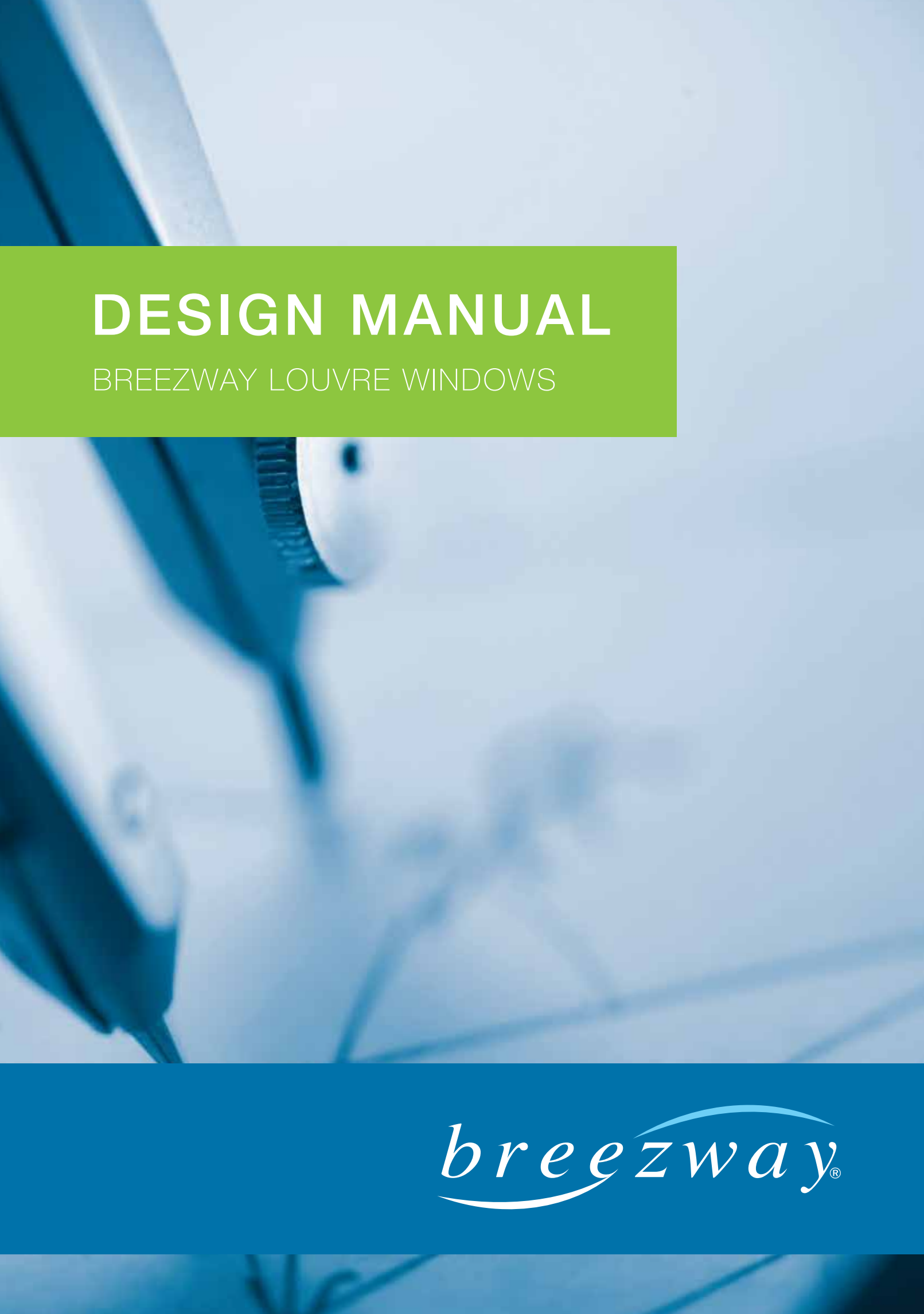


DESIGN MANUAL

BREEZWAY LOUVRE WINDOWS

breezway®

Breezway Altair® General Information

Breezway Altair® Powerlouvre™ Window

Breezway Altair® Stronghold® System

Breezway Altair® Louvre Window Systems

Breezway Altair® for other Frames

Dualair™ Secondary Glazed Altair® Louvre Component 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 60 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
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
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 ±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 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.

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

	N1/N2				N3			
	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	
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height
152mm Altair Louvre with or without the Stronghold System								
152mm annealed glass[1]	900	21 blade	900	21 blade	900	21 blade	805	21 blade
152mm toughened glass[1]	900	21 blade	900	21 blade	900	21 blade	900	21 blade
152mm aluminium blade	900	21 blade	900	21 blade	900	21 blade	900	21 blade
152mm timber blade	900	17 blade	900	17 blade	900	17 blade	900	17 blade
Easyscreen & Innoscreen Mullion[2]	-	21 blade	-	21 blade	-	21 blade	-	20 blade
SL2 Mullion[2]	-	13 blade	-	11 blade	-	10 blade	-	9 blade
152mm Altair Louvre with the Stronghold System								
152mm toughened glass[1]	1127[3]	15 blade[3]	1127[3]	15 blade[3]	1127[3]	15 blade[3]	1127[3]	15 blade[3]
Easyscreen & Innoscreen Mullion[2]	-	15 blade	-	15 blade	-	15 blade	-	15 blade
102mm Altair Louvre with or without the Stronghold System								
102mm annealed glass[1]	750	33 blade	750	33 blade	750	33 blade	750	33 blade
102mm toughened glass[1]	750	33 blade	750	33 blade	750	33 blade	750	33 blade
102mm aluminium blade	750	33 blade	750	33 blade	750	33 blade	750	33 blade
102mm timber blade	750	27 blade	750	27 blade	750	27 blade	750	27 blade
Easyscreen & Innoscreen Mullion[2]	-	33 blade	-	33 blade	-	33 blade	-	33 blade
SL2 Mullion[2]	-	22 blade	-	19 blade	-	17 blade	-	15 blade

Notes:

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 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.

	N4				N5			
	General location		Corner Windows		General location		Corner Windows	
	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	
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height
152mm Altair Louvre with or without the Stronghold System								
152mm annealed glass[1]	805	21 blade	658	21 blade	658[5]	17 blade[5]	537[5]	20 blade[5]
152mm toughened glass[1]	900	21 blade	900	21 blade	900[5]	14 blade[5]	849[5]	15 blade[5]
152mm aluminium blade	900	21 blade	900	21 blade	707	17 blade	707	17 blade
152mm timber blade	900	17 blade	900	17 blade	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion[2]	-	20 blade	-	17 blade	-	17 blade	-	16 blade
SL2 Mullion[2]	-	9 blade	-	8 blade	-	8 blade	-	7 blade
152mm Altair Louvre with the Stronghold System								
152mm toughened glass[1]	1127[3]	15 blade[3]						
Easyscreen & Innoscreen Mullion[2]	-	15 blade						
102mm Altair Louvre with or without the Stronghold System								
102mm annealed glass[1]	750	33 blade	658	33 blade	658	27 blade	537	31 blade
102mm toughened glass[1]	750	33 blade	750	33 blade	750	25 blade	750	25 blade
102mm aluminium blade	750	33 blade	750	33 blade	707	27 blade	707	27 blade
102mm timber blade	750	27 blade	750	27 blade	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion[2]	-	33 blade	-	29 blade	-	27 blade	-	25 blade
SL2 Mullion[2]	-	15 blade	-	13 blade	-	13 blade	-	11 blade

Notes:

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 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.

	N6			
	General location		Corner Windows	
	1600 Pa SLS 4000 Pa ULS 450 Pa Water Pass		2500 Pa SLS 6000 Pa ULS 450 Pa Water Pass[4]	
	Max Blade Length	Max Height	Max Blade Length	Max Height
152mm Altair Louvre with or without the Stronghold System				
152mm annealed glass[1]	569[4,5]	8 blade[4,5]	465[4,5]	10 blade[4,5]
152mm toughened glass[1]	800[4,5]	5 blade[4,5]	735[4,5]	6 blade[4,5]
152mm aluminium blade	NA	NA	NA	NA
152mm timber blade	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion[2]	-	8 blade	-	10 blade
SL2 Mullion[2]	-	NA	-	NA
102mm Altair Louvre with or without the Stronghold System				
102mm annealed glass[1]	NA	NA	NA	NA
102mm toughened glass[1]	NA	NA	NA	NA
102mm aluminium blade	NA	NA	NA	NA
102mm timber blade	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion[2]	-	NA	-	NA
SL2 Mullion[2]	-	NA	-	NA

Notes:

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 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 Cyclonic Regions: Housing

	C1				C2			
	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	
	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height	Max Blade Length	Max Height
152mm Altair Louvre with or without the Stronghold System								
152mm annealed glass[1]	849	21 blade	693	21 blade	693	21 blade	569	21 blade
152mm toughened glass[1]	900	21 blade	900	21 blade	900	21 blade	900	21 blade
152mm aluminium blade	900	21 blade	900	21 blade	900	21 blade	900	21 blade
152mm timber blade	900	17 blade	900	17 blade	900	17 blade	900	17 blade
Easyscreen & Innoscreen Mullion[2]	-	20 blade	-	18 blade	-	18 blade	-	16 blade
SL2 Mullion[2]	-	9 blade	-	8 blade	-	8 blade	-	7 blade
152mm Altair Louvre with the Stronghold System								
152mm toughened glass[1]	1127[3]	15 blade[3]	1096[3]	15 blade[3]	1096[3]	15 blade[3]		
Easyscreen & Innoscreen Mullion[2]	-	15 blade	-	15 blade	-	15 blade		
102mm Altair Louvre with or without the Stronghold System								
102mm annealed glass[1]	750	33 blade	693	33 blade	693	33 blade	569	33 blade
102mm toughened glass[1]	750	33 blade	750	33 blade	750	33 blade	750	33 blade
102mm aluminium blade	750	33 blade	750	33 blade	750	33 blade	750	33 blade
102mm timber blade	750	27 blade	750	27 blade	750	27 blade	750	27 blade
Easyscreen & Innoscreen Mullion[2]	-	33 blade	-	30 blade	-	30 blade	-	26 blade
SL2 Mullion[2]	-	15 blade	-	14 blade	-	14 blade	-	12 blade

Notes:

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 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.

	C3				C4			
	General location		Corner Windows		General location		Corner Windows	
	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
152mm Altair Louvre with or without the Stronghold System								
152mm annealed glass[1]	569[5]	19 blade[5]	469[5]	20 blade[5]	495[5]	10 blade[5]	NA	NA
152mm toughened glass[1]	900[5]	14 blade[5]	741[5]	17 blade[5]	741[5]	6 blade[5]	637	7 blade
152mm aluminium blade	707	17 blade	707	17 blade	NA	NA	NA	NA
152mm timber blade	NA	NA	NA	NA	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion[2]	-	17 blade	-	14 blade	-	10 blade	-	7 blade
SL2 Mullion[2]	-	7 blade	-	6 blade	-	NA	-	NA
102mm Altair Louvre with or without the Stronghold System								
102mm annealed glass[1]	569	30 blade	469	32 blade	NA	NA	NA	NA
102mm toughened glass[1]	750	25 blade	741	26 blade	NA	NA	NA	NA
102mm aluminium blade	707	27 blade	707	27 blade	NA	NA	NA	NA
102mm timber blade	NA	NA	NA	NA	NA	NA	NA	NA
Easyscreen & Innoscreen Mullion[2]	-	27 blade	-	23 blade	-	NA	-	NA
SL2 Mullion[2]	-	12 blade	-	10 blade	-	NA	-	NA

Notes:

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 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® 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 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.

	2000 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)	NA	NA	900	18 blade	736	18 blade
Toughened glass[1] (inside) & aluminium blade (outside)	NA	NA	900	18 blade	-	-
Altair Dualair Secondary Glazed 152mm Louvre System with the Stronghold System						
Toughened glass[1] (inside) & toughened glass[1] (outside)	1127[3]	18 blade	900	18 blade	736	18 blade
Toughened glass[1] (inside) & aluminium blade (outside)	1127[3]	18 blade	900	18 blade	-	-

Notes:

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 to verify performance claims.

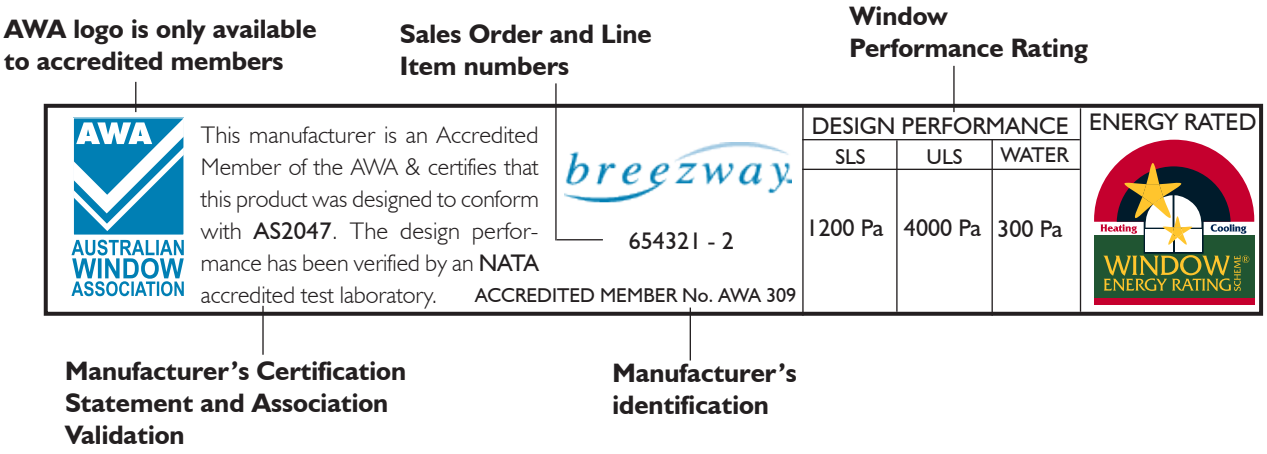
- AS4420.2 Deflection Test — positive and negative wind pressures are applied to the face of the window to test the maximum deflection under wind load.
- AS4420.3 Operating Force Test — to verify that an opening sash is capable of opening and closing without undue effort.
- AS4420.4 Air Infiltration Test — the air leakage of a window is tested to ensure energy and acoustic efficiency.
- AS4420.5 Water Penetration Resistance Test — this test is designed to ensure no water leaks through the window into the building.
- AS4420.6 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; and
- the Design Wind Pressures and Water Penetration Resistance of each window.

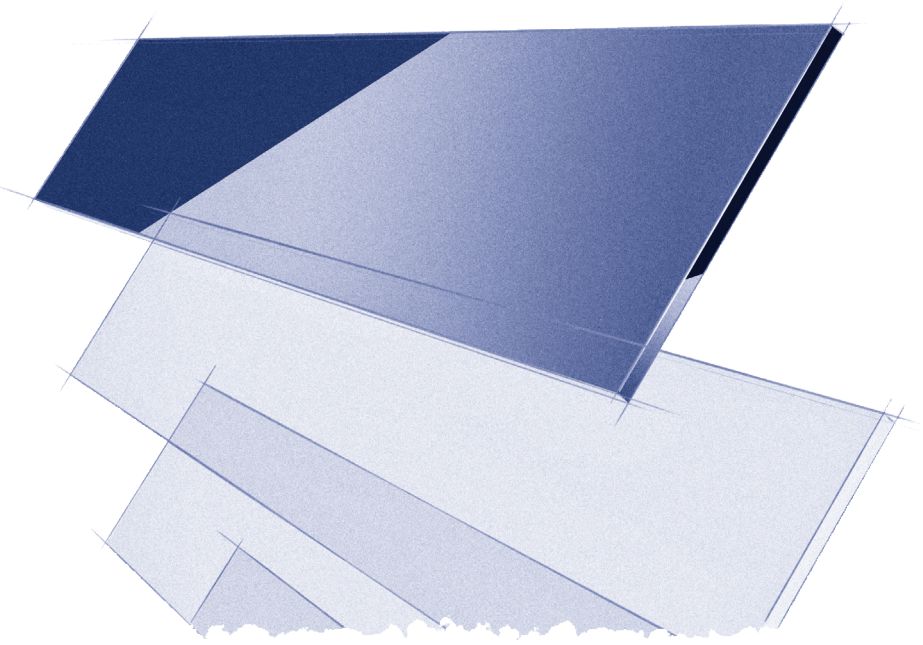
Window Systems, complete with all glazing, supplied by Breezway will have Breezway product certification stickers fixed to the underside of the head of the window frame.



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 Jeld-Wen Warranty Download - https://www.breezway.com.au/downloads/australia/JELD-WEN_Warranty_April2019.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.

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.

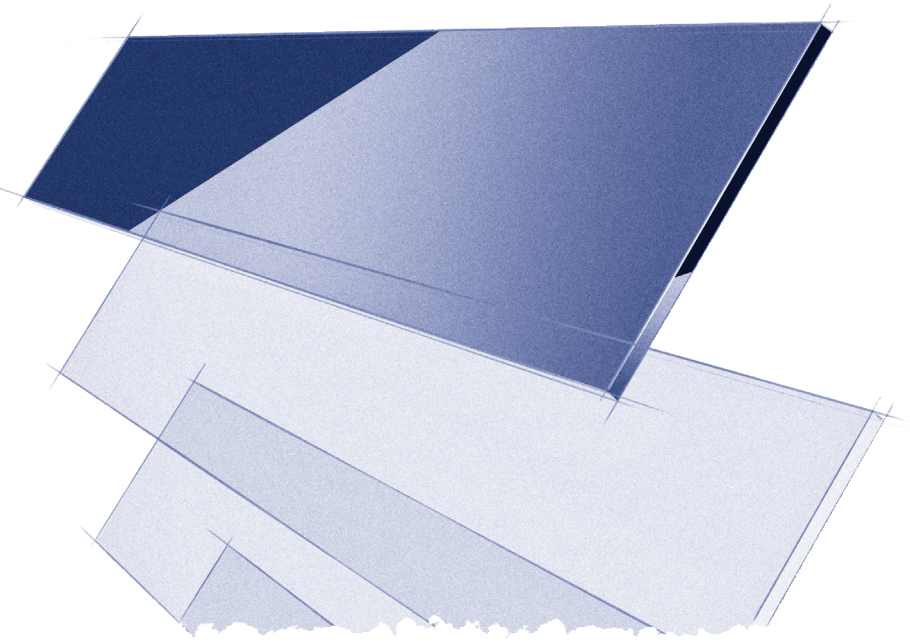
Selecting The Right Aluminium Finish

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 or timber 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, www.awawers.net

In warm climates the shading offered by tinted glass or timber blades 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 field tested for sound transmission loss.

The field tests were conducted by a member firm of the Association of the Australia Acoustical Consultants and were carried out on Altair windows 2400 high x 840 wide and 2100 high x 840 wide. Testing was conducted to ISO 717-1: 1996E.

Blade Material	R'45°w (C,Ctr)	R'w (C,Ctr)
Toughened Glass	27 (-0.6;-2.7)	28 (-0.9;-2.9)
Aluminium	25 (-0.7;-2.3)	-
Timber	24 (-0.9;-3.1)	-

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 1220 high x 1100 wide. 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)	STC
Glass	Glass	**35 (-1;-3) dB**	**35**
Aluminium	Glass	**35 (-2;-4) dB**	**34**

Breezway® Policy For Louvres 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 3959-2009 "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).

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 3959-2009

Bushfire Attack Level Low

The degree of bushfire attack is considered insufficient to warrant specific construction requirements.

