sub Framing

NOTES:

1. For Altair Powerlouvre Windows handle specifications are not required.

Altair® Louvre Window Recommended Specifications

A tight specification will help to make sure that what you specify ends up in your building thereby achieving your design objectives.

The louvre windows shall be Breezway® Altair® Louvre Windows

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Low profile keylock with lock barrel housed inside the louvre channel.
- Passed testing to 40,000 open/close cycles for long operational life.
- Passed testing to 15,000 lock/unlock cycles for long operational life.
- Altair Louvres have passed AS2047 testing at 3,000mm high.

The louvre windows shall be Breezway® Altair® Powerlouvre™ Windows

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.4 amps to reduce transformer and wiring requirements.
- Motors can be powered by appropriately specified transformers from any supplier.
- Available as either a fully assembled window system or as a component system for installation into window fabricator's framing systems.

The louvre windows shall be Breezway® Altair® Louvre Windows with the Stronghold® System

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Low profile keylock with lock barrel housed inside the louvre channel.
- Altair Louvres have passed testing to 40,000 open/close cycles for long operational life.
- Altair Louvre keylocks have passed testing to 15,000 lock/unlock cycles for long operational life.
- Altair Louvres have passed AS2047 testing at 3,000mm high.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

The louvre windows shall be Breezway® Altair® Powerlouvre™ Windows with the Stronghold® System

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.4 amps to reduce transformer and wiring requirements.
- Motors can be powered by appropriately specified transformers from any supplier.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

The louvre windows shall be Breezway® Altair® IGLU® Louvre Windows

Features:

- Totally frameless double glazed louvre blades with embedded seals.
- Seal-on-seal contact between blades.
- Unique drainage channels for superior water performance.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

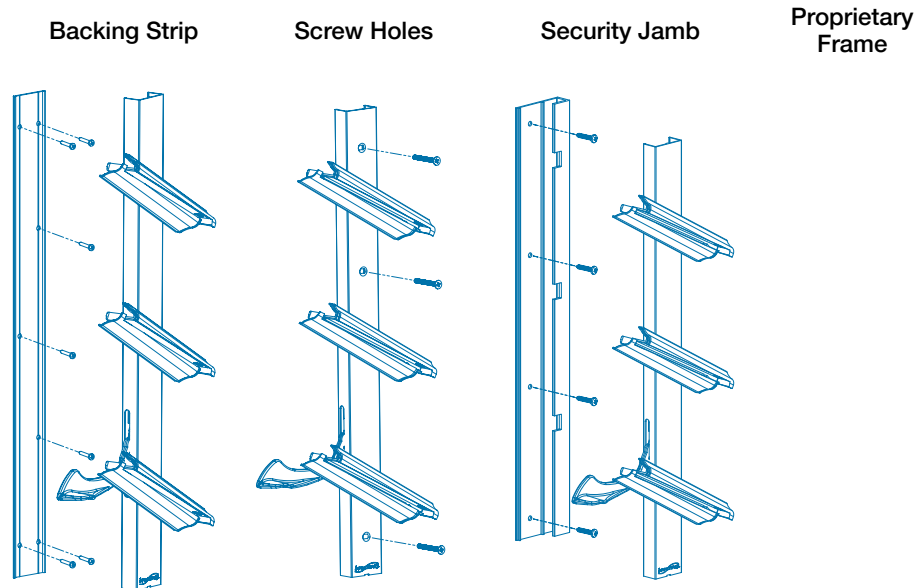
The louvre windows shall be Breezway® Altair® Powerlouvre™ IGLU® Louvre Windows

Features:

- Totally frameless double glazed louvre blades with embedded seal.
- Seal-on-seal contact between blades.
- Unique drainage channels for superior water performance.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.4 amps to reduce transformer and wiring requirements.
- Motors can be powered by appropriately specified transformers from any supplier.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

Installation Options

In component form, Breezway Altair louvre galleries can be used in some regular timber, aluminium and uPVC window frames. If installed in a frame that is plumb and true, and according to Breezway's installation instructions, the Altair Performance Warranty is not affected in any way.



Altair Proprietary Frames

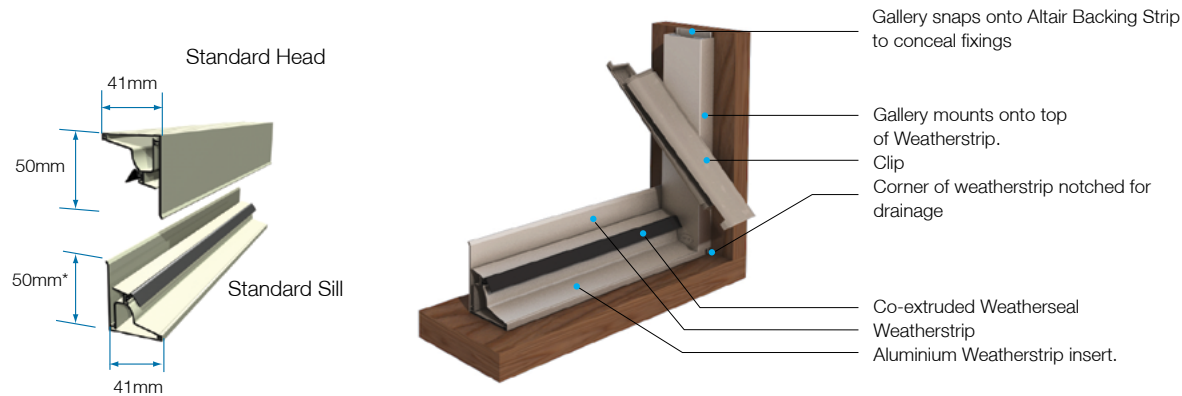
Many leading window fabricators, realising the value of Altair louvres, have committed to maintaining compatibility between their proprietary frames and the Breezway Altair louvre system. As window frame fabricators do make periodic improvements to their frames, please refer to each fabricators' website for the latest information on their proprietary framing system.

Fabricators	Altair Compatible Frame	Website address for latest frame information	Manufacturer Phone Numbers
Alspec	Airflow® Plus 125mm Framing	www.alspec.com.au	1300 257 732
G James	050 Series	www.gjames.com.au	07 3877 2333

Visible fixings	None	Visible fixings on louvre channel	None	Depends on the frame design - some have compatible snap-in points
Maximum warranted water pass pressure	450Pa	300Pa	450Pa	300Pa if galleries have screw holes - 450Pa if galleries have no screw holes
Compatibility with the Stronghold System	Yes	Yes	Yes	Yes
Compatibility with the Component Powerlouvre™ System	Yes	Yes	No	Depends on the frame design

Weatherstrips and Backing Strips

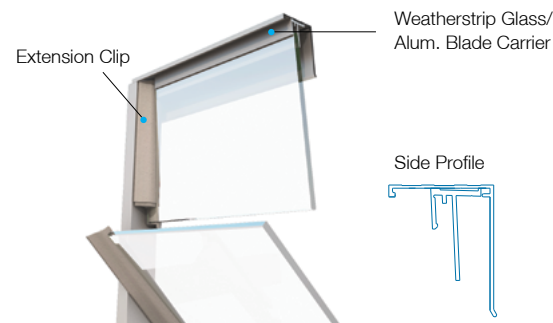
Standard Height



*High Profile Sill height = 66.5mm

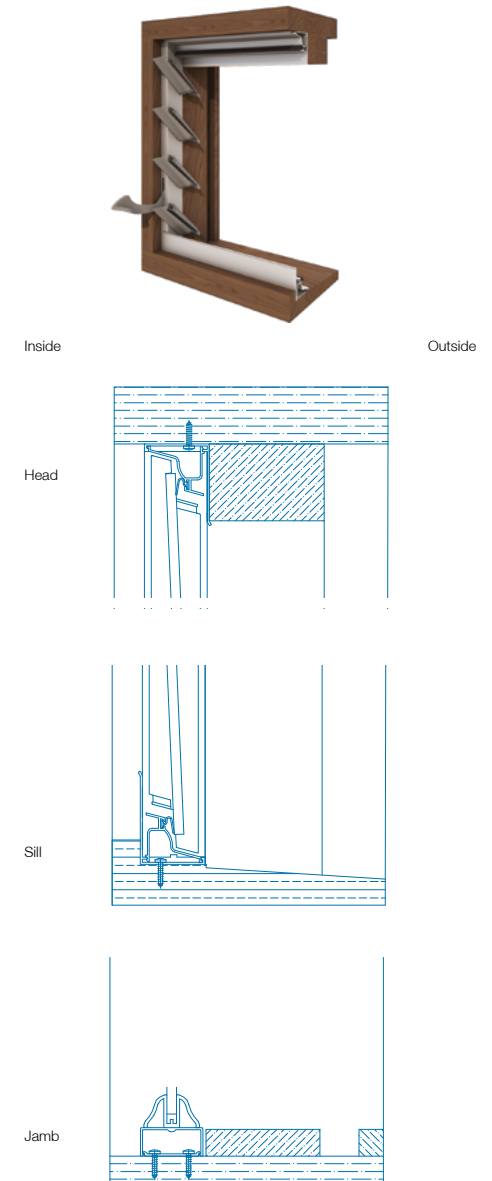
Off Standard Height Head for Glass or Aluminium Blades

- The same Weatherstrip is used on both the head and sill for standard glass and aluminium louvres.
- Off Standard Height Galleries that are within 5mm of a Standard Height Gallery will not have a top fixed blade and will therefore require Standard Height Weatherstrip sets. Off Standard Height Galleries that are more than 5mm greater than or less than a Standard Height Gallery will have a top fixed blade and will therefore require Off Standard Height Weatherstrip sets.



Used in conjunction with Extended Louvre Channel and Standard Sill

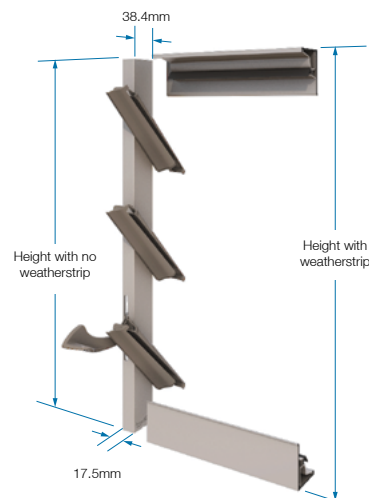
Example of Altair® Component System fitted in a Timber Surround Frame



Standard Heights - Altair® Component System

Heights for 102mm Blade Louvre Gallery		
No. of Blades	Height (mm) No Weatherstrip	Height (mm) With Weatherstrip
3	310	320
4	400	410
5	490	500
6	580	590
7	670	680
8	760	770
9	850	860
10	940	950
11	1030	1040
12	1120	1130
13	1210	1220
14	1300	1310
15	1390	1400
16	1480	1490
17	1570	1580
18	1660	1670
19	1750	1760
20	1840	1850
21	1930	1940
22	2020	2030
23	2110	2120
24	2200	2210
25	2290	2300
26	2380	2390
27	2470	2480
28	2560	2570
29	2650	2660
30	2740	2750
31	2830	2840
32	2920	2930
33	3010	3020

Heights for 152mm Blade Louvre Gallery		
No. of Blades	Height (mm) No Weatherstrip	Height (mm) With Weatherstrip
2	320	330
3	460	470
4	600	610
5	740	750
6	880	890
7	1020	1030
8	1160	1170
9	1300	1310
10	1440	1450
11	1580	1590
12	1720	1730
13	1860	1870
14	2000	2010
15	2140	2150
16	2280	2290
17	2420	2430
18	2560	2570
19	2700	2710
20	2840	2850
21	2980	2990



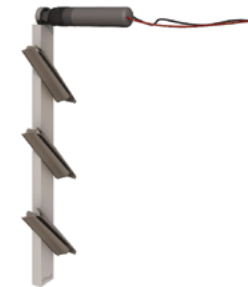
Altair® Powerlouvre™ Component System

For projects where Powerlouvre Windows are desired in a framing system other than the Breezway Easyscreen® Window System, Altair Powerlouvre Windows are available in component form.

The Altair Powerlouvre Component System can be assembled and fitted by approved fabricators into selected timber and flat aluminium frames that are wider than 65mm. Breezway Component Powerlouvre head and sill weatherstrips must be used.

Wires emerge 1 metre from the top right hand side of the Easyscreen Frame. Four metres of wiring is supplied with component Powerlouvre Windows.

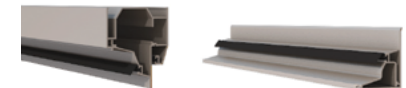
Please consult Breezway® for frame compatibility advice.