Bushfire Attack Level 12.5.

Louvres are to be screened externally using corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 2 mm in such a way that the entire opening remains screened when the louvre is open and gaps between the screen and the window do not exceed 3mm.

Bushfire Attack Level 19

Louvres are to be screened externally using corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 2 mm in such a way that the entire opening remains screened when the louvre is open and gaps between the screen and the window do not exceed 3mm.

Bushfire Attack Level 29

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

Bushfire Attack Level 40

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

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

Bushfire Attack Level FZ

Louvre 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:

a. 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.
b. 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 3.9.2.5 and D2.24 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 the Australian Window Association's industry code of practice "ICP.005 - Protection of Openable Window Testing Specification":

A 152mm Altair Louvre Window with the Stronghold System, toughened glass or aluminium blades a maximum of 900mm long and all blade openings restricted to 100mm will comply with Clauses 3.9.2.5(b)(i)(A) and D2.24(b)(i)(A).

A 102mm Altair Louvre Window with the Stronghold System, toughened glass blades a maximum of 750mm long and all blade openings restricted to 80mm will comply with Clauses 3.9.2.5(b)(i)(A) and D2.24(b)(i)(A).

A 102mm Altair Louvre Window with the Stronghold System, toughened glass blades a maximum of 707mm long will comply with Clauses 3.9.2.5(b)(i)(A) and D2.24(b)(i)(A).

Note: The Altair Louvre restricted opening devices are permanent devices which cannot be removed, unlocked or overridden.

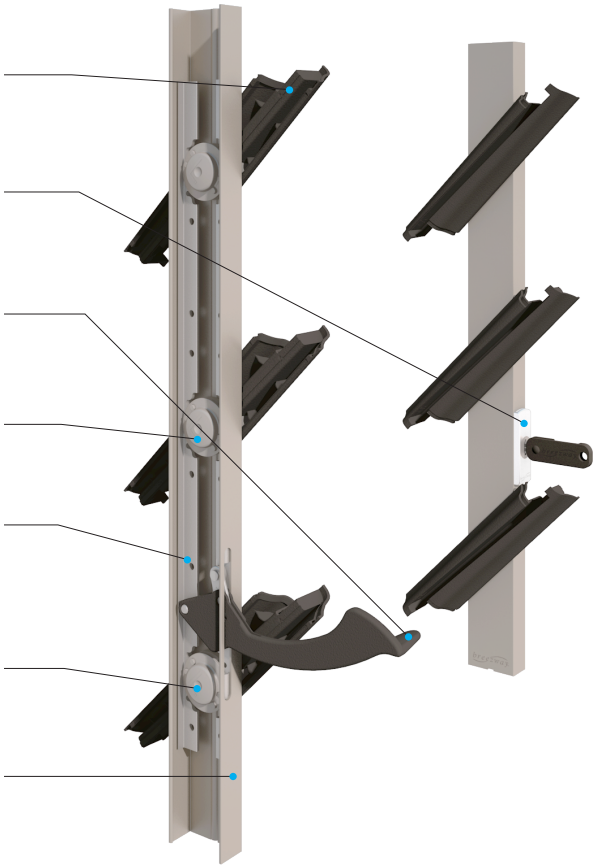
If screens will be used to provide protection as per Clauses 3.9.2.5(b)(i)(B) and D2.24(b)(i)(B) then the Altair Louvre Windows will not require the Stronghold System and will not require blade openings to be restricted. The window frame and securely fitted screen assembly should be tested to the Australian Window Association's industry code of practice "ICP.005 - Protection of Openable Window Testing Specification" 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. If Altair Louvres are used in a situation that requires a balustrade, then a system that complies with the relevant Building Codes should be installed in addition to the Altair Louvres.

Altair® Louvres

- Clips are manufactured from UV stabilised polypropylene. The clip colour is solid throughout. Primary and secondary drainage channels within the louvre clips direct the flow of any water to the outside of the building.
- Altair keylocks are zinc cast with a brushed chrome finish. The folding key design allows easy operation when installed in frames with deep jambs or reveals.
- The handle is made entirely from a UV stabilised acetal. This makes it not only non corrosive, but ideal for commercial areas, as it will spring back to position, even when bent severely. For other handle options see the Altair Handles section.
- For long and maintenance free use the operating and over centre locking mechanisms are manufactured from non-corrosive material, including all rivets and fasteners.
- Extruded "T" shaped aluminium operating bars provide a strong, non corrosive, durable and smooth operating mechanism. It also adds extra security as the bars operate to the outside of the channel at all times.
- Injection moulded bearings made of acetal use the living hinge concept to pull the louvre blade against the channel as the window is closed. This results in higher resistance to water and air. Security is now increased by interlocking teeth in the bearing retainer. (Tested to over 40,000 open/close cycles)
- The Altair Louvre channel is made from 6060-T5 extruded aluminium.
- Worldwide patents approved.



Breezway 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

Altair® Louvre Gallery Sets

For Glass, Timber and Aluminium Blades

Altair Louvre

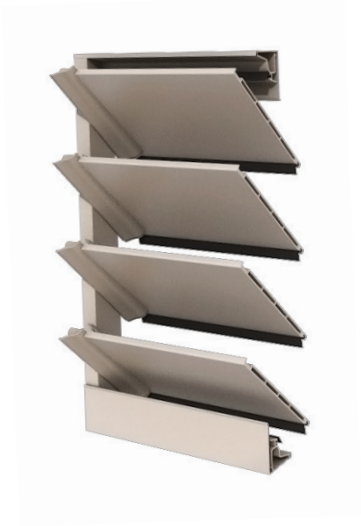
Operating bars and handles are supplied to one side only (left control is the standard, viewed from inside).

Altair Powerlouvre® Window

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

Altair Key Lock Louvre

Key locks are only available in a brushed chrome finish.



152 mm Fixed Louvre

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 Powerlourve® options.
- Fixed Louvre Gallery

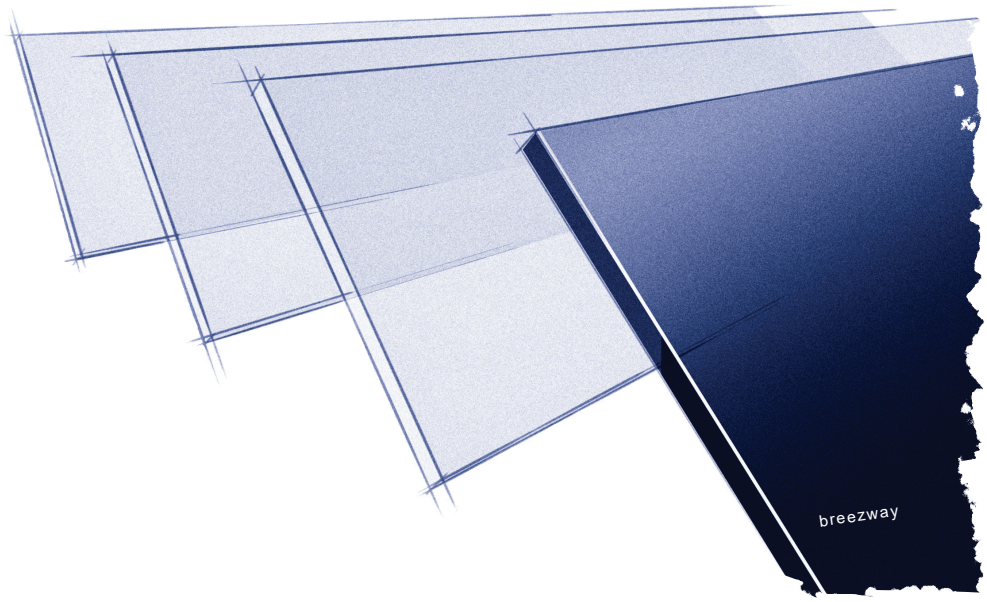
"Standard" Inclusions

- 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.

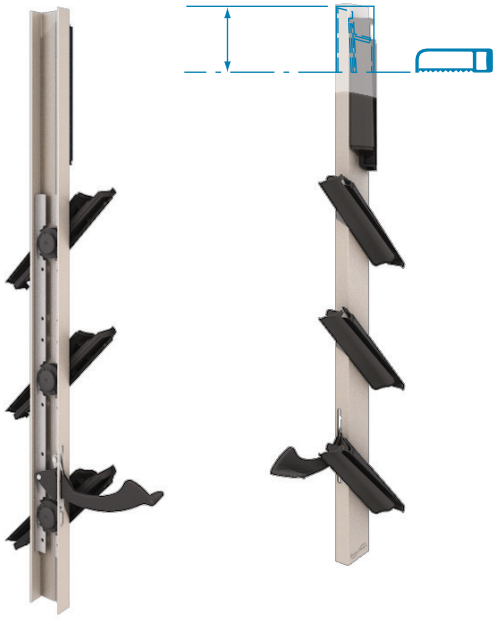
The Louvre is supplied with an Extended Channel that can be cut back to the required height. Note that the part to be cut down is located at the top of the gallery. All glass blades must comply with the requirements of AS1288 "Glass in Buildings".

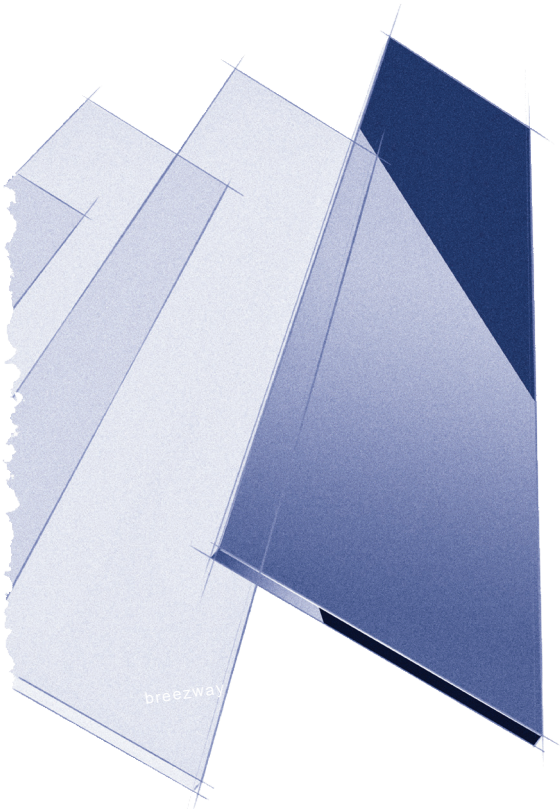
Off-standard heights within 5mm of a standard height do not need a fixed blade but the shrouds of the top clips may need to be trimmed for off-standard heights between 5mm and 2mm below a standard height.

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

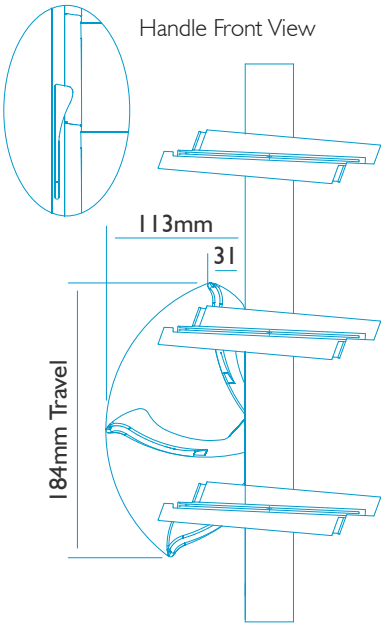
For example, the louvre illustrated is ordered as 3 blade with Extended Channel.

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



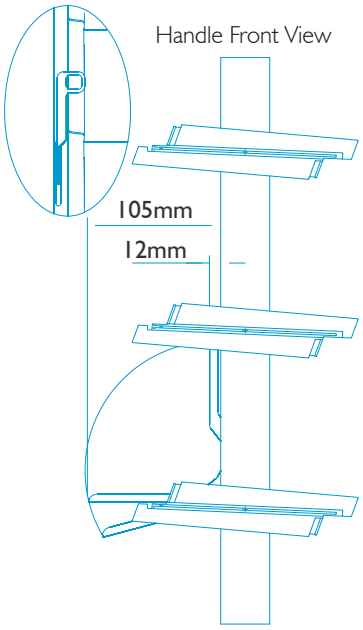


Altair® Louvre Handles



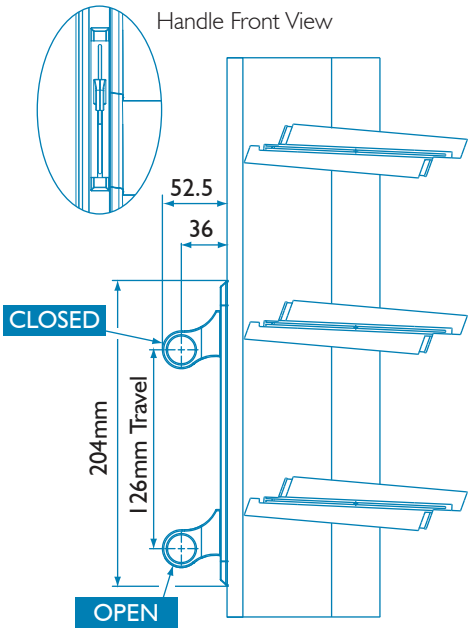
Standard Handle & Locking Bar

- Acetal handle
- Ergonomic design for comfortable use



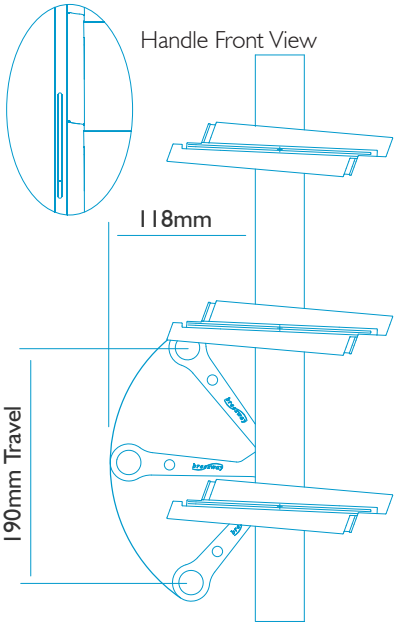
Low Profile Handle

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



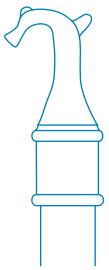
Innoscreen® Slide Handle

- 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
- Patents applied for



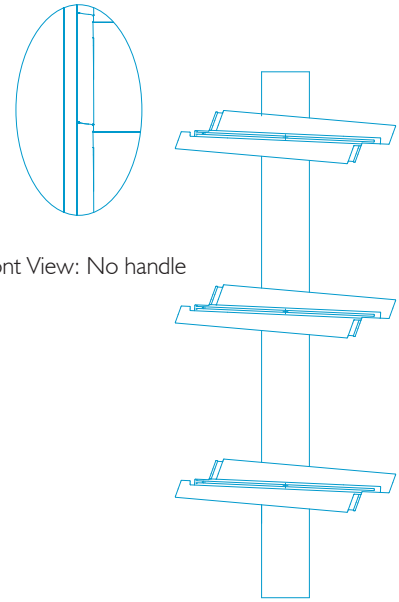
Ring Handle (P13)

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



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

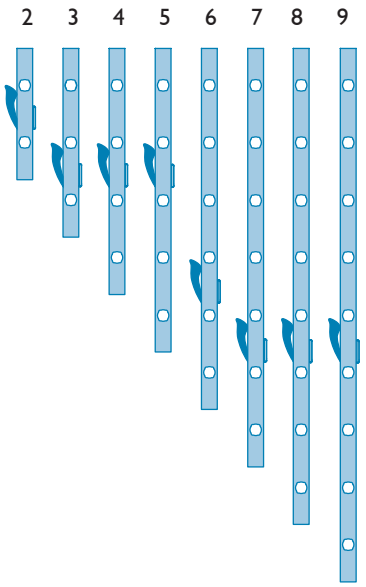


Powerlouvre™ Windows*

- Concealed motors and connectors for use with Remote Window Control Systems

*Keylock not available with Powerlouvre Windows.

Altair® 152mm Louvre Standard Handle Positions



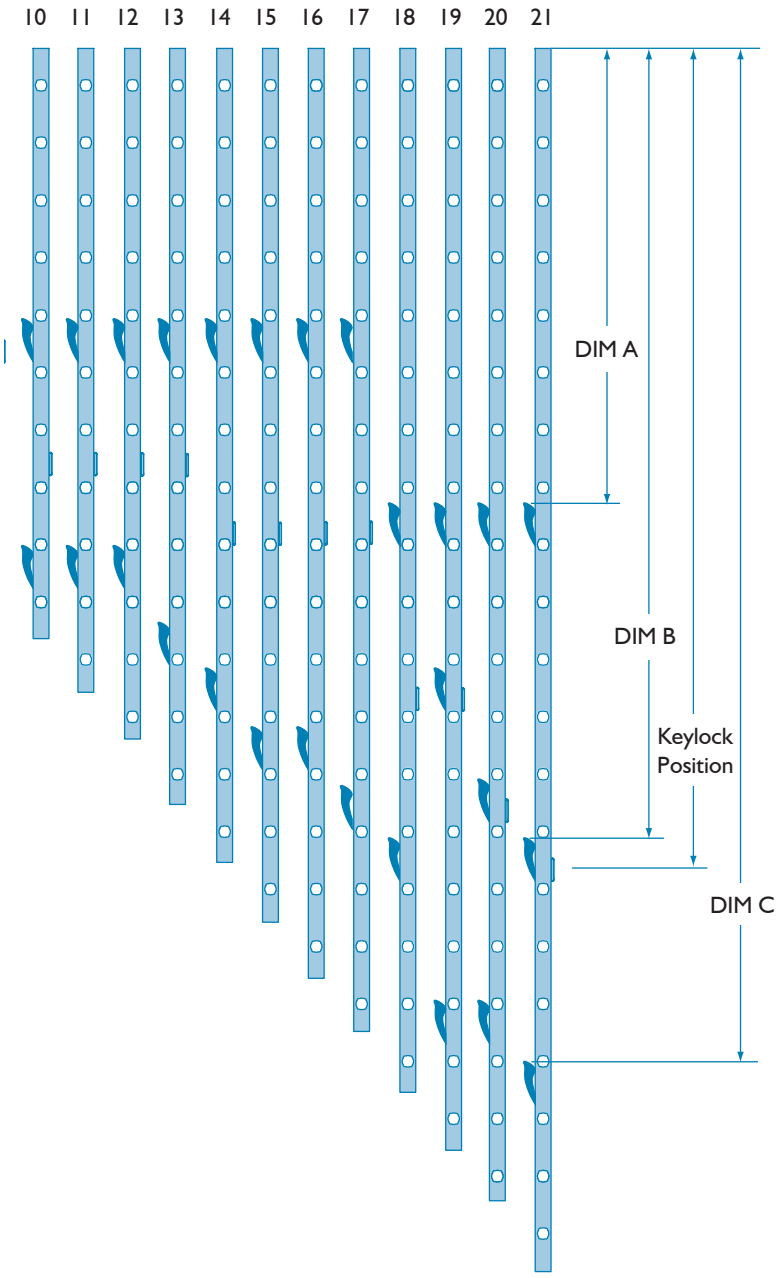
Formulas for Other Handle Positions

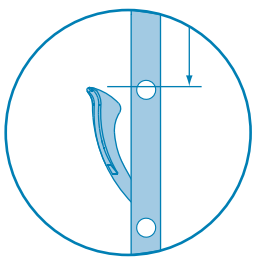
1. Low Profile Handle Position = Standard Handle Position – 3mm
2. Ring Handle Position = Standard Handle Position +22mm

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

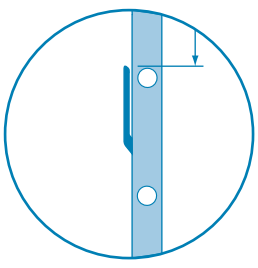
Note:

- 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.
- Relocated keylocks are not available.