NOTES:

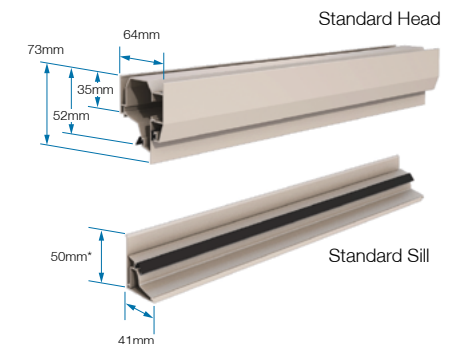
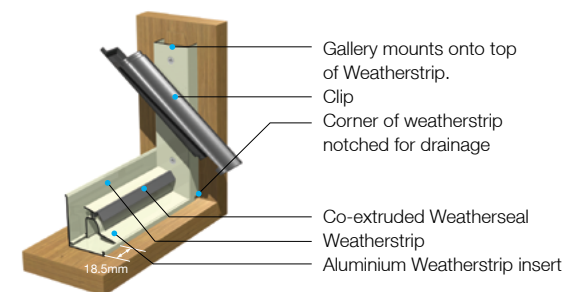
Altair Louvre Security Jambes are not compatible with the Altair Powerlouvre Component System.

The Altair Louvre Security “U” Channel system is compatible with the Altair Powerlouvre Component System, but will require additional clearance from the channel.



Galleries	Head	Sill
Available in 102mm, 152mm and IGLU heights to suit 6mm thick glass and metal blades, and IGLU double glazed blades.	Head Weatherstrip	Standard Sill Weatherstrip and Insert.

Altair® Powerlouvre™ Standard Height Louvre Weatherstrip



- Weatherstrip, complete with seal, must be used to gain manufacturer's performance warranty and to conceal the Powerlouvre motor.
- Weatherstrips to head and sill add 40mm to overall gallery height.

*High Profile Sill height = 66.5mm

Standard Heights - Altair® Powerlouvre™ Component System

No. of Blades	152mm Altair Powerlouvre Component System Standard Sizes		102mm Altair Powerlouvre Component System Standard Sizes	
	Height including Weatherstrip (mm)	Gallery height excluding Weatherstrip (mm)	Height including Weatherstrip (mm)	Gallery height excluding Weatherstrip (mm)
2	360	320	–	–
3	500	460	350	310
4	640	600	440	400
5	780	740	530	490
6	920	880	620	580
7	1060	1020	710	670
8	1200	1160	800	760
9	1340	1300	890	850
10	1480	1440	980	940
11	1620	1580	1070	1030
12	1760	1720	1160	1120
13	1900	1860	1250	1210
14	2040	2000	1340	1300
15	2180	2140	1430	1390
16	2320	2280	1520	1480
17	2460	2420	1610	1570
18	2600	2560	1700	1660

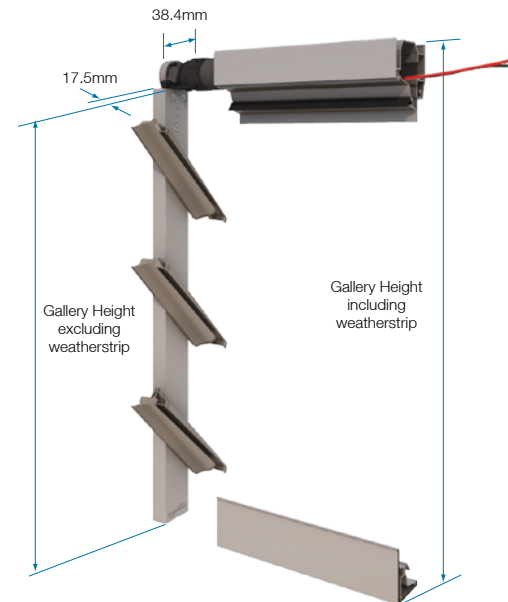
Minimum Bay Width	
Powerlouvre Window Type	Minimum Bay Width (mm)
2-9 blade high	400
10-18 blade high	500

152mm Powerlouvre Component System:

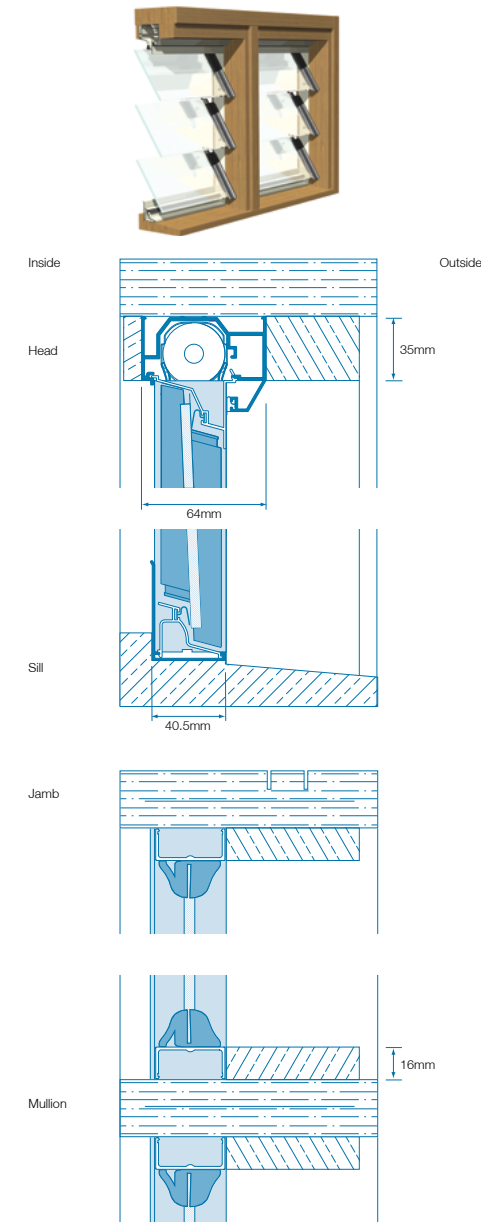
- Off-standard heights between 6mm and 42mm greater than a standard height are not available for 152mm Powerlouvre Component System.
- All other off-standard heights are available.

102mm Powerlouvre Component System:

- Off-Standard heights between 1mm and 5mm below a standard frame height are not available.
- Off-standard heights between 6mm and 44mm greater than a standard height are not available for 102mm Powerlouvre Component System.
- All other off-standard heights are available.

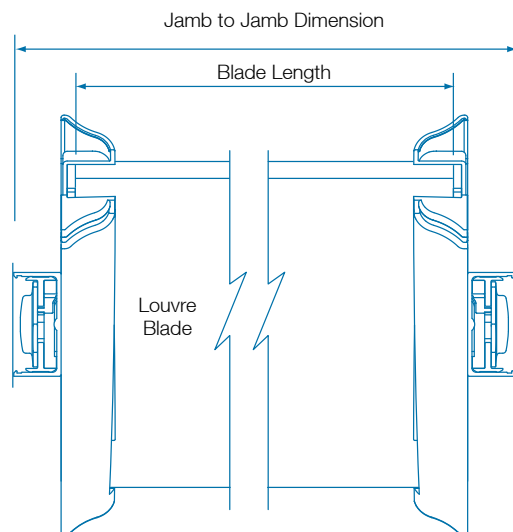


Example of Altair® Powerlouvre™ Component System fitted in a Timber Surround Frame



Altair® Blade Formulas

Blade Cut Length Standard Jamb



Glass & aluminium blades:

Blade Length = jamb to jamb – 52mm

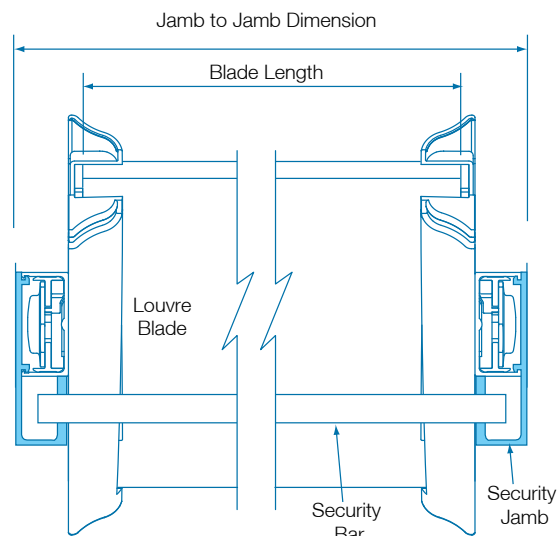
Glass & aluminium Stronghold blades:

Blade Length = jamb to jamb – 48mm

IGLU Double Glazed blades:

Blade Length = jamb to jamb – 51mm

Blade Cut Length Breezway® Security Jamb



Glass & aluminium blades:

Blade Length = jamb to jamb – 56mm

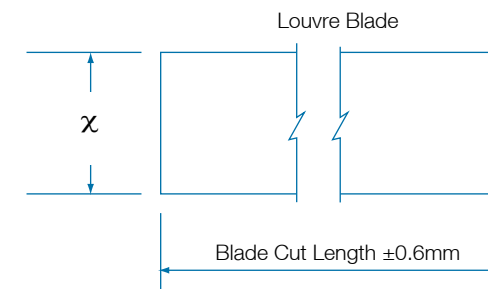
Glass & aluminium Stronghold blades:

Blade Length = jamb to jamb – 52mm

IGLU Double Glazed blades:

Blade Length = jamb to jamb – 55mm

Extension Blade Dimensions



Component Form — Manually Operated

Glass & Aluminium blades	x = Channel extension +20mm
--------------------------	-----------------------------

Component Form — Powerlouvre™ Window

Glass & Aluminium blades	x = Channel extension +12mm
--------------------------	-----------------------------

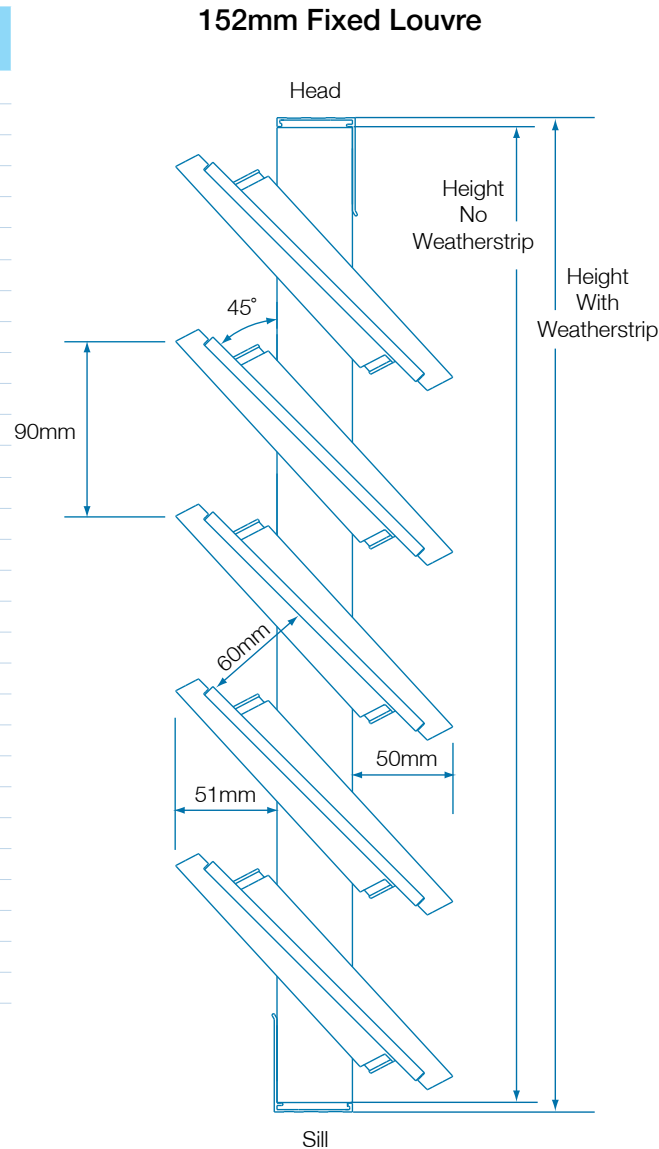
NOTES:

For allowable length of blades refer to AS1288 and Breezway Louvre Windows's PRODUCT PERFORMANCE WARRANTY.

Allowable tolerance = +/-0.6mm

152mm Altair® Fixed Louvre

No. of Blades	Height (mm) No Weatherstrip	Height (mm) With Weatherstrip
3	310	320
4	400	410
5	490	500
6	580	590
7	670	680
8	760	770
9	850	860
10	940	950
11	1030	1040
12	1120	1130
13	1210	1220
14	1300	1310
15	1390	1400
16	1480	1490
17	1570	1580
18	1660	1670
19	1750	1760
20	1840	1850
21	1930	1940
22	2020	2030
23	2110	2120
24	2200	2210
25	2290	2300
26	2380	2390
27	2470	2480
28	2560	2570
29	2650	2660
30	2740	2750
31	2830	2840
32	2920	2930
33	3010	3020



NOTES:

- Not Available in 102mm
- This product does not meet AS2047 water penetration requirements.
- Fixed louvres are only available in standard heights ie. extended channel not available.