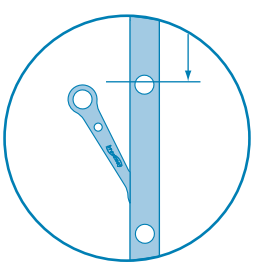




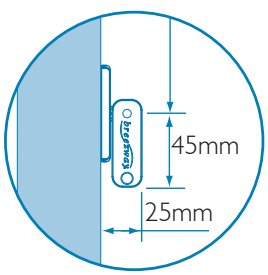
Standard Handle



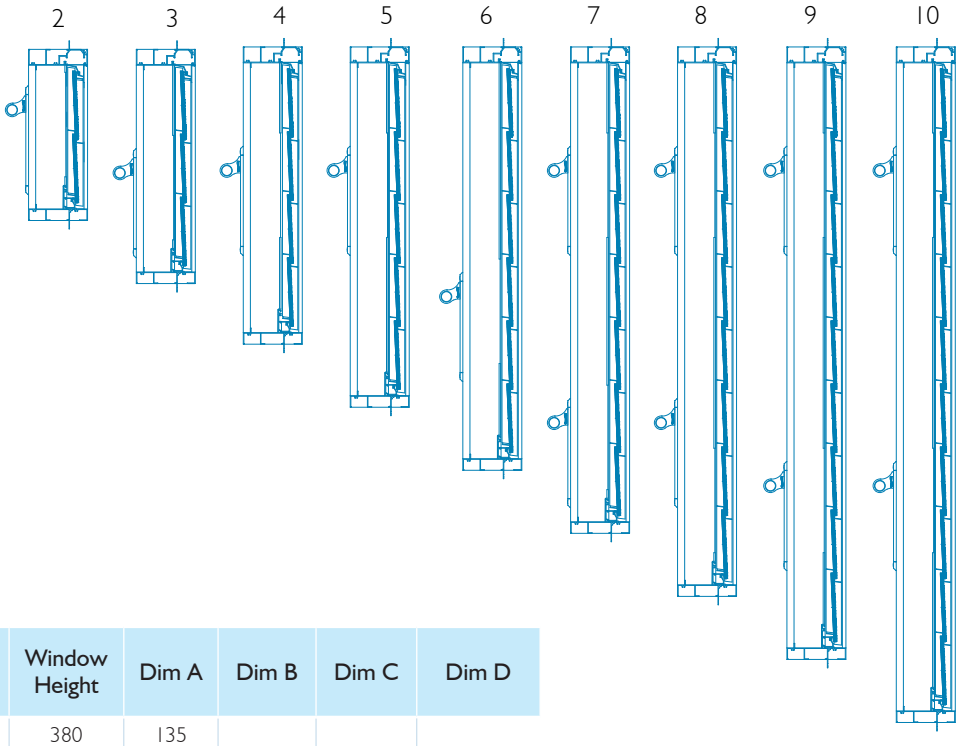
Low Profile Handle



Ring Handle (P13)



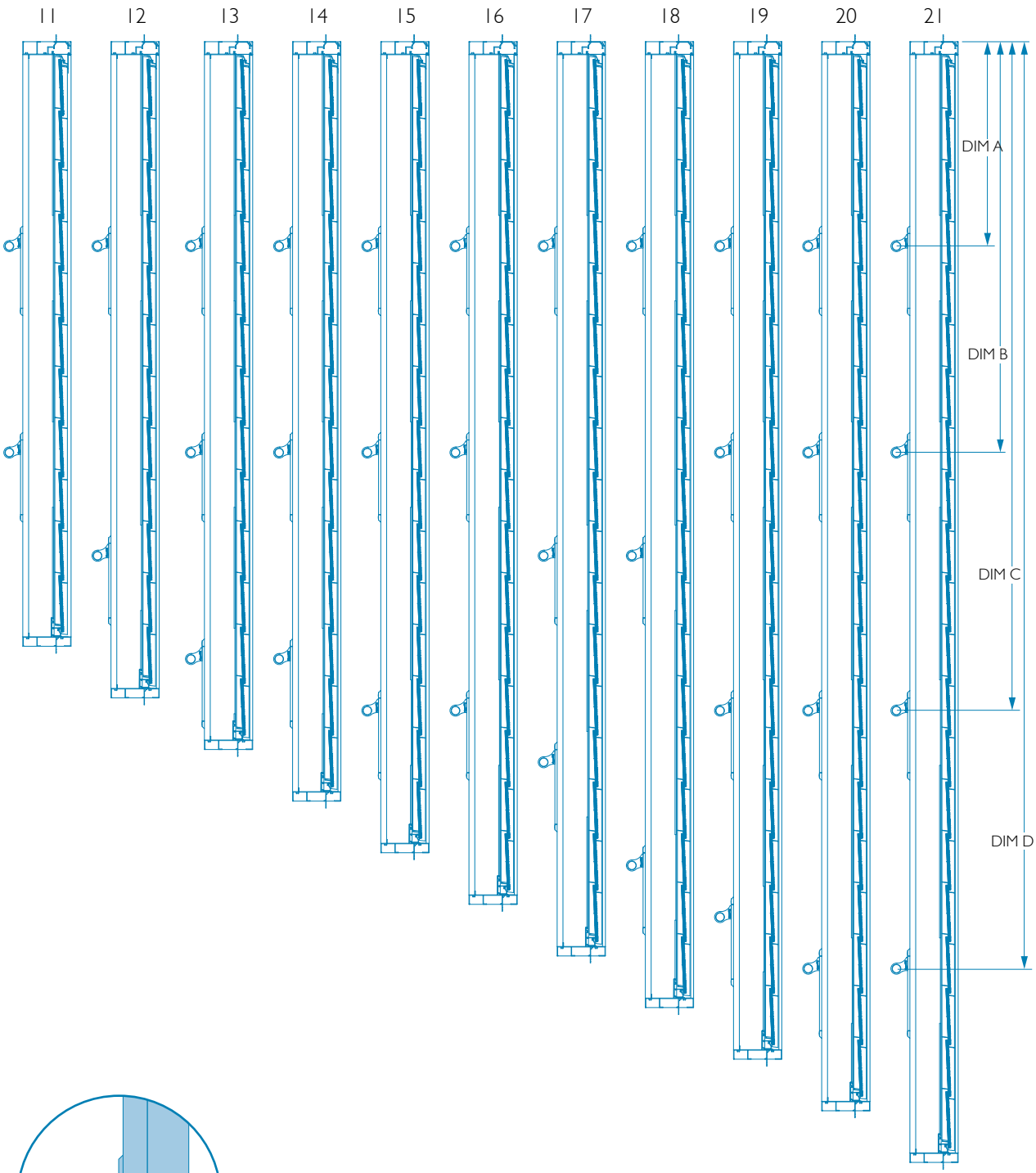
Innoscreen Window System Altair® 152mm Louvre Slide Handle Positions

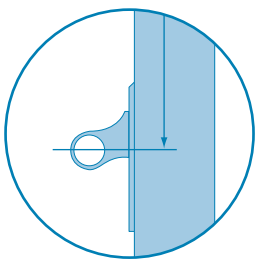


No. of Blades	Banks of Blades Controlled from Head Downwards				Window Height	Dim A	Dim B	Dim C	Dim D
2	2				380	135			
3	3				520	275			
4	4				660	275			
5	5				800	275			
6	6				940	555			
7	4	3			1080	275	835		
8	4	4			1220	275	835		
9	5	4			1360	275	975		
10	5	5			1500	555	975		
11	6	5			1640	555	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

Note:

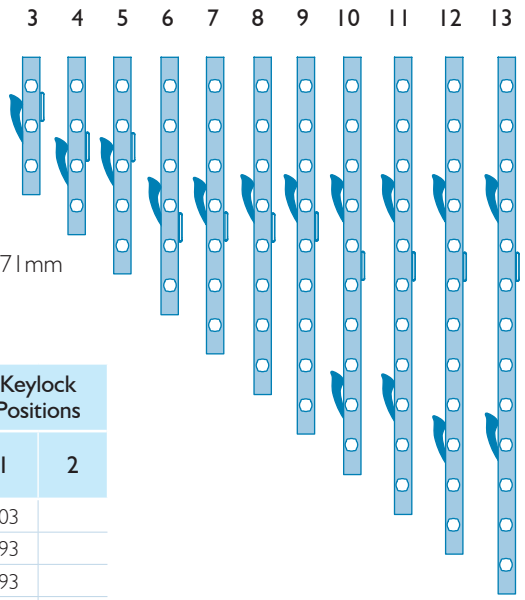
- Additional handles and alternate handle positions are not available.





Innoscreen Slide Handle.

Altair® 102mm Louvre Standard Handle Positions



Formulas for Other Handle Positions

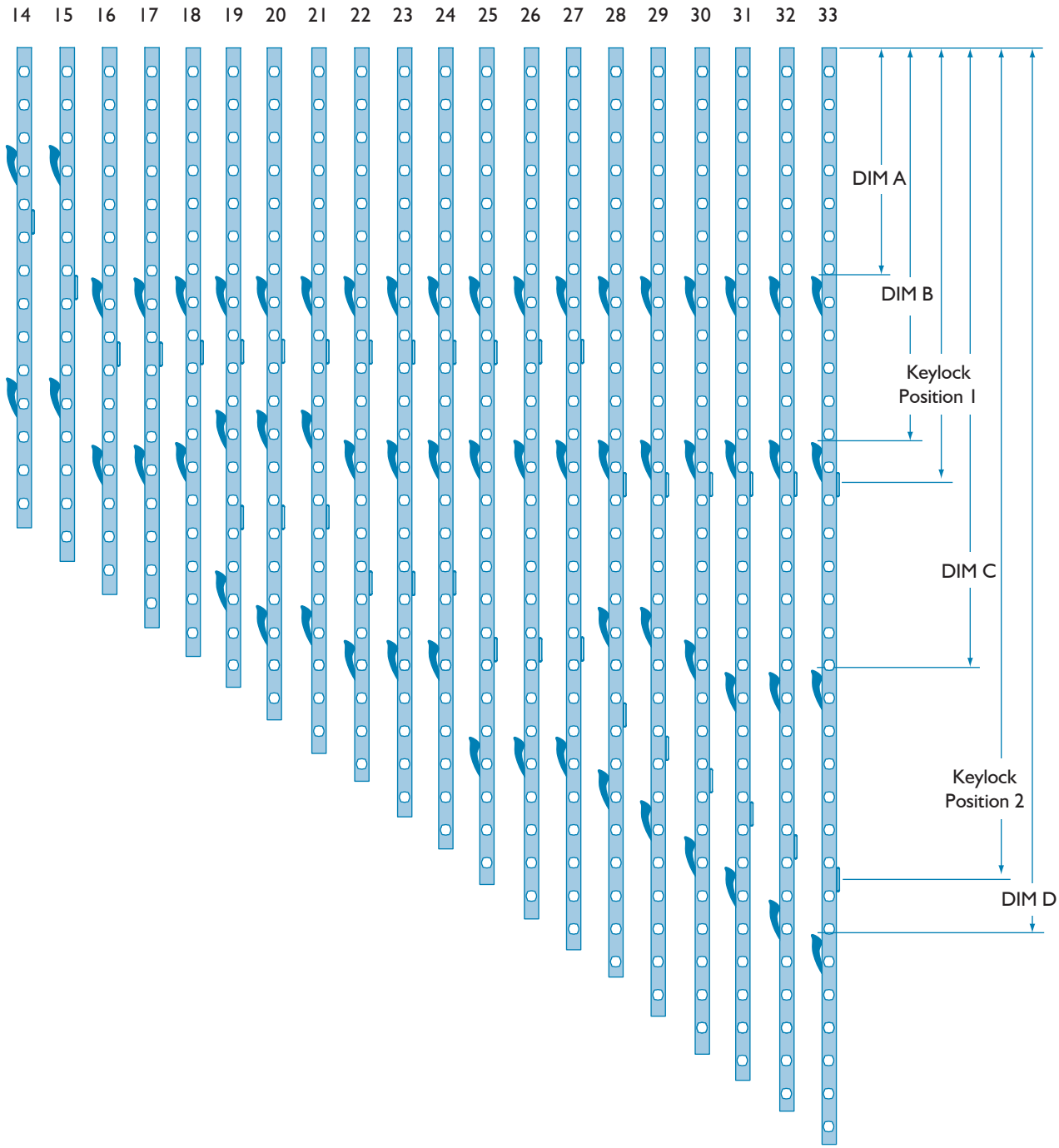
1. Low Profile Handle Position = Standard Handle Position – 8mm
2. Ring Handle Position = Standard Handle Position + 19mm*

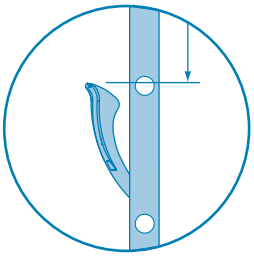
* For 3 and 4 blade galleries: Ring Handle position = Standard Handle Position –71mm

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

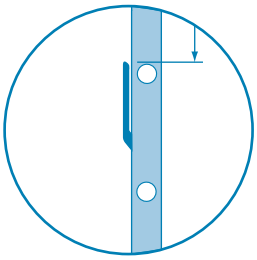
Note:

- 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.
- Relocated keylocks are not available.

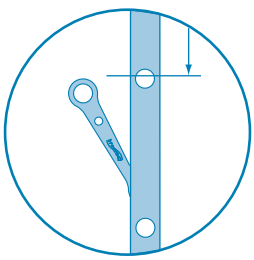




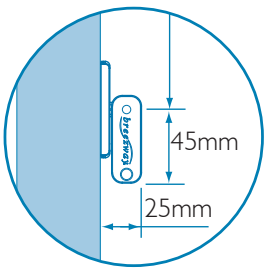
Standard Handle



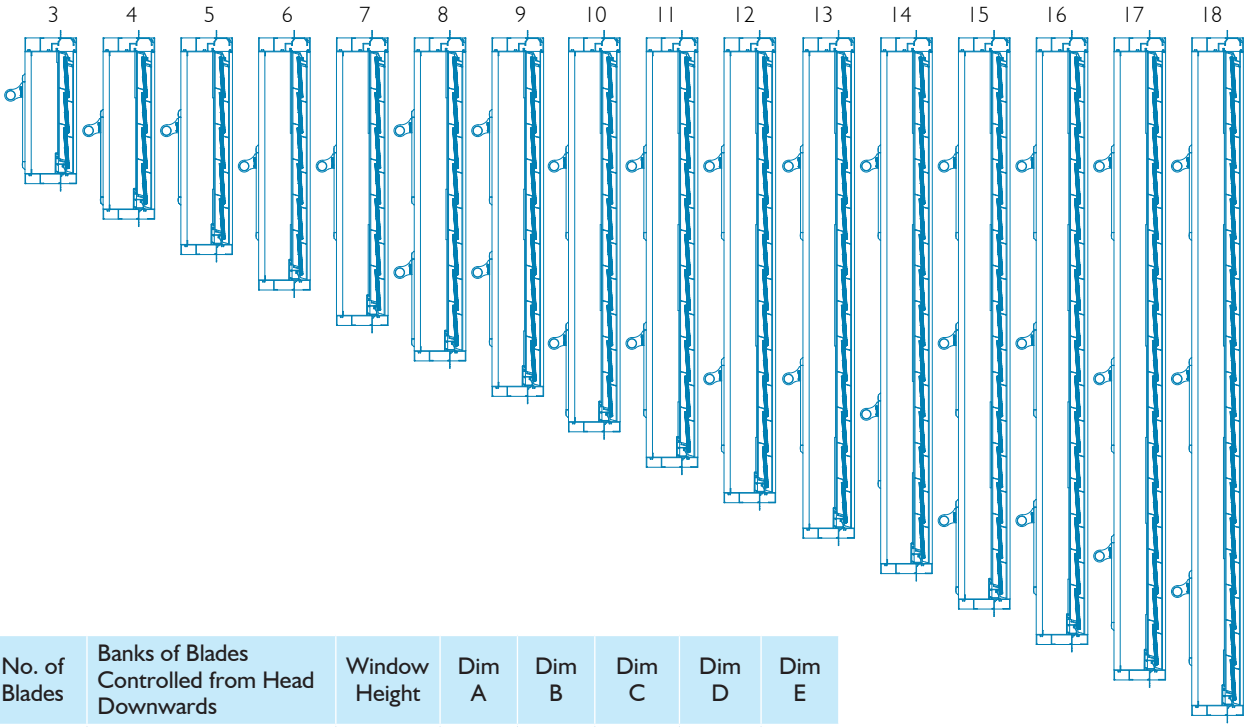
Low Profile Handle



Ring Handle (P13)



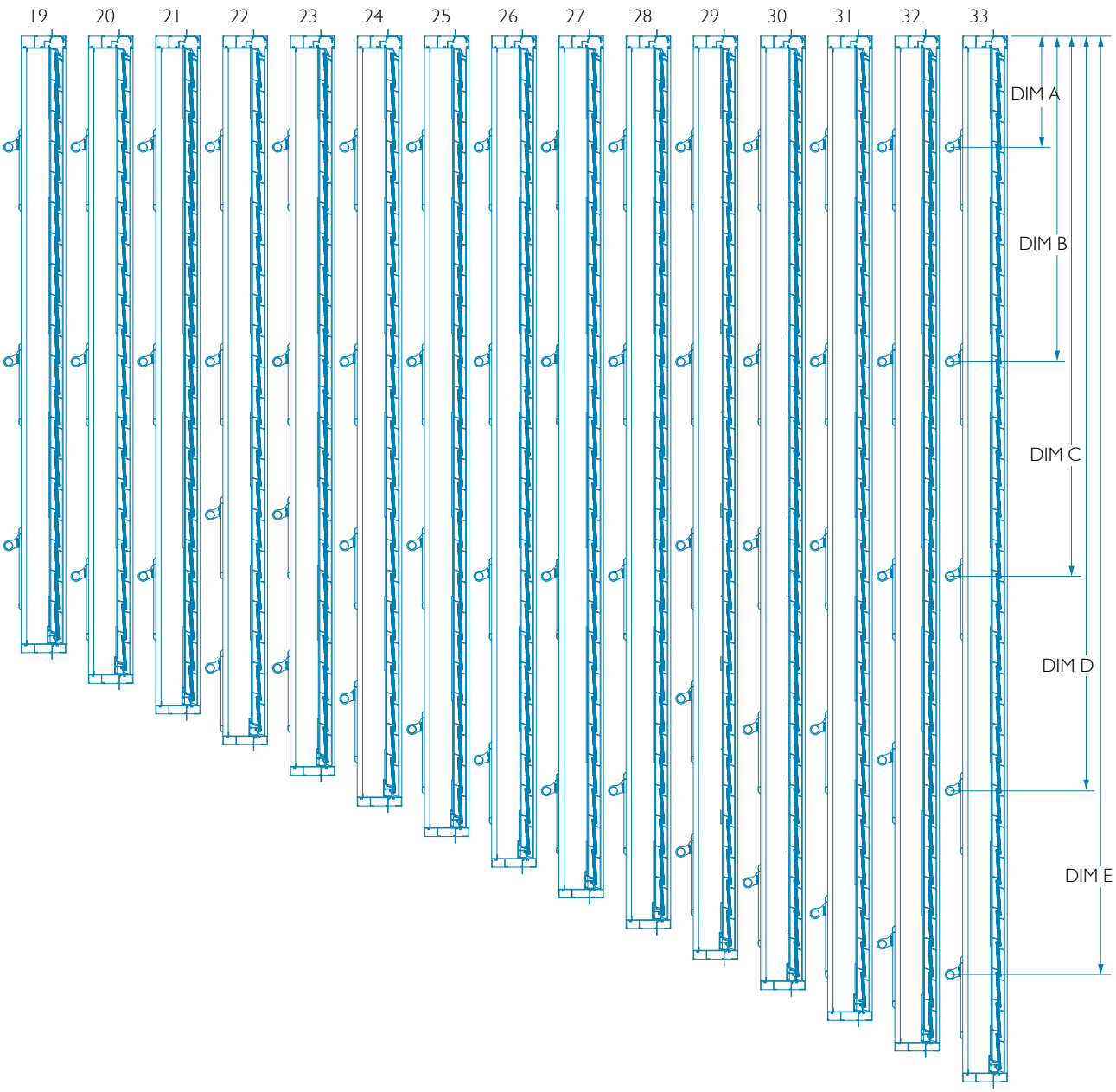
Innoscreen Window System Altair® 102mm Louvre Slide Handle Positions

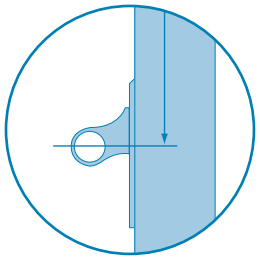


No. of Blades	Banks of Blades Controlled from Head Downwards	Window Height	Dim A	Dim B	Dim C	Dim D	Dim E
3	3	370	146				
4	4	460	236				
5	5	550	236				
6	6	640	326				
7	7	730	326				
8	4 4	820	326	596			
9	4 5	910	326	596			
10	6 4	1000	326	776			
11	6 5	1090	326	776			
12	6 6	1180	326	866			
13	6 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

Note:

- Additional handles and alternate handle positions are not available.



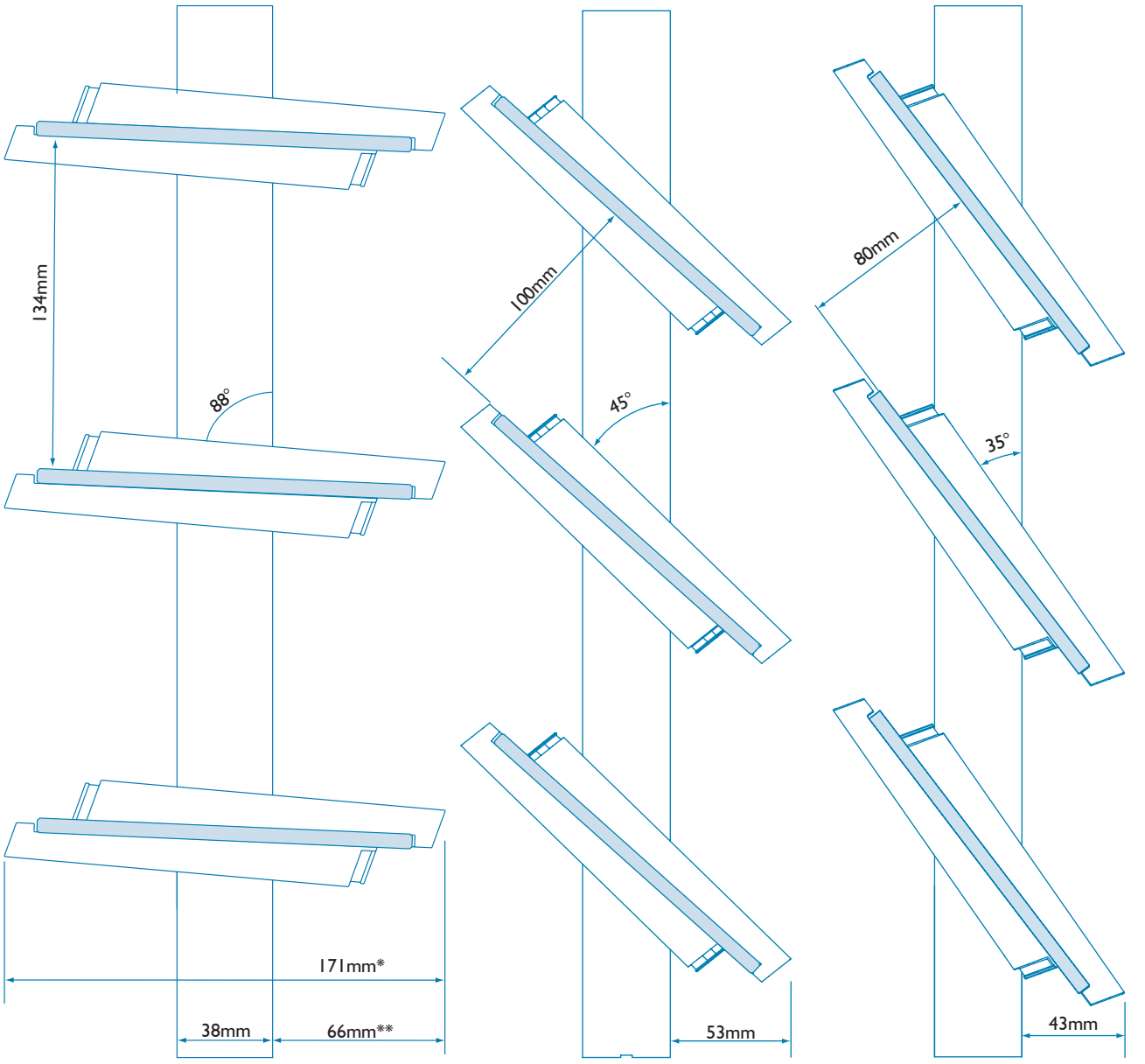


Innoscreen Slide Handle.

Altair® Louvres With Restricted Opening

Altair Louvre Windows can be restricted to only allow a nominal opening of 80mm or 100mm between open 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 14.



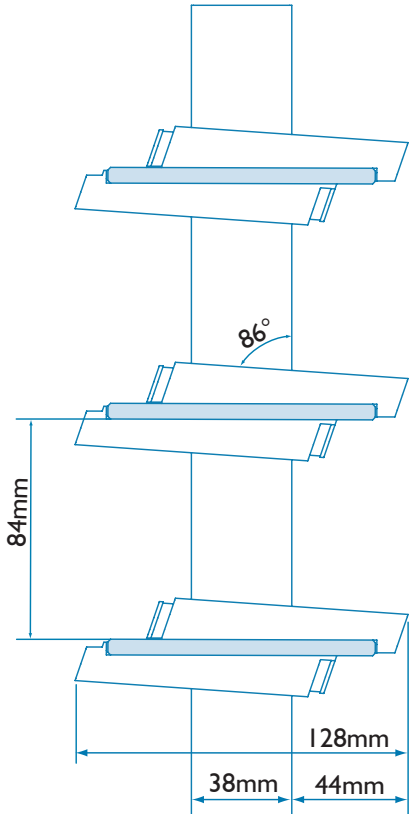
152mm Louvre
Unrestricted Opening

152mm Louvre
100mm Restricted Opening

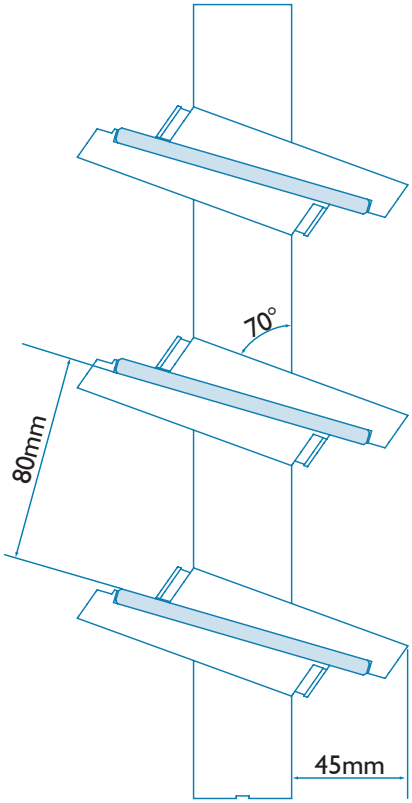
152mm Louvre
80mm Restricted Opening

*178mm when clips to suit 14mm thick blades are used.

**69mm when clips to suit 14mm thick blades are used.



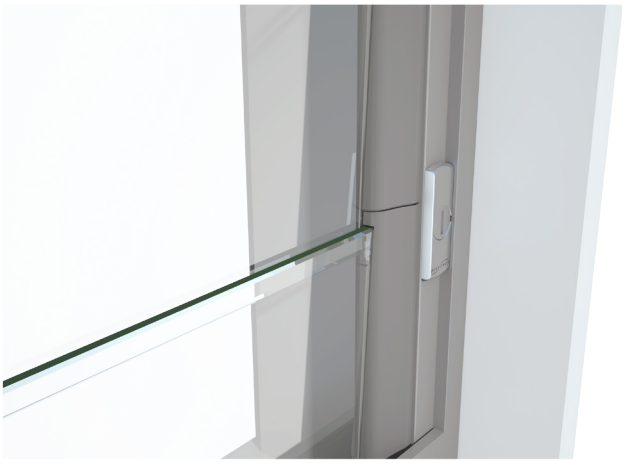
102mm Louvre
Unrestricted Opening



102mm Louvre
80mm Restricted Opening

Altair® Louvre Keylock

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

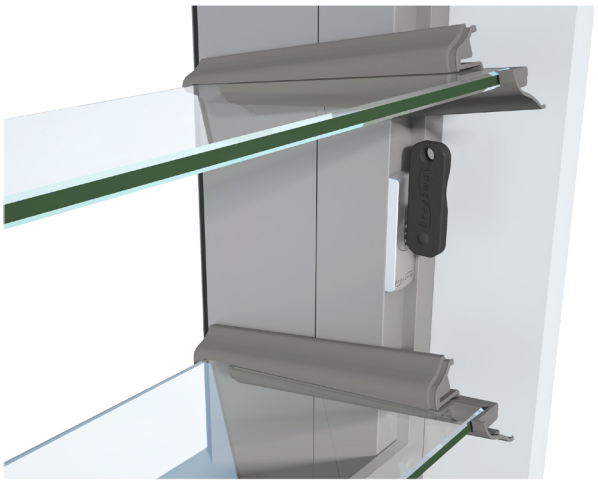


Improved aesthetics
- Housing the lock mechanisms internally results in a low profile design. The brushed chrome finish suits all aluminium finishes.

Strong and 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 onging 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 de-lamination.

Breezway Toughened Glass Blades

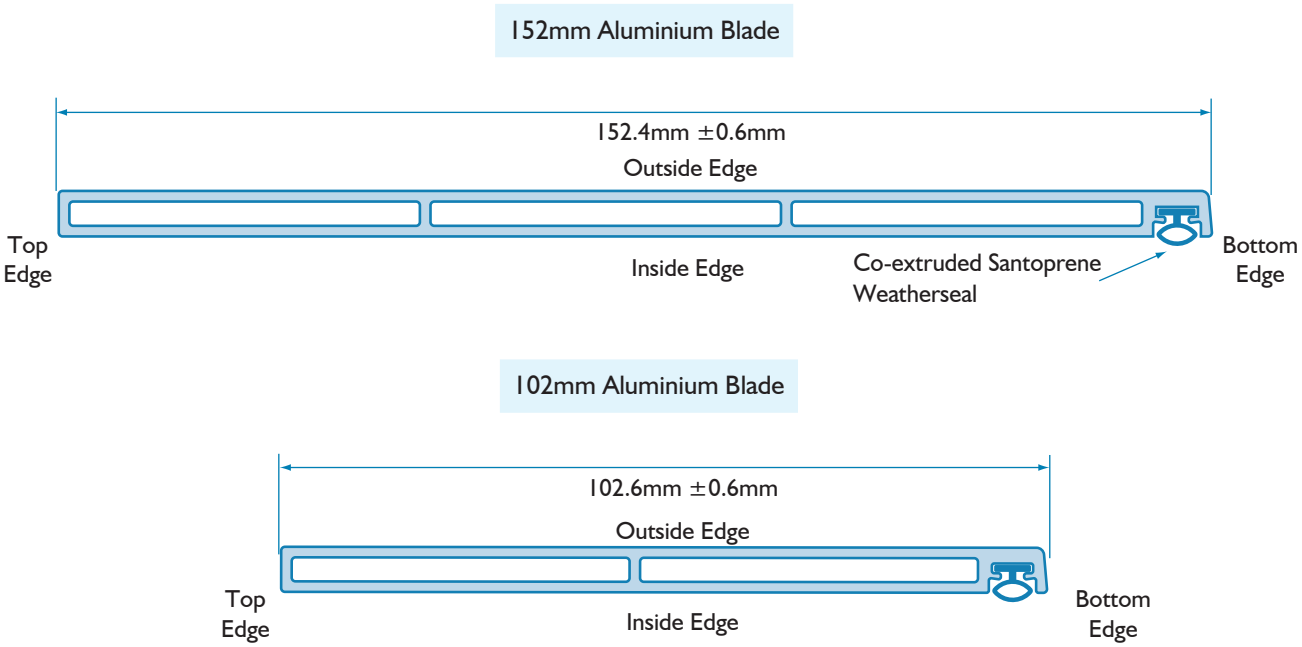
Regular and toughened glass blades are available directly from Breezway® Australia. Toughened glass should be specified in wet areas or areas where there is a chance of human impact as not only is toughened glass stronger but, if it does break, it produces small pieces of glass with square edges rather 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 +/– 0.35mm 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

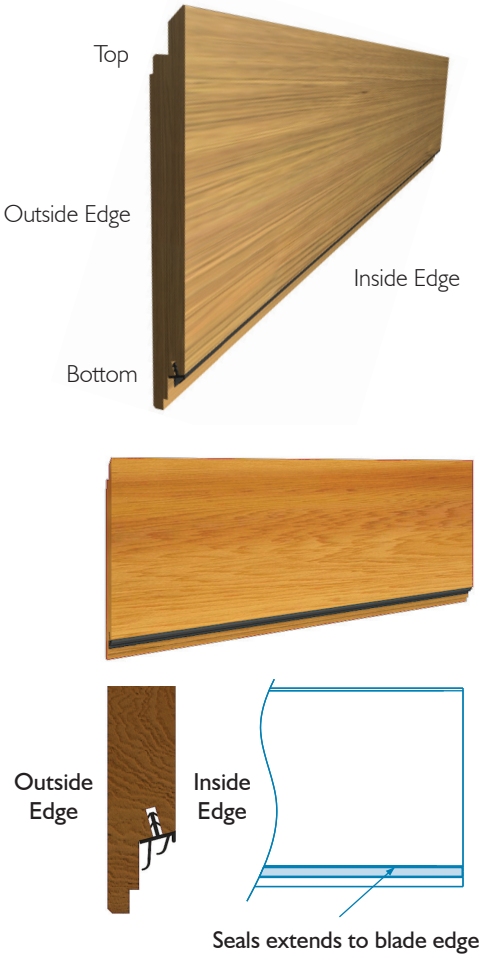
- Breezway aluminium blades feature low profile weatherseals and a clean design at the top of the blade for a minimalist, modern aesthetic.



Timber Blades

Species and Style

- Western Red Cedar
- Straight cut to suit 14mm clips



Straight cut timber blade

Finishing and Installation

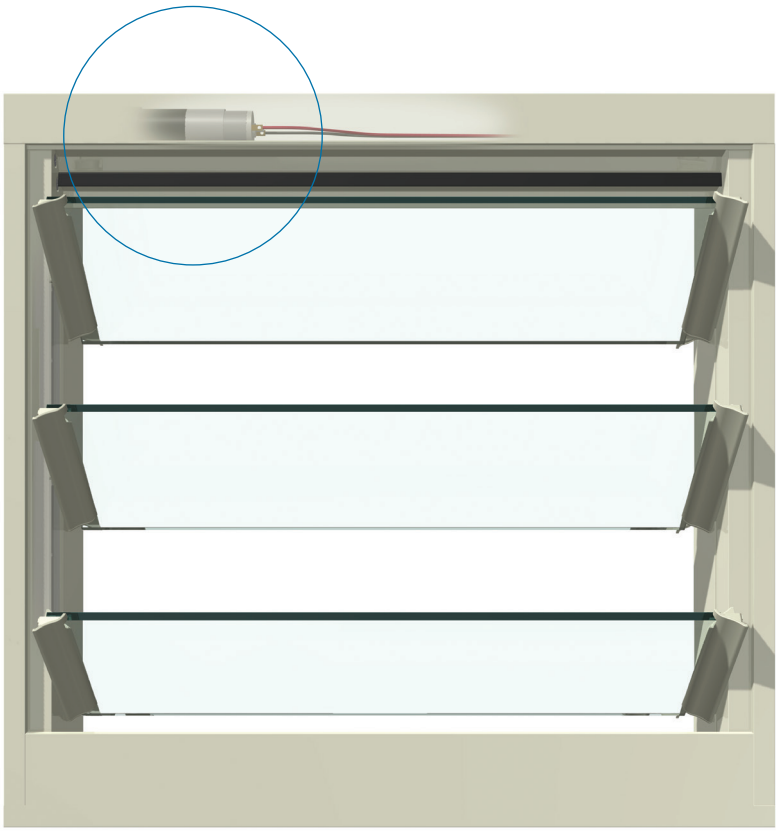
Western Red Cedar blades are a natural material and as such will be susceptible to colour variations and natural movement. Prior to installation or exposure to weather, all timber blade surfaces must be finished with a suitable exterior grade finish. The finish used should be 'non-tacky' or 'abrasion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

When installing the timber blades into the clips, care must be taken not to split the ends of the timber. Slide the blade slowly into the top of both sides of the open clips. Flex one side and then the other in sequence while easing the blade into place. To help the blades to ease into the clips, spray the ends of the blades with clean water. When installed correctly the clip will flex back and firmly hold the timber blade. Ensure the seal is sitting correctly and not twisted once installed.

To remove straight cut blades use a paint scraper or butter knife to flex the plastic blade retainer out of the way.

Patents have been applied for.

Altair® Powerlouvre™ Window



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

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.

Powerlouvre™ Window 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™ Window Maintenance

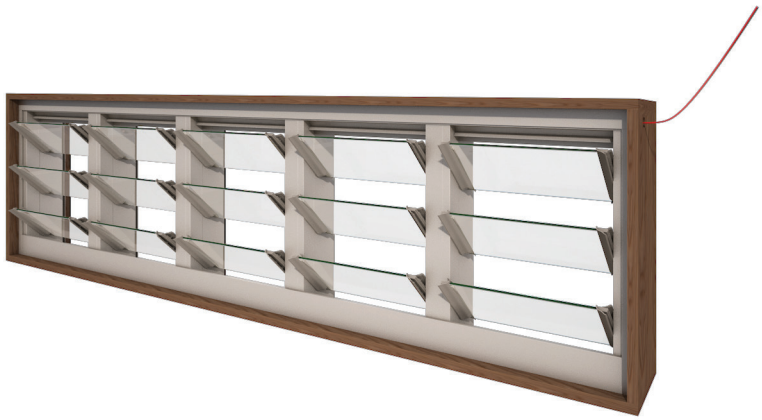
Breezway Powerlouvre Windows should be operated at monthly intervals. Frames should be cleaned periodically as per Breezway Care and Maintenance recommendations.