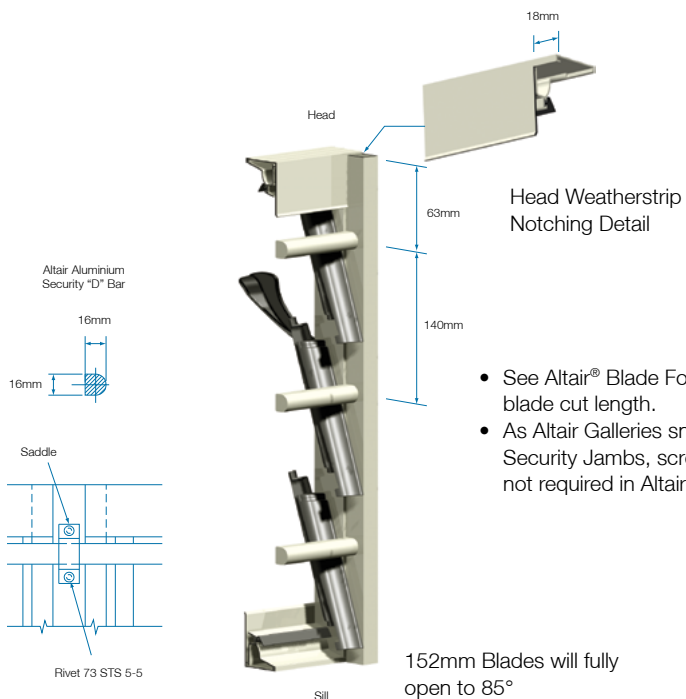
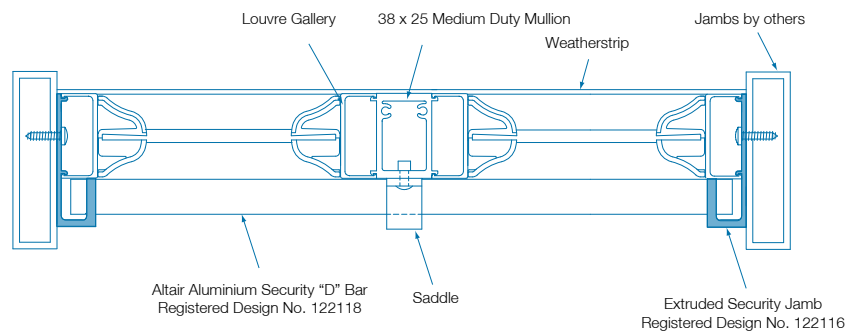
Applications for Fixed Vent Louvres

Use fixed vent louvres where permanent ventilation, light, privacy and a degree of weatherproofing is required. Some typical applications include:

- Vented roofs
- Laundries (industrial, domestic)
- Bathrooms
- Public Amenities
- Housing for air conditioning units

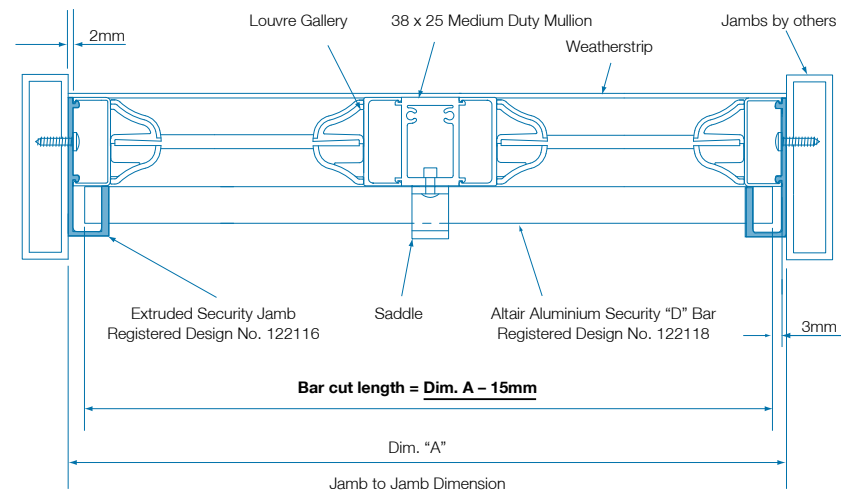
Altair® Louvre Security Jamb

152mm Louvre Galleries Only



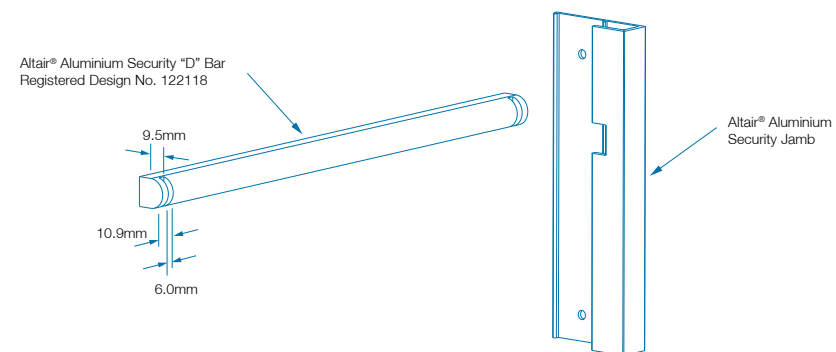
- See Altair® Blade Formulas for blade cut length.
- As Altair Galleries snap into Altair Security Jamb, screw holes are not required in Altair Galleries.