Powerlouvre™ Window 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™ Window Electrical Requirements & Wiring

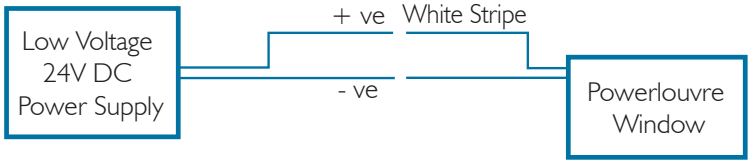
- Operating voltage: 24V DC
- Maximum allowed voltage 29V DC
- Maximum constant current: 0.25A per motor
- Maximum startup current: 0.4A per motor
- Opening time: Approx 14 seconds
- Working temperature: -20°C to +60°C

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.

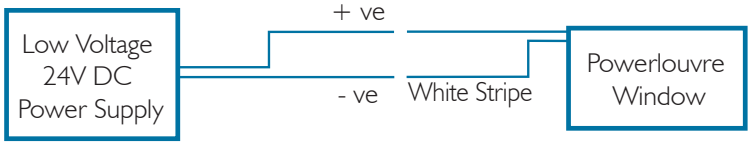
Maximum Constant Current Requirements			
Powerlouvre Window Type	Motors per bay	Maximum Constant Current Required	Maximum Instantaneous Start Up Current Required
2-9 Blades High	1	0.25 amps per bay	0.4 amps per bay
10-18 Blades High	2	0.5 amps per bay	0.8 amps per bay

The direction in which the Powerlouvre Window 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.

To **close** the Powerlouvre Window:



To **open** the Powerlouvre Window:



Battery Backup

The Powerlouvre Window has no integrated battery back up. If the power supply fails the window cannot be operated. If battery back up is required, systems are readily available and can be integrated by qualified suppliers.

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.
- Sufficient amps to power up to 6 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™ Windows

Control options include:

- Breezway Powerlouvre Apptivate® 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.

Powerlouvre™ Apptivate® Control Unit

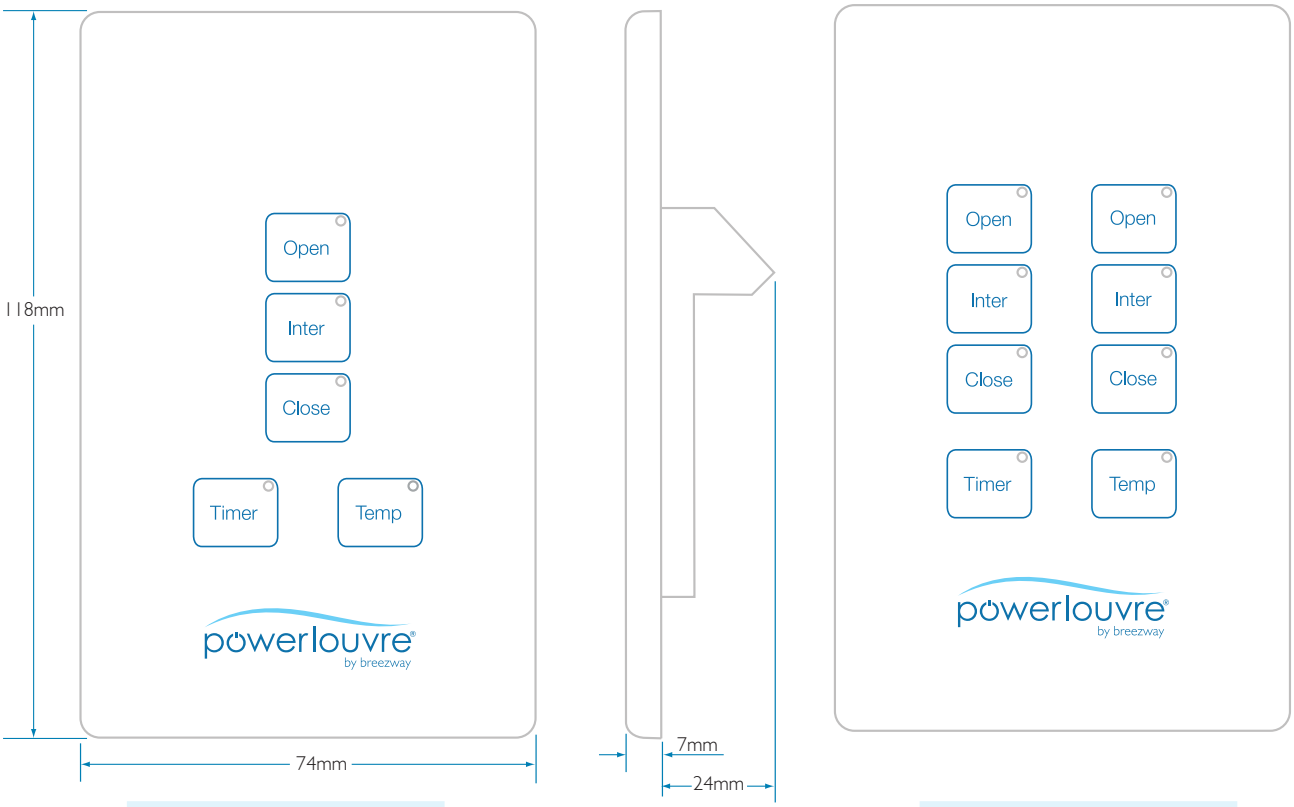
The Powerlouvre Apptivate Control Unit is a plastic, touch-sensitive wall switch.

Features include:

- White, standard sized wall switch.
- Single channel and dual channel models.
- Control of up to 6 Powerlouvre Motors per channel.
- 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® module to allow control by and communication with compatible smartphones and tablets.

Additional features accessible through the Powerlouvre™ 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.



Apptivate® Control Unit Single Channel

Apptivate® Control Unit Dual Channel

Powerlouvre™ App

The Apptivate® Control Unit includes a Bluetooth® Smart™ modules which allows wireless communication between a compatible device running the Powerlouvre App and the Apptivate Control Unit.

Remote control.

The Powerlouvre app enables:

- Remote opening and closing of each Apptivate 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 App and the Apptivate Control Unit.)
- Naming of Apptivate Control Units, and channels of Apptivate Control Units for easy identification.
- An indication of the open/close position of the Powerlouvre Windows connected to each Apptivate Control Unit.

Compatible devices.

Compatible devices will have Bluetooth® Smart™ modules installed and have an iOS or Android operating system. Devices include:
Apple products running iOS 7 or newer:

- iPhone 4s and newer
- iPad 3 and newer
- iPad Mini and newer
- iPod Touch 5

Devices running Android 4.3 and newer, including:

- Samsung Galaxy Range
- HTC One, MAX
- Sony Experia Range
- Droid RAZR, Ultra, Maxx, Mini
- Google Nexus 4, Nexus 5, Nexus 7 and Nexus 10

Security.

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

- Close physical proximity between the Powerlouvre App and the Apptivate Control Unit, and
- An access code (defined by the first Powerlouvre App to be associated to the Apptivate Control Unit).

If the Access Code is forgotten, a factory reset button can be activated by snapping off the front cover plate of the Apptivate Control Unit and pushing a paperclip through a small hole to hold a button down for a brief period. Security will be maximised by positioning the Apptivate Control Unit in a location that restricts unauthorised access.

If restricting access to the Apptivate Control Unit is not practical then users can seal the hole to block access to the factory reset button from the front panel necessitating the unscrewing of the Apptivate Control Unit from the wall in order to carry out a factory reset.

Automatic operation in response to temperature.

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

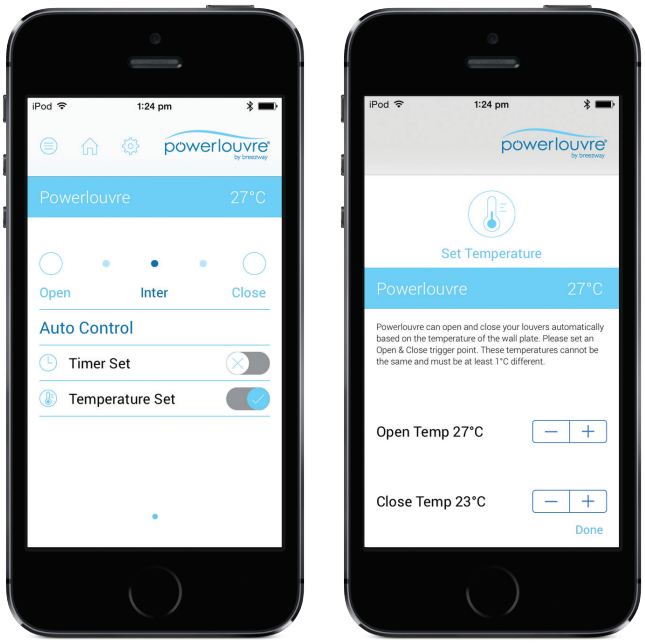
- Automatically open the windows to naturally cool the room, or
- Automatically close the windows to retain warmth within the room.

Automatic response to temperature can be enabled or disabled:

- Remotely from the Powerlouvre App, or
- Directly on the Apptivate 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.
- When responding to temperatures both channels of Dual Channel Apptivate Control Units will respond simultaneously to the temperature sensor.



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™ App, or
- Directly on the Apptivate® Control Unit.

This allows timer events to easily be disabled as the homeowner leaves the house or enabled as they arrive home.

Note:

- When responding to timer events both channels of Dual Channel Apptivate Control Units will respond simultaneously.

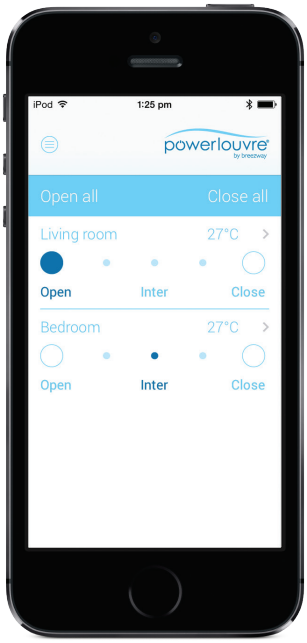
Control of multiple Apptivate® Control Units.

Up to 6 Apptivate Control Units can be associated to each Powerlouvre App allowing building occupants to control windows around their home from their Powerlouvre App.

For ease of identification:

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

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



Control by multiple Powerlouvre™ Apps.

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

Note:

- Only one Powerlouvre App will be able to maintain an active Bluetooth® Smart connection with an Apptivate Control Unit at any given time.

For example: Both John and Mary's Powerlouvre Apps are associated to the Apptivate Control Unit operating the Powerlouvre Windows in their living room. If John opens the windows using his Powerlouvre App, Mary will not be able to close the windows using her Powerlouvre App until John minimises the Powerlouvre App on his smartphone or his smartphone enters 'sleep' mode.

Apptivate® Control Unit Standard Wiring

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

Up to 6 Powerlouvre Motors can be wired in parallel to each Apptivate Control Unit motor group.

It is recommended that transformers are located in a position that enables easy power cycling.

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

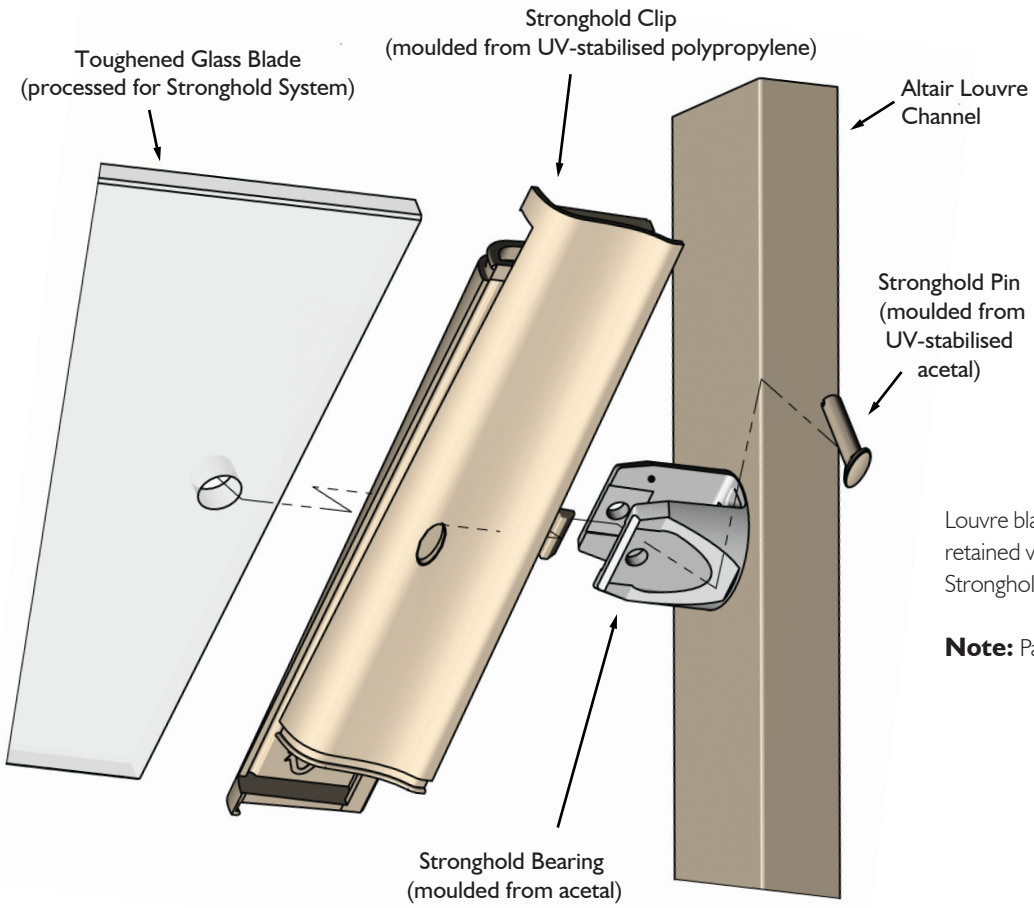
Building Management System Compatibility

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 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 Control Units are not compatible with building management systems.

Altair® Louvres with the Stronghold® System



Viewed from inside

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

Note: Patents applied for.

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.

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.

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.

Blade Type Compatibility

	152mm High	102mm High
Annealed glass	N	N
Toughened glass	**Y**	**Y**
Aluminium	**Y**	**Y**
Straight cut timber	N	N
Rebated timber	N	N

Powerlouvre™ 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 desigend 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 + 24mm to standard height + 35mm
Innoscreen Window System	Standard height + 26mm to standard height + 37mm
SL2 Window System	Standard height + 19mm to standard height + 30mm
Altair Component System	Standard height + 19mm to standard height + 30mm

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 with the Stronghold® System

Unique features:

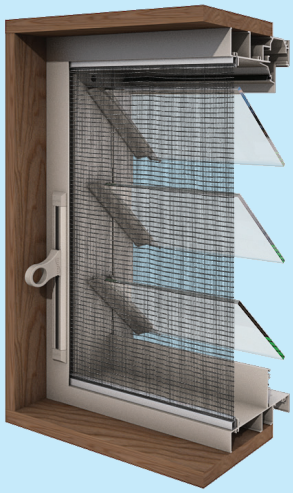
- Patented drainage channels for superior water performance.
- Patented 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Pinned design that mechanically retains blades within the clips to prevent blade dislodgement under human impact.

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

Unique features:

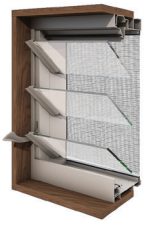
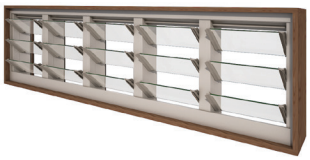
- Patented drainage channels for superior water performance.
- Patented 'Living Hinge' design that pulls the clips tightly against the channel when closed for superior water performance and air infiltration.
- Motors are concealed within the head of the window frame.
- Motors are easily accessible for maintenance.
- Each low voltage motor only requires 0.25 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® 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
Fixed Lite Bays	Yes*	Yes*	Yes*
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
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.

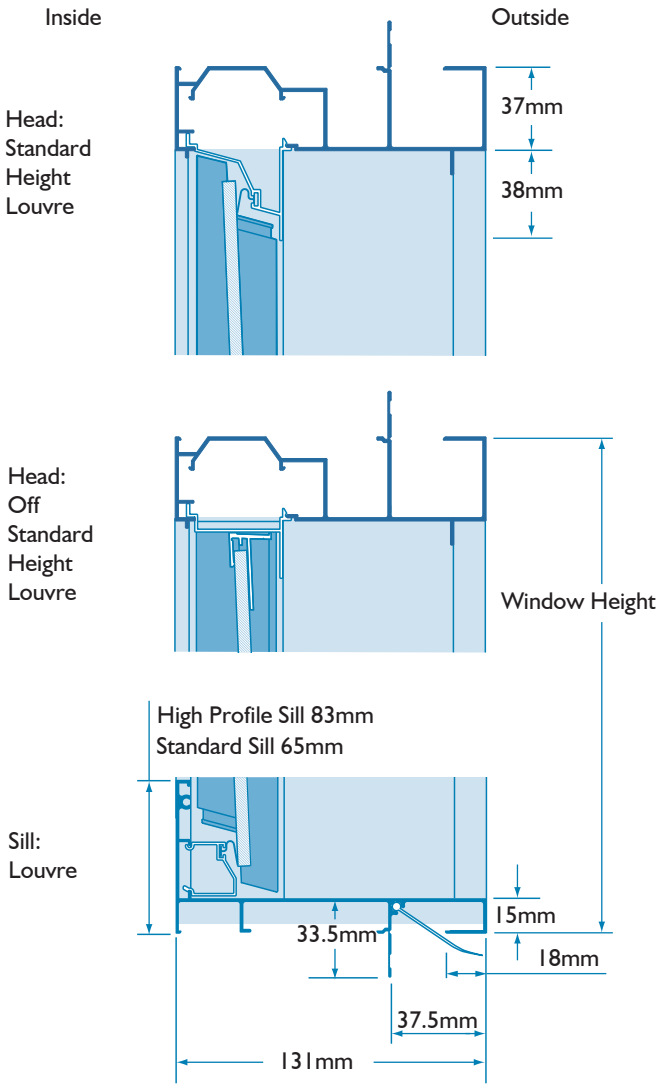
Easyscreen™ Window System

Product		Description
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.