Security Bar Cut Lengths For Security Jamb



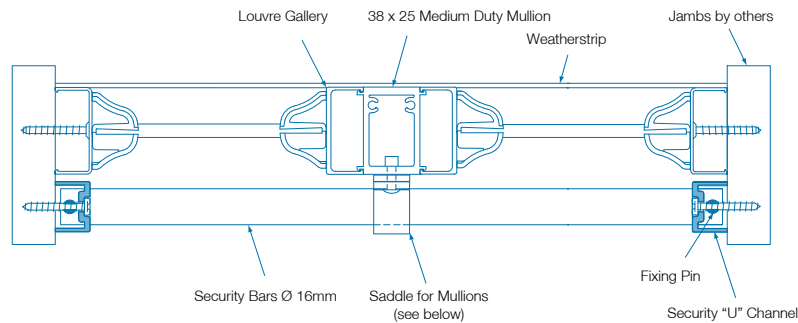
- Maximum permissible taper in jamb section is 4.0mm
- Tolerance on bar cut length to be $\pm 1.0\text{mm}$
- Maximum bar length unsupported is 900mm

Notching Detail For Security "D" Bar

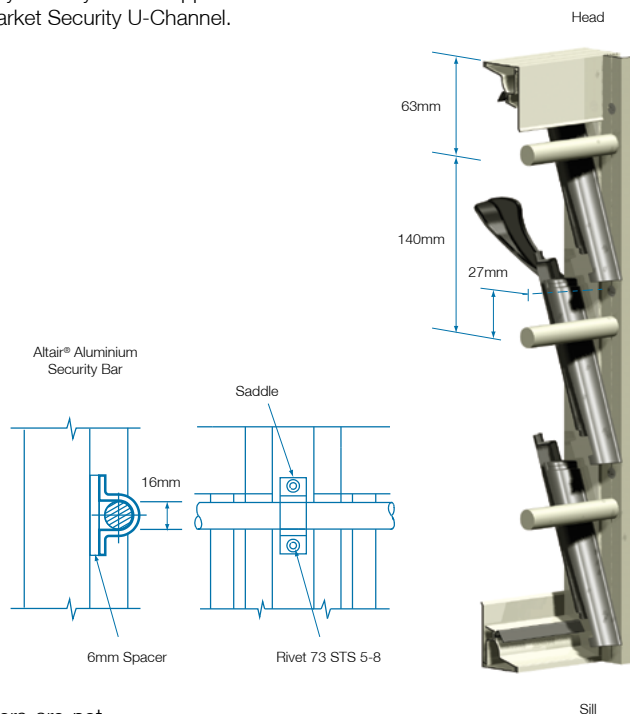


Aftermarket Security “U” Channels

152mm Louvre Galleries Only

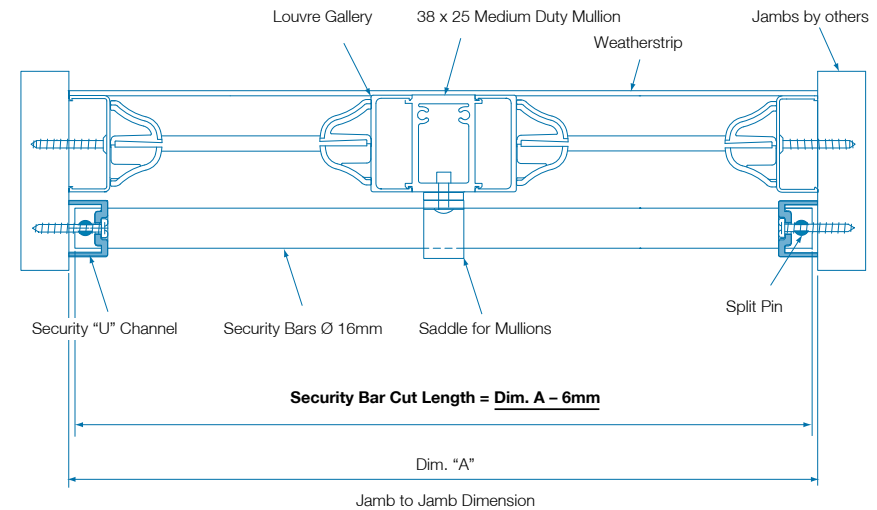


- One way security screw supplied with Aftermarket Security U-Channel.



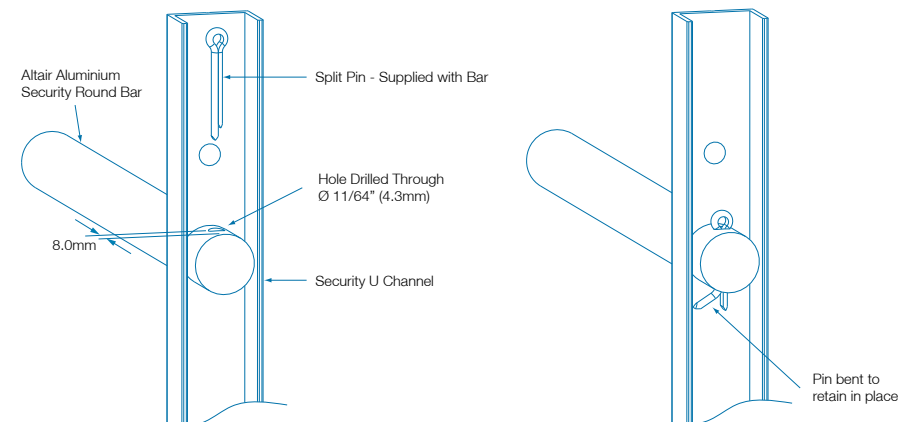
6mm Spacers are not supplied by Breezway.

Security Bar Cut Lengths For “U” Channel



- Maximum permissible taper in jamb section is 4.0mm
- Tolerance on bar cut length to be $\pm 1.0\text{mm}$
- Maximum bar length unsupported is 900mm

Split Pin Detail For Security Round Bar



Altair® Louvres For Other Frames Checklist

REQUIRED INFORMATION

viewed from inside

- Gallery Clip Size
- Gallery Height
- Gallery Colours
- Manual or Powerlouvre™ Galleries
- With or without the Stronghold® System
- Clips & Handle Colour
- Blade Length & Type
- Weatherstrip for head & sill

OPTIONAL INFORMATION

- Left or Right Handed
- Restricted Opening
- Handle Type
- Variable Handle Position/Additional Handles
- Screw Holes (Ref frame, mullion, security type)
- Security Bar System
- Keylock

Altair® Louvres For Other Frames Recommended Specification

A tight specification will help to make sure that what you specify ends up in your building thereby achieving your design objectives.

The louvre windows shall be Breezway® Altair® Louvre Windows

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Low profile keylock with lock barrel housed inside the louvre channel.
- Passed testing to 40,000 open/close cycles for long operational life.
- Passed testing to 15,000 lock/unlock cycles for long operational life.
- Altair Louvres have passed AS2047 testing at 3,000mm high.

The louvre windows shall be Breezway® Altair® Powerlouvre™ Windows

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.4 amps to reduce transformer and wiring requirements.
- Motors can be powered by appropriately specified transformers from any supplier.
- Available as either a fully assembled window system or as a component system for installation into window fabricator's framing systems.