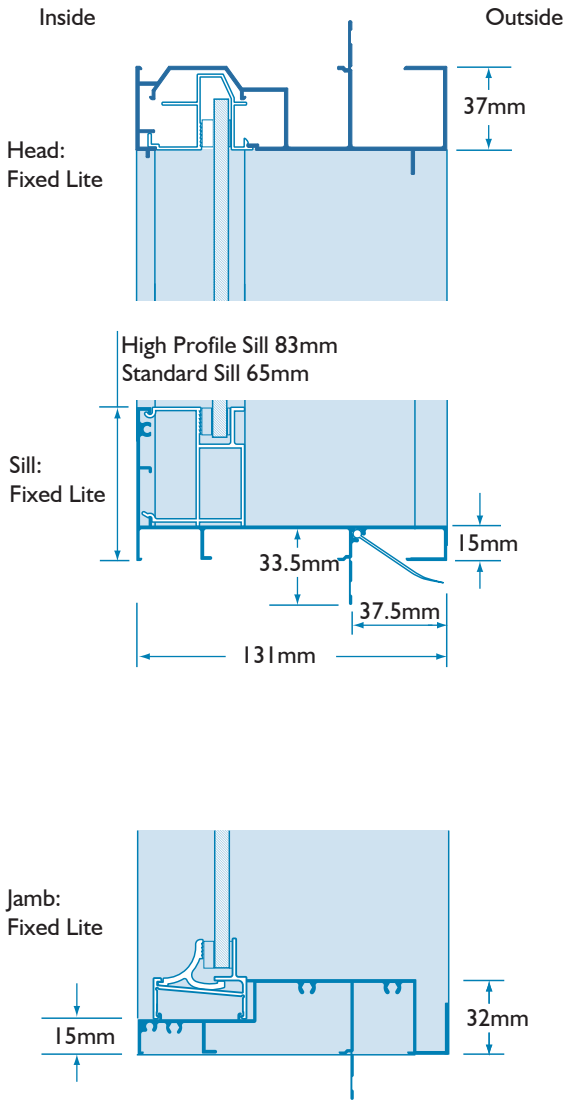
Easyscreen Window System Accessories

Product		Description
Easyscreen Coupler	 2mm	Couple Easyscreen Window Systems together. (2mm extra height or width)
Easyscreen Cover Plate	 2mm	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)

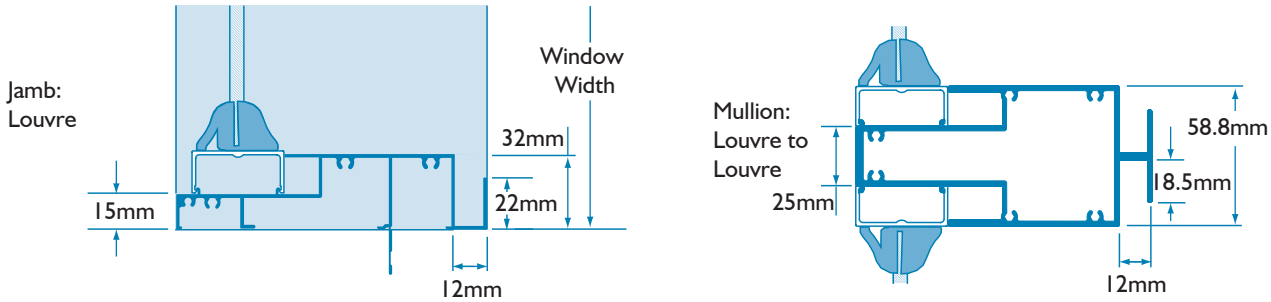
Easyscreen™ Louvre Window System



Easyscreen™ Fixed Light Window System



Easyscreen Mullion



Note: Design Registrations apply.

Note: 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°.

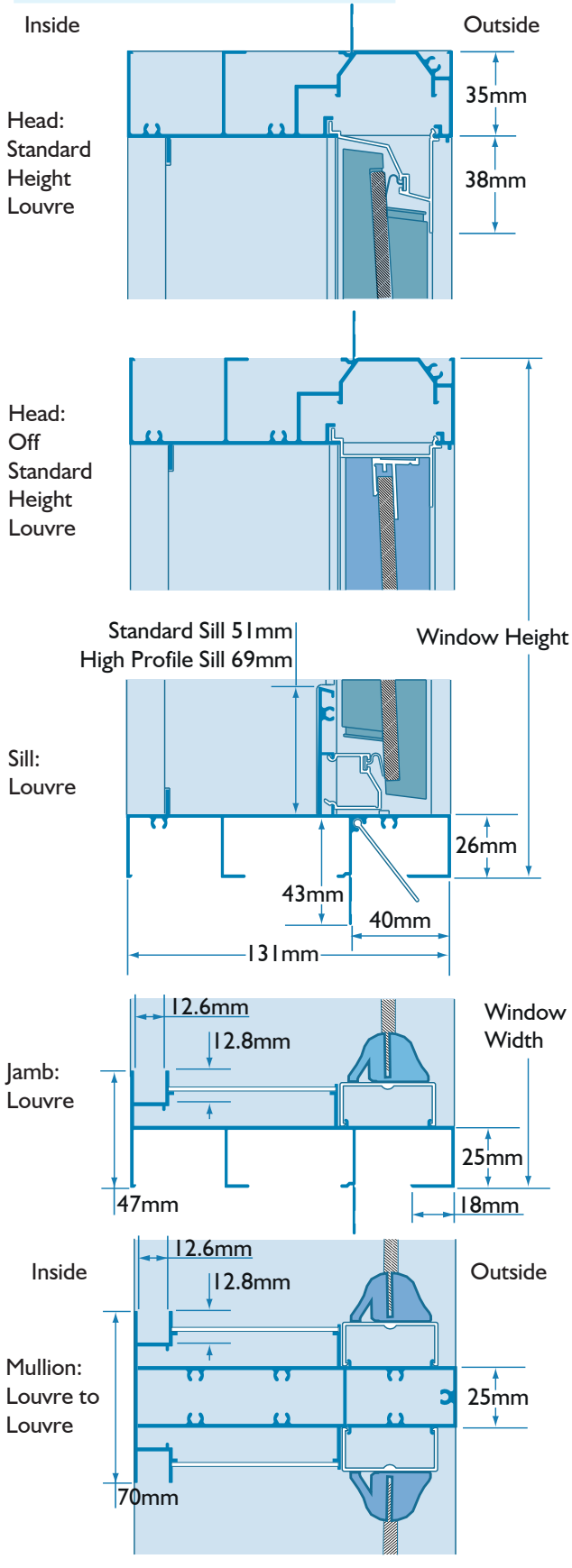
Innoscreen® Window System

Product		Description
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.

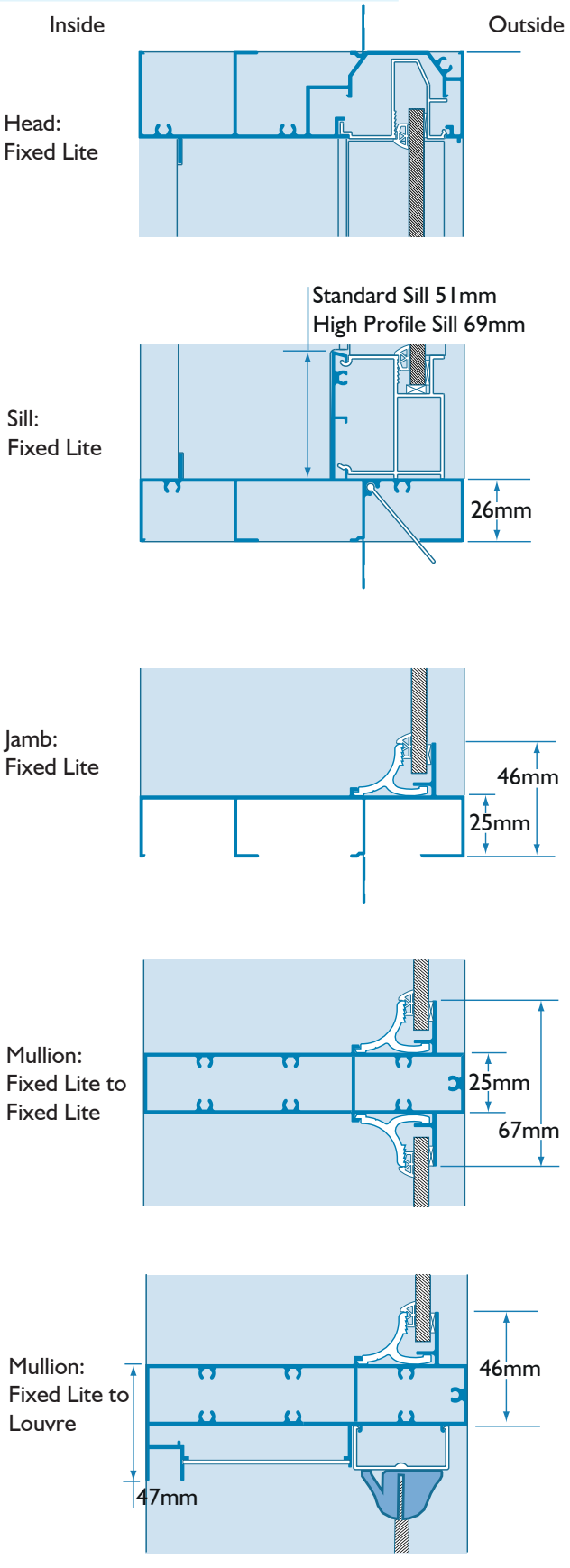
Innoscreen Window System Accessories

Product		Description
Innoscreen Jamb to Jamb Coupler	 2mm	Use to couple Innoscreen Window Systems together. (2mm extra width)
Innoscreen Head to Sill Coupler	 2mm	Use to couple Innoscreen Window Systems together. (2mm extra height)
Innoscreen Jamb and Sill Cover Plate	 2mm	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	 2mm	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



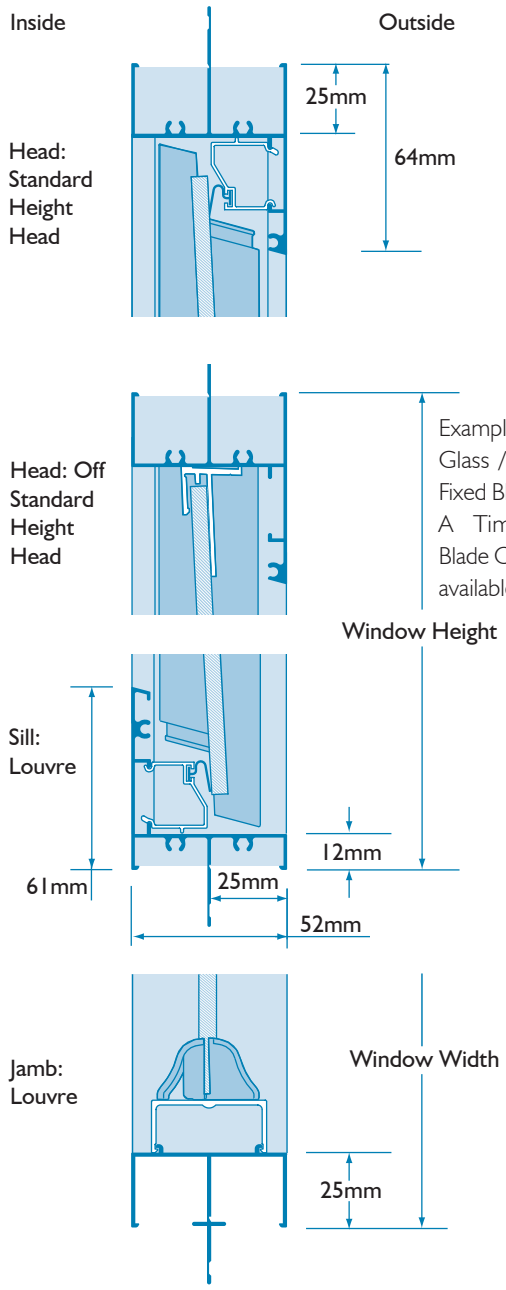
Innoscreen® Fixed Lite Window System



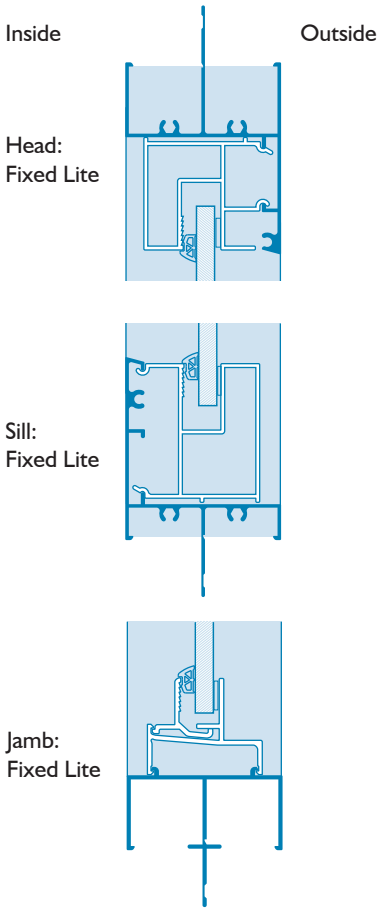
Note: High Profile Sill to be used where >300Pa Water Penetration Resistance is required. 102mm Louvres are not suitable for Innoscreen Window Systems using the High Profile Sill as the blades controlled by the bottom handle will only open to 28°.

SL2® Window System

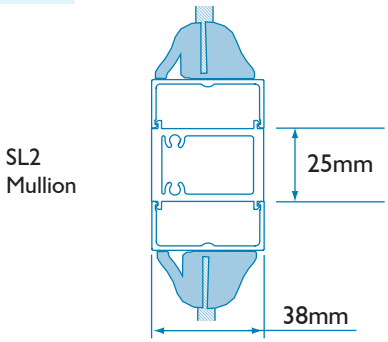
SL2 Louvre Window System



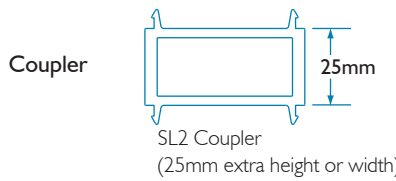
SL2 Fixed Light Window System



SL2 Mullion



SL2 Window System Accessories



Standard Heights

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

	Breezway Window Systems with 152mm Galleries		
	Easyscreen™ Window System	Innoscreen® Window System	SL2® Window System
No. of Blades	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

	Breezway Window Systems with 102mm Galleries		
	Easyscreen Window System	Innoscreen Window System	SL2 Window System
No. of Blades	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

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.

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.

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.

	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

- Non-standard frame heights ≤42mm greater than a standard frame height are not available.
- All other non-standard heights are available.

	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

- Non-standard frame heights ≤44mm greater than a standard frame height are available.
- All other non-standard heights are available.

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

- 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.

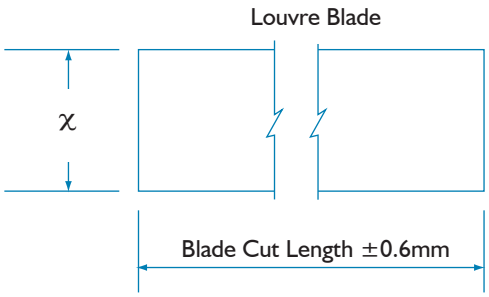
Window System Blade Lengths

Easyscreen Frame	
Glass & aluminium blade	Blade length = window width - 82mm
Glass & aluminium Stronghold blade	Blade length = window width - 78mm
Straight cut timber blade	Blade length = window width - 102mm

Innoscreen Frame	
Glass & aluminium blade	Blade length = window width - 102mm
Glass & aluminium Stronghold blade	Blade length = window width - 98mm
Straight cut timber blade	Blade length = window width - 122mm

SL2 Frame	
Glass & aluminium blade	Blade length = window width - 102mm
Glass & aluminium Stronghold blade	Blade length = window width - 98mm
Straight cut timber blade	Blade length = window width - 122mm

Extension Blade Dimensions



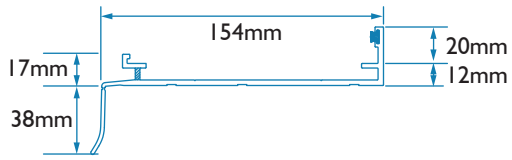
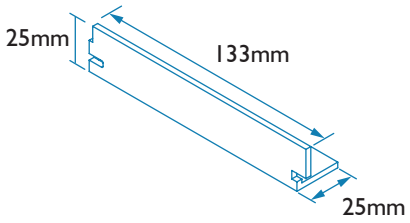
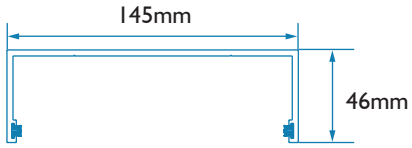
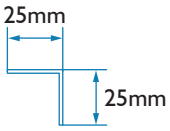
Easyscreen Frame	
Glass & Aluminium blades	x = Channel extension + 15mm
Timber blades	x = Channel extension + 19mm

Innoscreen Frame	
Glass & Aluminium blades	x = Channel extension + 13mm
Timber blades	x = Channel extension + 17mm

SL2 Frame	
Glass & Aluminium blades	x = Channel extension + 20mm
Timber blades	x = Channel extension + 24mm

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

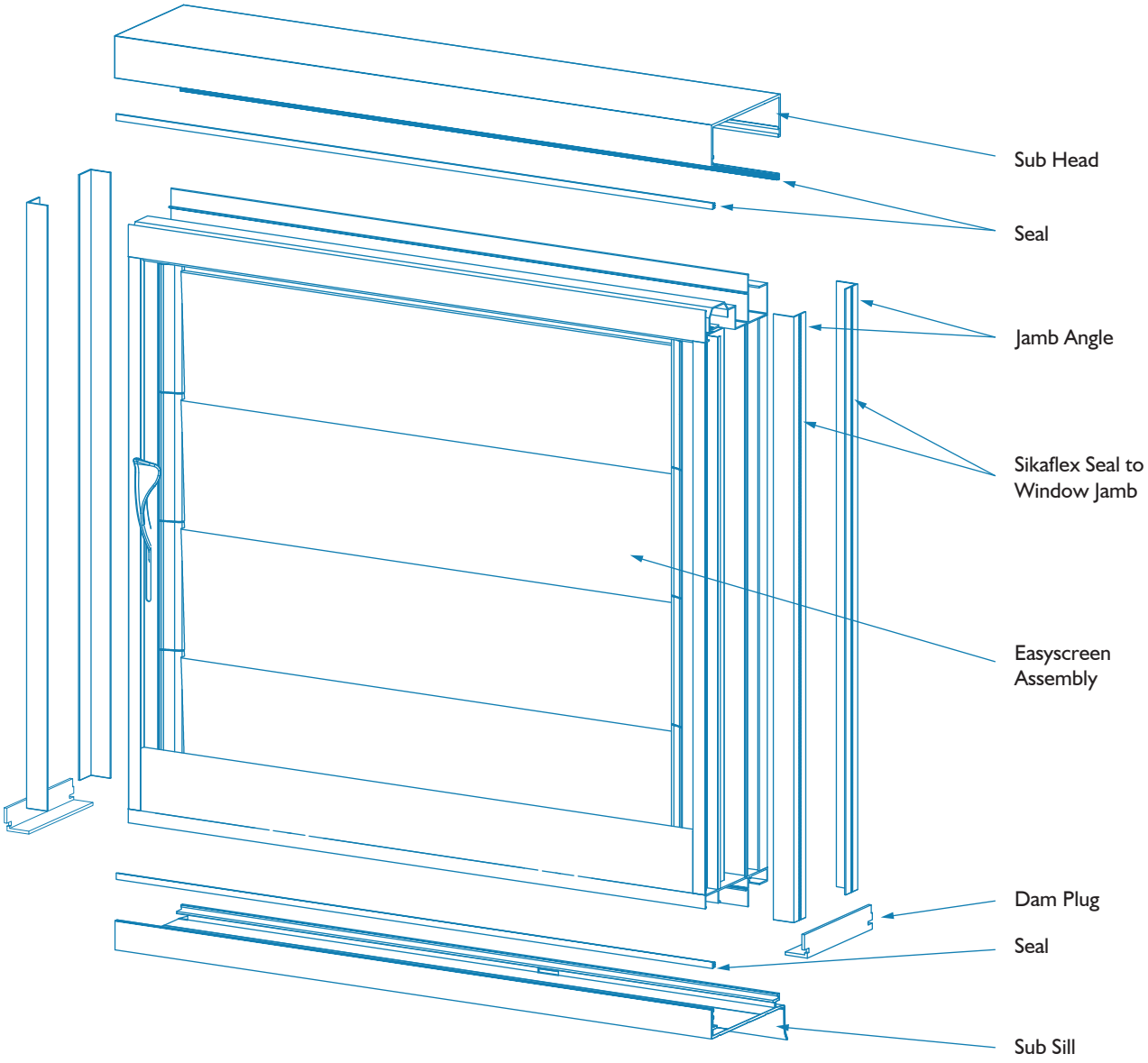
Height

For Window heights ≤ 791mm: Combined Window and Sub Framing height = Window height + approximately* 45mm
For Window heights ≥792mm: 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.


Sub Head
Seal
Jamb Angle
Sikaflex Seal to Window Jamb
Easyscreen Assembly
Dam Plug
Seal
Sub Sill

Breezway® Window System Checklist (Powerlouvre™ & Manual Version)

REQUIRED INFORMATION viewed from inside	OPTIONAL INFORMATION
■ Design Wind Pressure Rating	■ Reveal/Flashing Type & Size
■ Manual or Automated	■ Left or Right Handed
■ Frame Size	■ Restricted Opening
■ With or without the Stronghold® System	■ Variable Handle Position/Additional Handles
■ Gallery Clip Size	■ Security Bar System
■ Height & Width	■ Keylock
■ Number of Bays	■ Offset Mullions
■ Frame Colour	■ Couplers & Cover Plates
■ Gallery Colour	■ Bay Configuration
■ Clip & Handle Colour	■ Sub Framing
■ Handle Type[1] (if required)	
■ Blade Type[2]	

Notes:

1. For Altair Powerlouvre Windows handle specifications are not required.
2. Timber Blades are not available for use with the Stronghold System.

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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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 0.25 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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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.

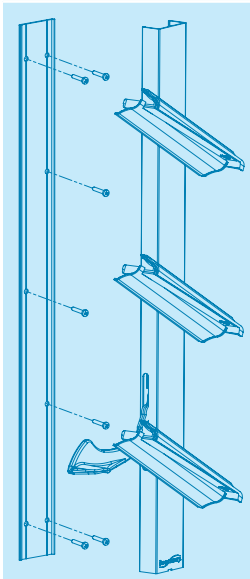
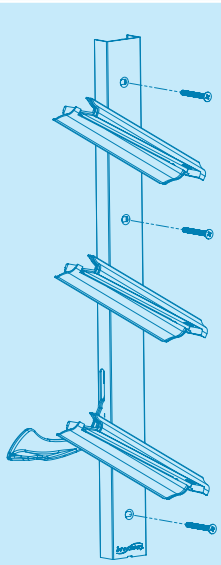
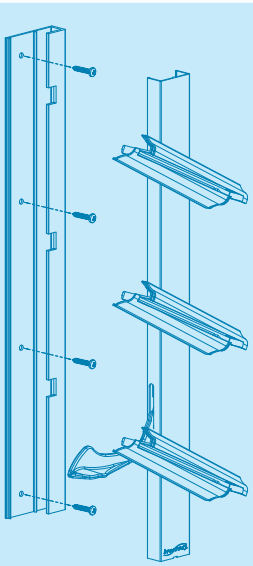
The louvre windows shall be Breezway® Altair® Powerlouvre™ Windows with the Stronghold® System

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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 0.25 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.

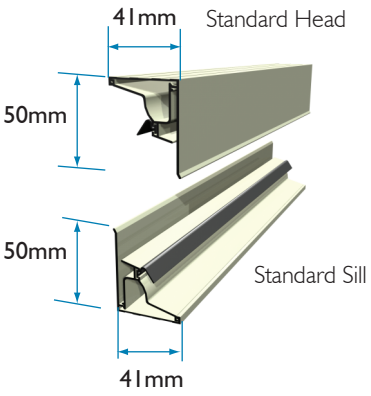
	Backing Strip	Screw Holes	Security Jamb	Proprietary Frame
				
Visible fixings	None	Visible fixings on louvre channel	None	Depends on the frame design - some have compatible snap-in points
Maximum warranted water pass pressure	450Pa	300Pa	450Pa	300Pa if galleries have screw holes - 450Pa if galleries 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

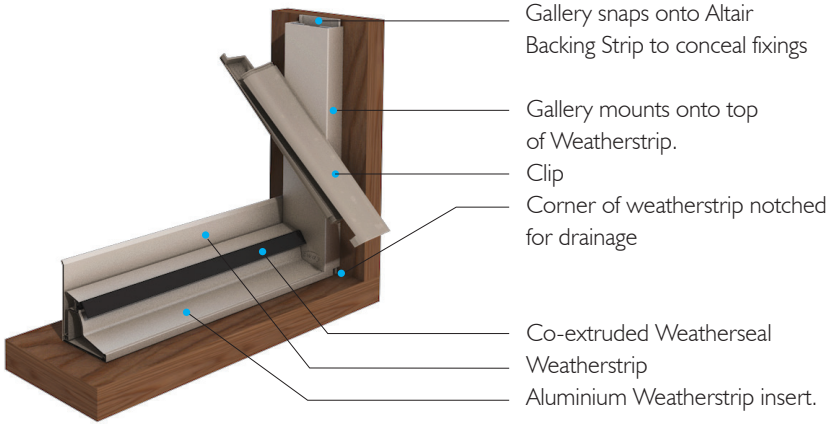
Altair Proprietary Frames

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.

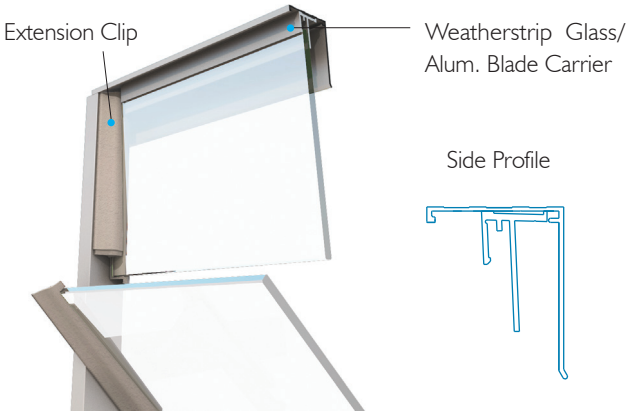
Fabricators	Altair Compatible Frame	Website address for latest frame information	Manufacturer Phone Numbers
Architectural Window Systems	Vantage LouvreMASTER	www.awsaustralia.com.au	1300 026 189
Capral Aluminium	Genesis and Commercial Suites	www.capral.com.au	1300 365 110

Weatherstrips and Backing Strips



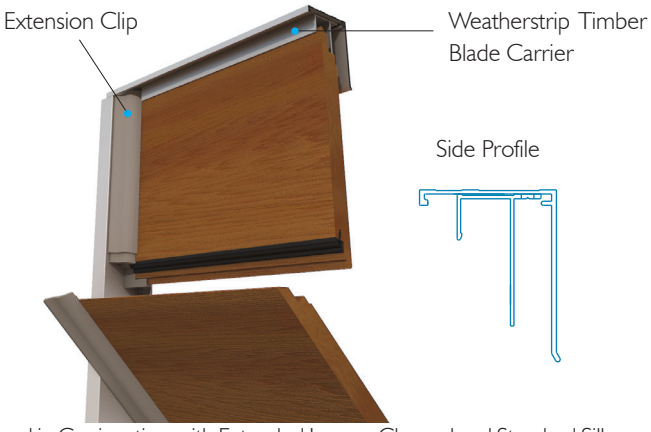


Standard Height



Used in Conjunction with Extended Louvre Channel and Standard Sill

Off Standard Height Head for Glass or Aluminium Blades



Used in Conjunction with Extended Louvre Channel and Standard Sill

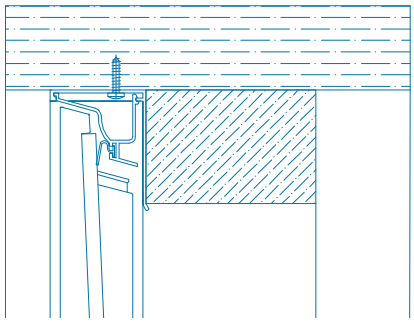
Off Standard Height Head for timber blades

- The same Weatherstrip is used on both the head and sill for standard glass, aluminium and timber 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.
- Altair Weatherstrip does not require notching to accommodate the louvre gallery.
- Weatherstrip, complete with seal, must be used in the head and sill to gain manufacturer's performance warranty.
- Weatherstrips to head and sill add 10mm to overall gallery height.

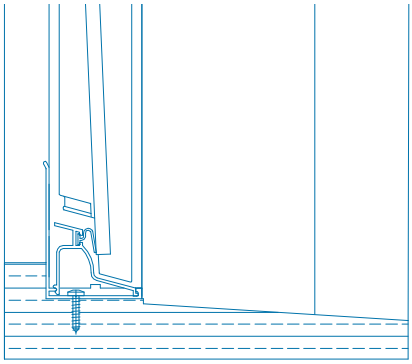
Example of Altair® Component System Fitted In A Timber Surround Frame

Inside Outside

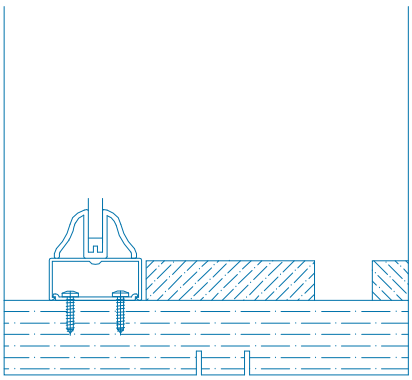
Head



Sill



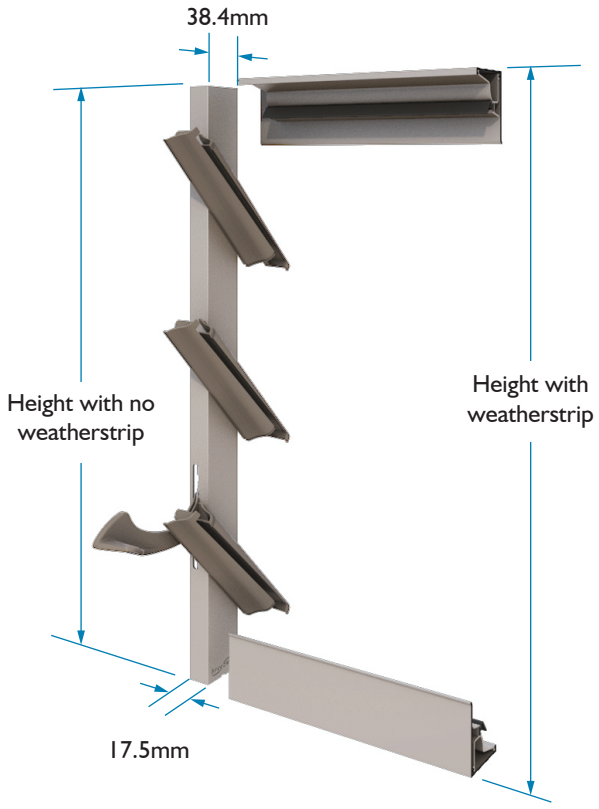
Jamb



Standard Heights - Altair® Component System

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

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



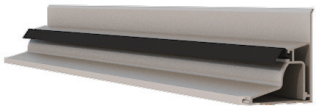
Altair® Powerlouvre™ Component System

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.

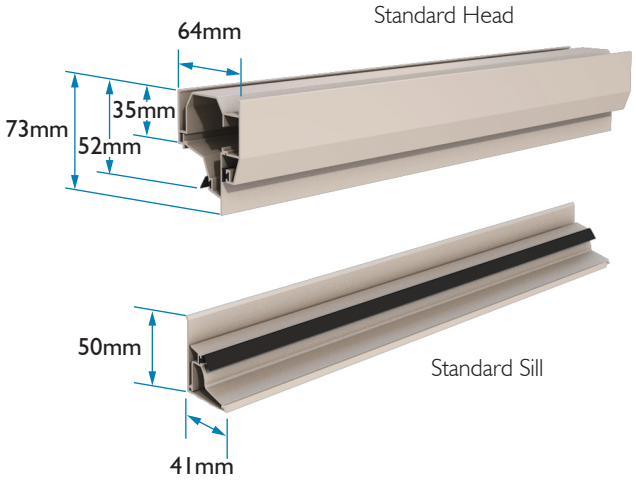
Please consult Breezway® for frame compatibility advice.

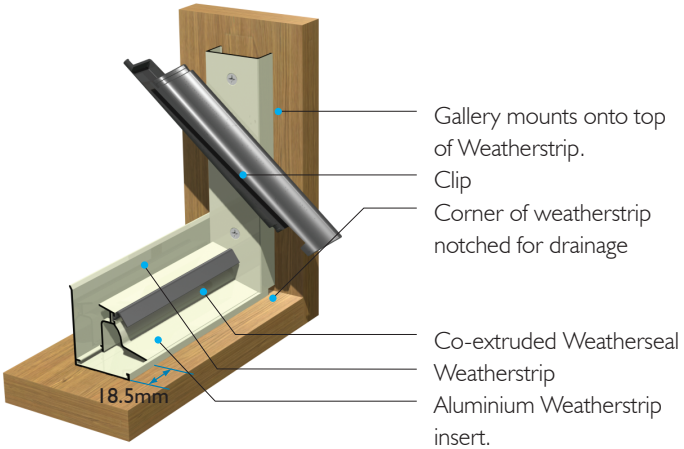


Galleries	Head	Sill
Available in 102mm and 152mm heights to suit 6mm thick glass, metal and rebated timber blades, or to suit 14mm thick straight cut timber blades.	Head Weatherstrip	Standard Sill Weatherstrip and Insert.

Altair Louvre Security Jambs 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.

Altair® Powerlouvre™ Standard Height Louvre Weatherstrip

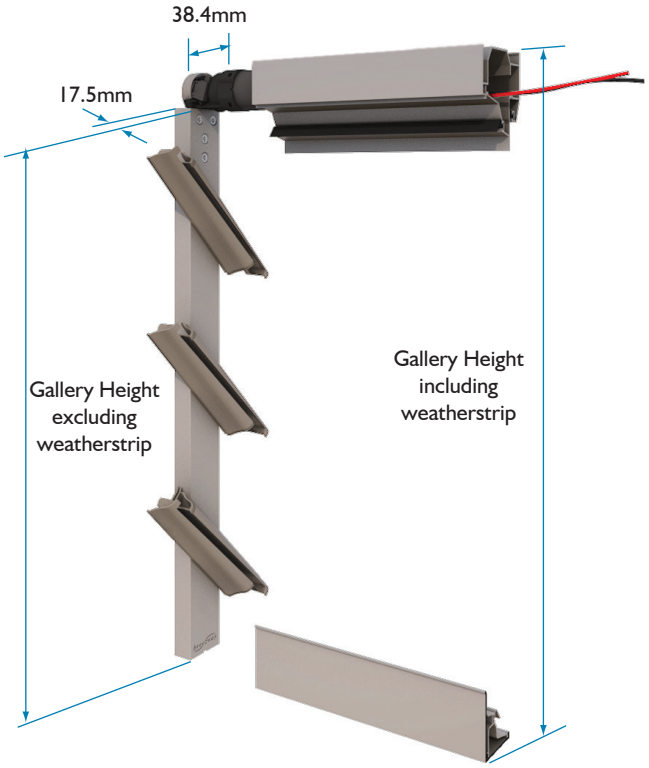




- Weatherstrip, complete with seal, must be used to gain manufacturer's performance warranty and to conceal the Powerlouvre motor.
- Weatherstrips to head and sill add 40mm to overall gallery height.

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



152mm and 102mm Powerlouvre Component System:

- Non-standard heights ≤42mm greater than a standard height are not available for 152mm Powerlouvre Component System.
- Non-standard heights ≤44mm greater than a standard height are not available for 102mm Powerlouvre Component System.
- All other non-standard heights are available.

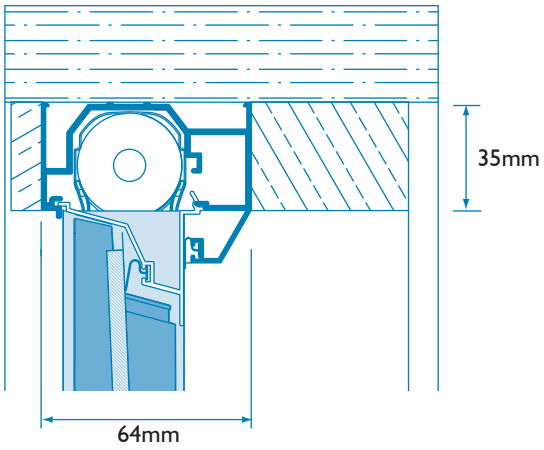
Minimum Bay Width	
Powerlouvre Window Type	Minimum Bay Width (mm)
2-9 blade high	400
10-18 blade high	500

Example of Altair® Powerlouvre™ Component System Fitted In A Timber Surround Frame

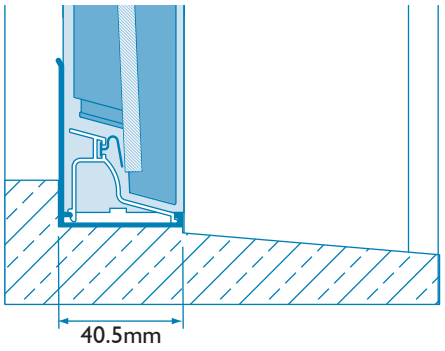
Inside

Outside

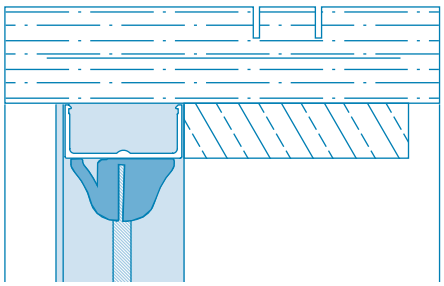
Head



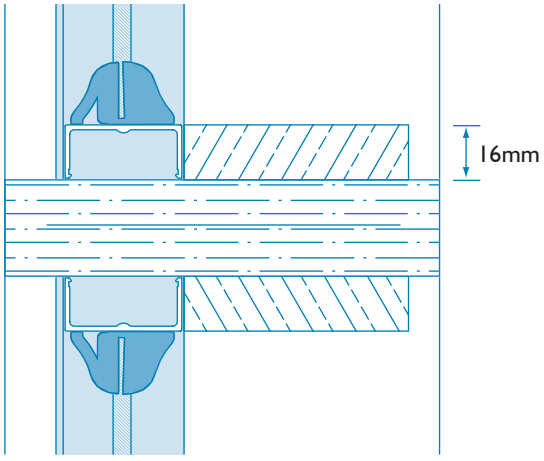
Sill



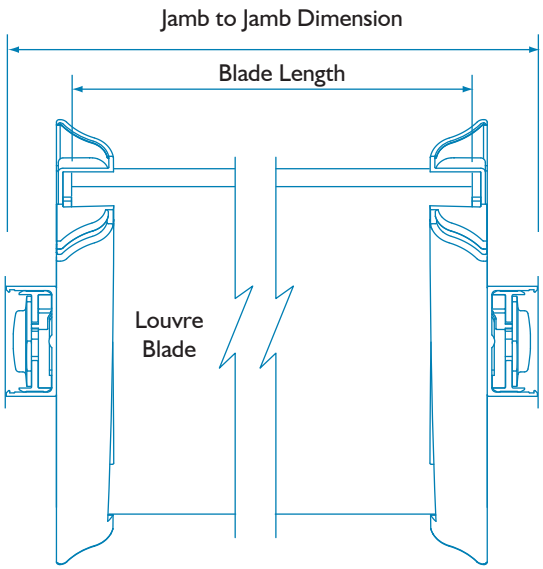
Jamb



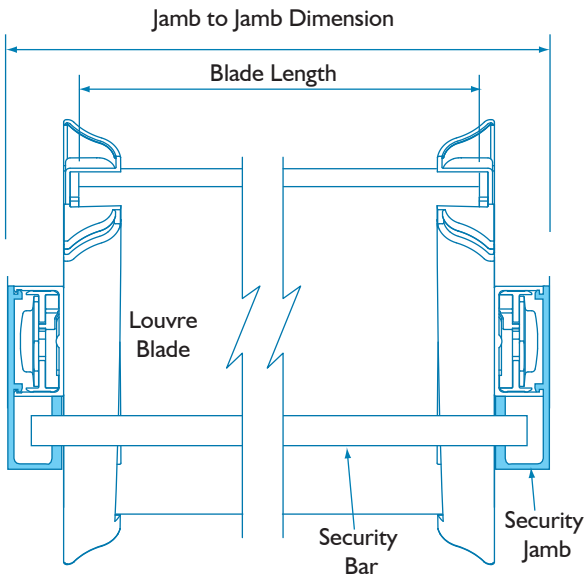
Mullion



Altair® Blade Formulas



Blade Cut Length Standard Jambs



Blade Cut Length Breezway® Security Jambs

Glass & aluminium blades:
Blade Length = jamb to jamb – 52mm

Straight Cut Timber blades:
Blade Length = jamb to jamb – 72mm

Glass & aluminium Stronghold blades:
Blade Length = jamb to jamb – 48mm

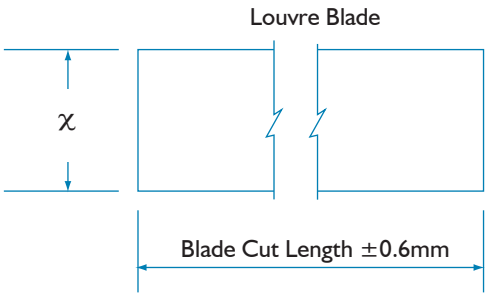
Glass & aluminium blades:
Blade Length = jamb to jamb – 56mm