The louvre windows shall be Breezway® Altair® Louvre Windows with the Stronghold® System

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Low profile keylock with lock barrel housed inside the louvre channel.
- Altair Louvres have passed testing to 40,000 open/close cycles for long operational life.
- Altair Louvre keylocks have passed testing to 15,000 lock/unlock cycles for long operational life.
- Altair Louvres have passed AS2047 testing at 3,000mm high.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

The louvre windows shall be Breezway® Altair® Powerlouvre™ Windows with the Stronghold® System

Features:

- Unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.4 amps to reduce transformer and wiring requirements.
- Motors can be powered by appropriately specified transformers from any supplier.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

The louvre windows shall be Breezway® Altair® IGLU® Louvre Windows

Features:

- Totally frameless double glazed louvre blades with embedded seals.
- Seal-on-seal contact between blades.
- Unique drainage channels for superior water performance.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

The louvre windows shall be Breezway® Altair® Powerlouvre™ IGLU® Louvre Windows

Features:

- Totally frameless double glazed louvre blades with embedded seal.
- Seal-on-seal contact between blades.
- Unique drainage channels for superior water performance.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.4 amps to reduce transformer and wiring requirements.
- Motors can be powered by appropriately specified transformers from any supplier.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

Altair Dualair® Secondary Glazed Louvre Component System

The Dualair System combines the performance benefits of secondary glazing with the ventilation benefits of Altair Louvre Windows.



Airborne Sound Isolation

The large gap between the inner and outer Altair Louvre Blades of the Dualair System result in high levels of sound reduction. Rw ratings of up to 35 are possible.

Thermal Performance

The large air gap between the inner and outer blades delivers thermal insulation performance comparable to that of windows with thermally broken aluminium framing and argon-filled double glazing with low e coatings. U-values as low as 2.4 are possible with monolithic glass blades with low e coatings.

Water Penetration Resistance

The pressure equalising design of the Dualair System allows for water penetration resistance performance of 600 Pa at a window size of 18-blades tall with 1,127mm blade spans. (Water Penetration Resistance of 620Pa is also available as narrower window widths.)

Maximumise Natural Ventilation

With blades that open almost horizontally and no fixed panes of glass, the Dualair System maximises the ventilation opening of the window to help deliver healthy, naturally comfortable spaces.

Integrated Shading & Privacy

When aluminium blades or printed glass blades are used to the outside, the Dualair System offers integrated shading from solar heat gain and visual privacy without the need for internal blinds or curtains.

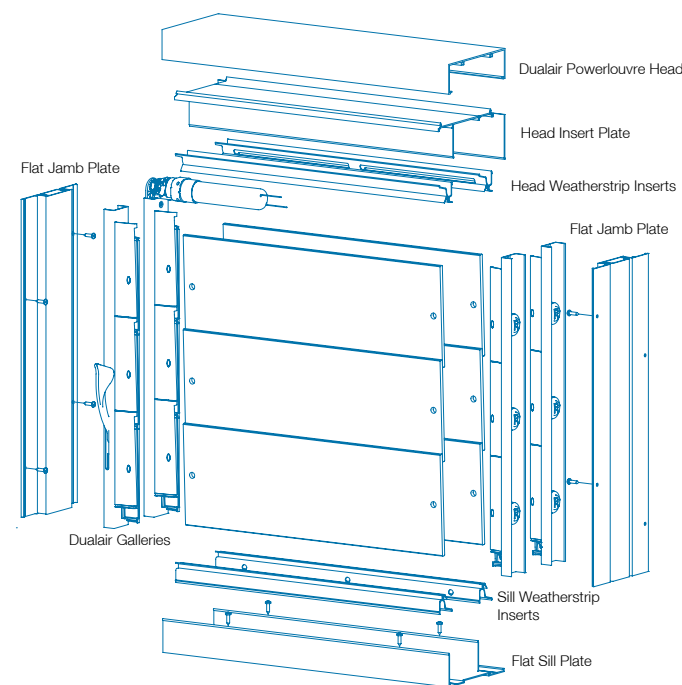
Secondary Glazing within a Single Frame

The Dualair System is installed as a single unit, allowing a single installation occasion into a single set of sub-framing.

Unified Aesthetics

With both the inner and outer window types being identical, the Dualair System offers the appearance of a single window unit while offering the performance benefits of secondary glazing.

Compatible Frames



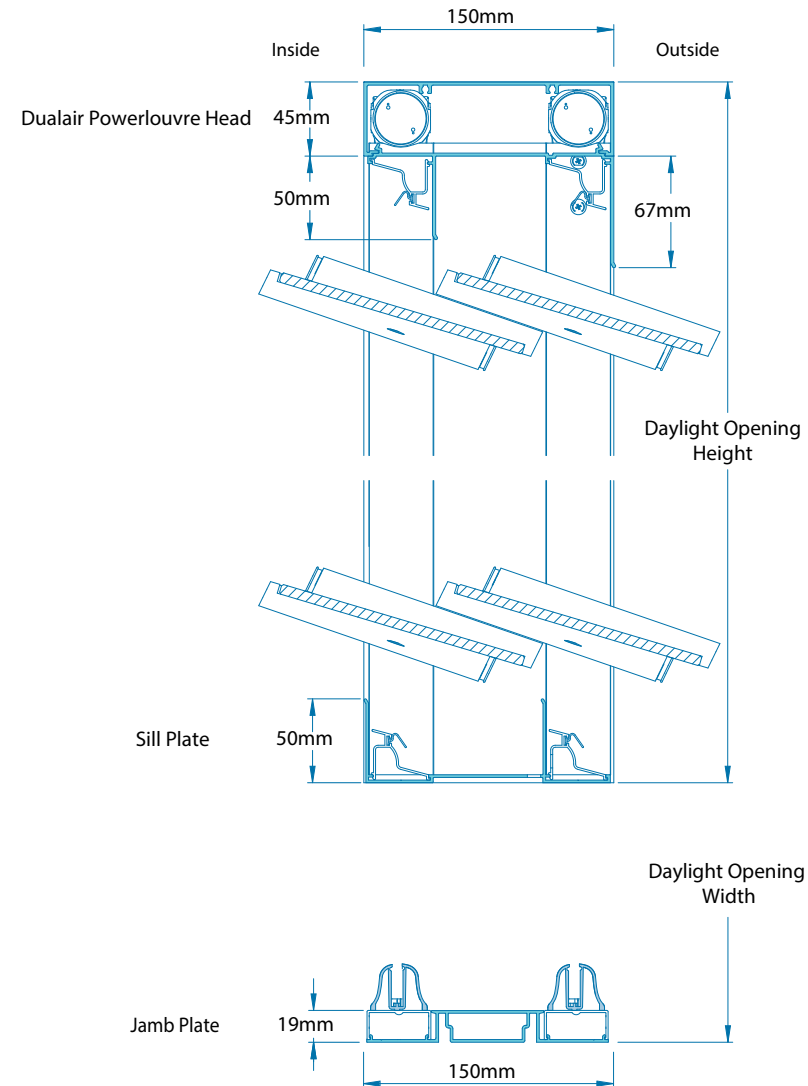
The Dualair System has been designed for suitability in most flat Commercial Framing at least 150mm wide. Some custom processing is required on the sill of the frame used in order for the Dualair System to drain through the sub-sill.

To create space for the Powerlouvre Motors to be concealed within the head of the frame, a 150mm Dualair Powerlouvre Head is included in the Dualair Component System.

Dualair® System Configurations

Product	Description
Dualair Louvre System 	Two Altair Louvre Galleries in a secondary glazing configuration within a 150mm commercial framing system. The outer Altair Louvre is a Powerlouvre Gallery, the inner Altair Louvre can be either a Powerlouvre Gallery or manually operated. Aluminium blades or printed glass blades to the outside deliver shading and privacy without the need for internal blinds or curtains.

The Dualair Component System



Standard Heights* - Dualair® System

Heights for Dualair System with 152mm Blade**	
No. of Blades	Daylight Opening Height (mm)
2	374
3	514
4	654
5	794
6	934
7	1074
8	1214
9	1354
10	1494
11	1634
12	1774
13	1914
14	2054
15	2194
16	2334
17	2474
18	2614

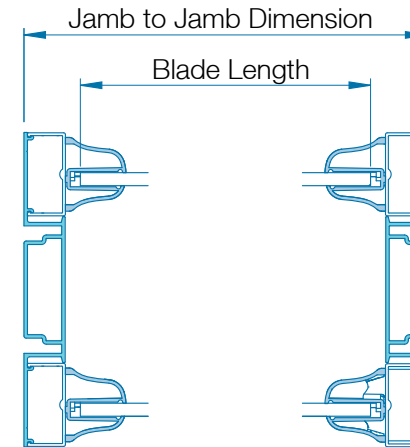
*Off-standard heights are not available

**102mm blade height is not available

Opening Configurations

Dualair Gallery Opening Configurations			
No. of Blades	Motors per Powerlouvre Gallery	Handles per Manually Operated Altair Gallery	Banks of Blades Controlled from Head Downwards
2	1	1	2
3	1	1	3
4	1	1	4
5	1	1	5
6	1	1	6
7	1	1	7
8	1	1	8
9	1	1	9
10	2	2	5 5
11	2	2	5 6
12	2	2	6 6
13	2	2	6 7
14	2	2	7 7
15	2	2	7 8
16	2	2	8 8
17	2	2	8 9
18	2	2	9 9

Dualair® Blade Formulas



Blade Cut Length

Glass & Aluminium Blade Length = jamb to jamb – 56mm

Glass & Aluminium Stronghold Blade Length = jamb to jamb - 52mm

NOTES:

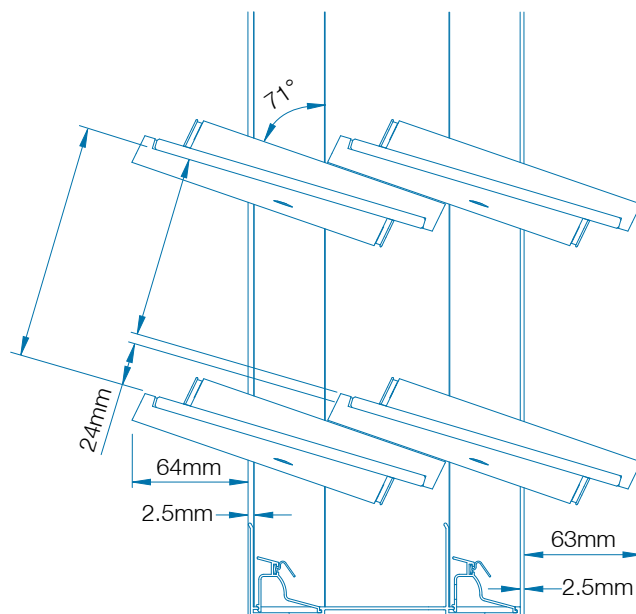
For allowable length of blades refer to AS1288 and Breezway Louvre Windows's PRODUCT PERFORMANCE WARRANTY.

Allowable tolerance = +/-0.6mm

Dualair® Restricted Openings

A base opening restriction is required for Dualair Systems to avoid interference between the inner and outer Altair clips. Other Altair restricted openings for 152mm clips are also available with the Dualair System:

- 100mm restricted opening
- 80mm restricted opening



Dualair® System Checklist

REQUIRED INFORMATION viewed from inside	OPTIONAL INFORMATION
Dualair System daylight height.	Handle side
Daylight width	Keylock
Manual or Powerlouvre™ Gallery to inside	
With or without the Stronghold® System	
Handle type, if inner gallery is manually operated	
Clips & Handle Colour	
Blade Types (inner & outer)	

NOTES:

- Off-standard heights are not available.
- 102mm blade height is not available.

Dualair® System Recommended Specification

A tight specification will help to make sure that what you specify ends up in your building thereby achieving your design objectives.

The louvre windows shall be the Breezway® Altair® Dualair® Secondary Glazed Louvre System

Unique features:

- Altair Louvres in a secondary glazing configuration within 150mm commercial glazing.
- Minimum Rw rating of 35.
- Maximum U-value of 3.8 W/m².K.
- Pressure equalising design and unique drainage channels for superior water performance.
- Unique 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Low profile keylock with lock barrel housed inside the louvre channel.
- Passed testing to 40,000 open/close cycles for long operational life.
- Passed testing to 15,000 lock/unlock cycles for long operational life.
- Altair Dualair Louvres have passed AS2047 testing at 17 blades high.
- Powerlouvre motors are fully concealed within the head of the frame.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact (optional with the Stronghold System).
- Custom designed for flat 150mm Commercial Framing

Life's better with Natural Ventilation



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GLASS &
WINDOW
ASSOCIATION
MEMBER



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