Straight Cut Timber blades:
Blade Length = jamb to jamb – 76mm

Glass & aluminium Stronghold blades:
Blade Length = jamb to jamb – 52mm

Component Form — Manually Operated	
Glass & Aluminium blades	x = Channel extension +20mm
Timber blades	x = Channel extension + 24mm

Component Form — Powerlouvre™ Window	
Glass & Aluminium blades	x = Channel extension +12mm
Timber blades	x = Channel extension + 19mm



Extension Blade Dimensions

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

Note: 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
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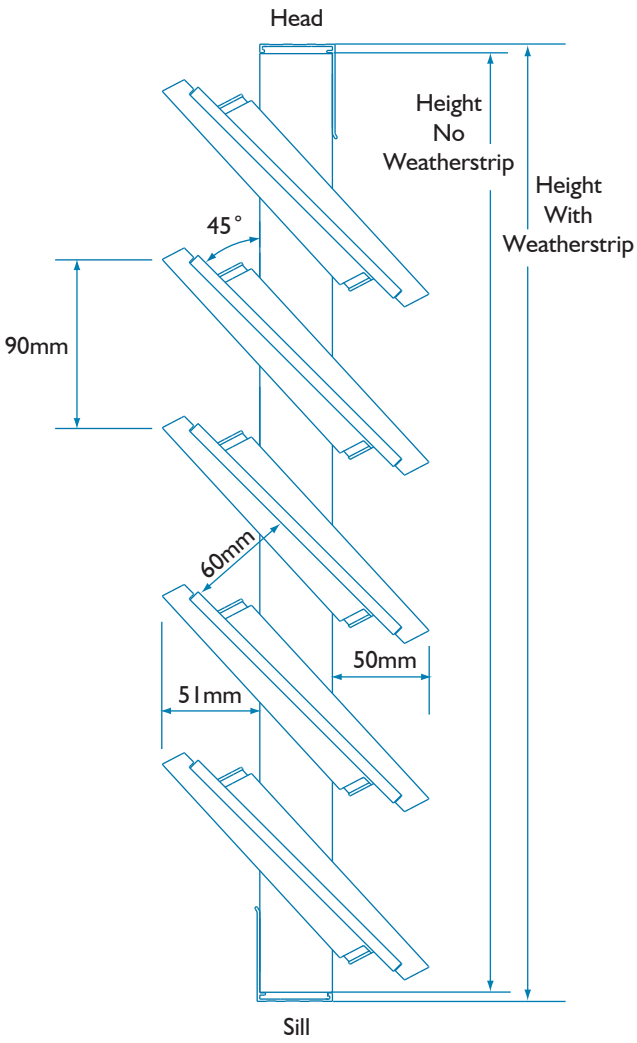
29	2650	2660
30	2740	2750
31	2830	2840
32	2920	2930
33	3010	3020



152mm Fixed Louvre

Note:

- 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.

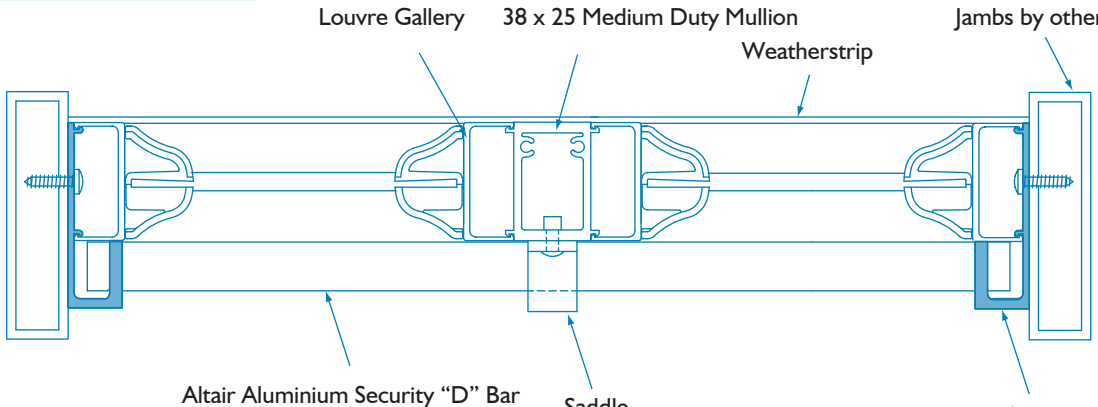
Applications for Fixed Vent Louvres

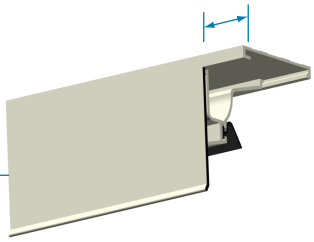
Use fixed vent louvres where permanent ventilation, light, privacy and a degree of weatherproofing is required.Some typical applications include:

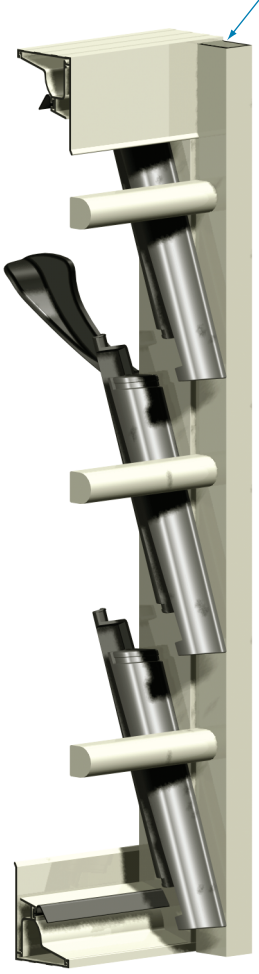
- Vented roofs
- Laundries (industrial, domestic)
- Bathrooms
- Public Amenities
- Housing for air conditioning units

Altair® Louvre Security Jamb

152mm Louvre Galleries Only

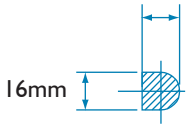


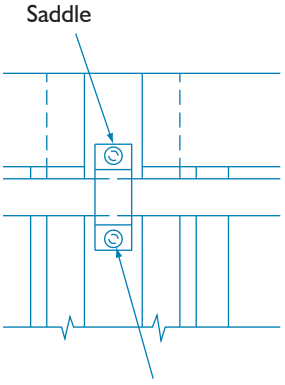




Head Weatherstrip Notching Detail

Altair Aluminium Security "D" Bar





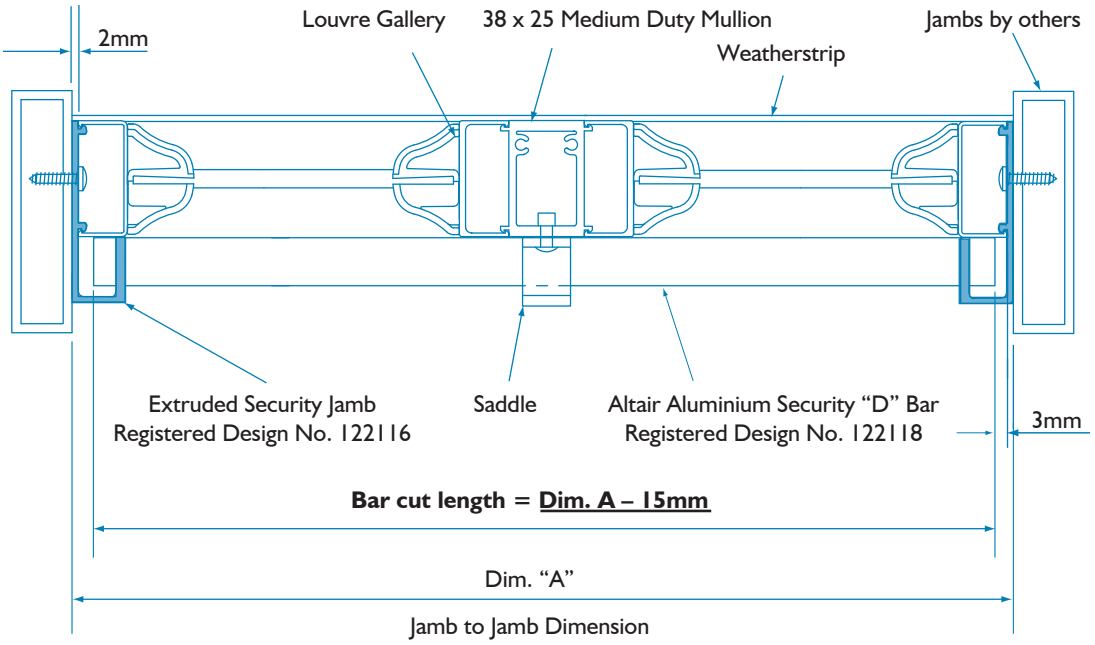
Notes:

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

152mm Blades will fully open to 85°

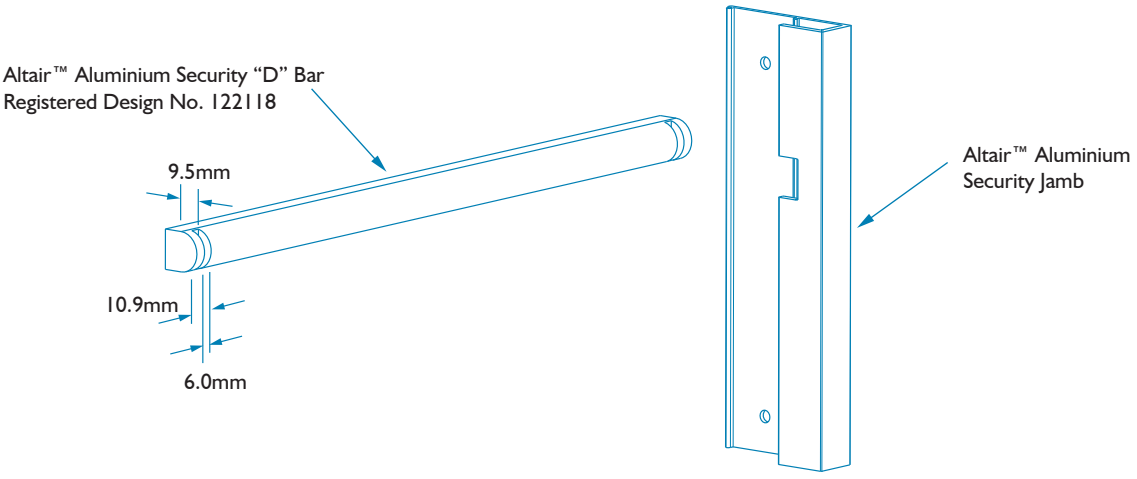
Sill

Security Bar Cut Lengths For Security Jambs



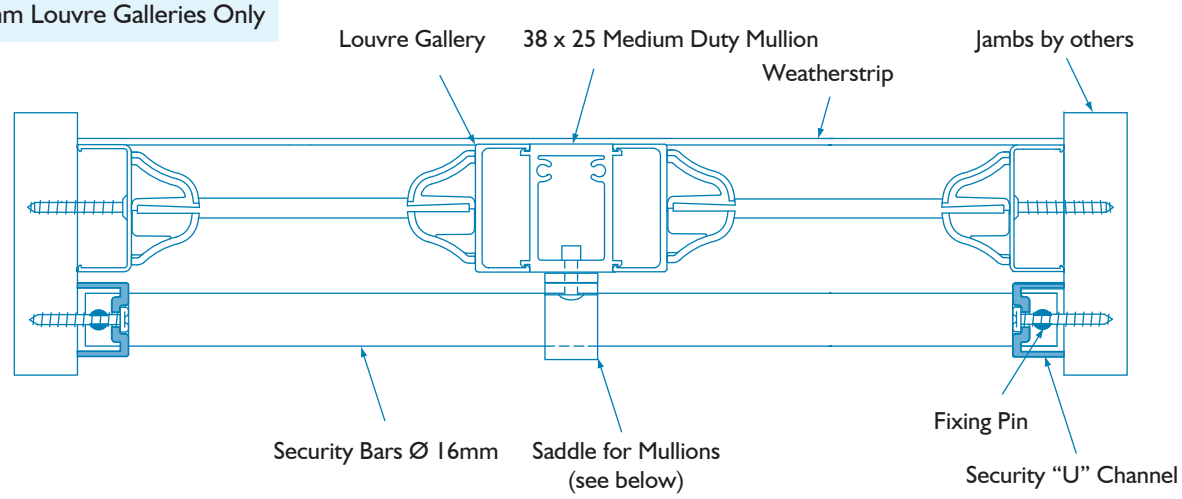
- Maximum permissible taper in jamb section is 4.0mm
- Tolerance on bar cut length to be ±1.0mm
- Maximum bar length unsupported is 900mm

Notching Detail For Security "D" Bar

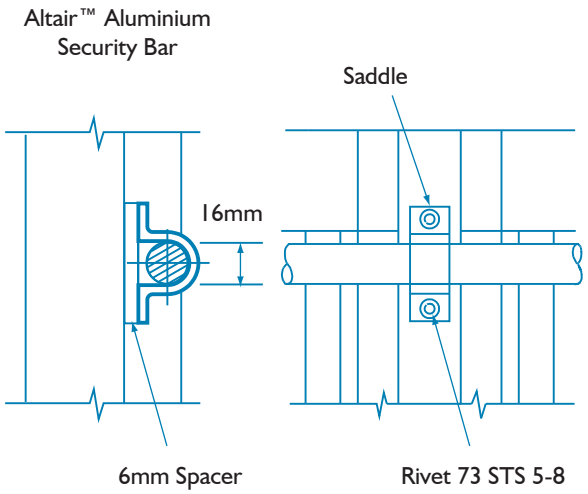


Aftermarket Security "U" Channels

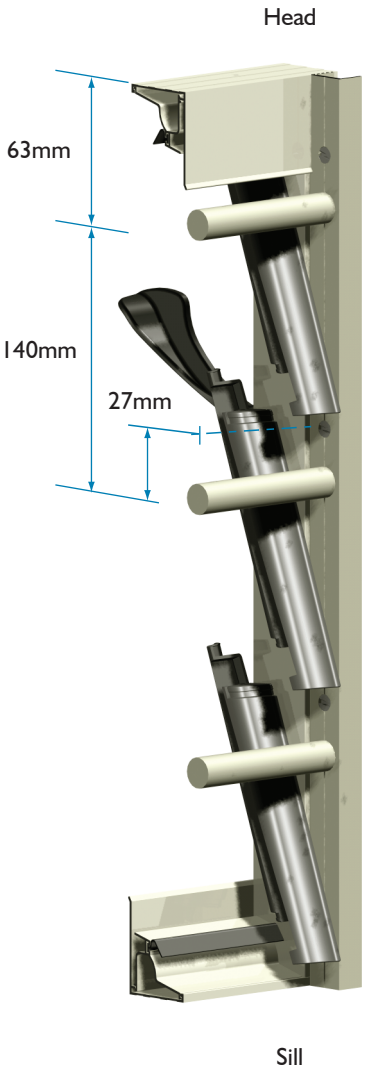
152mm Louvre Galleries Only



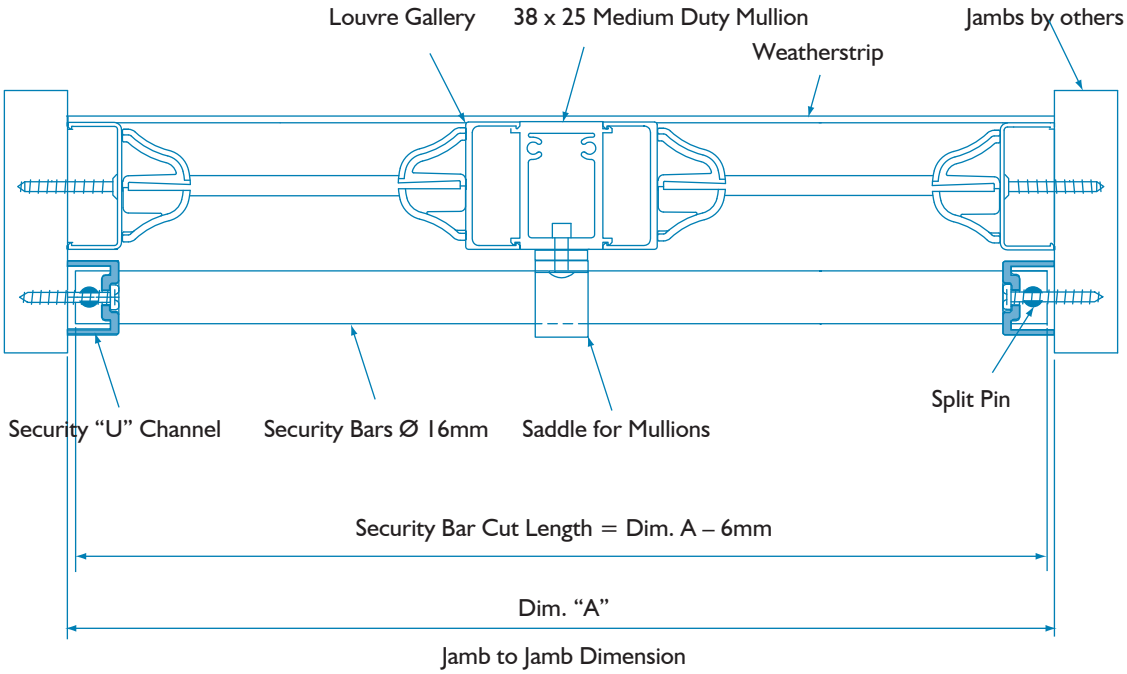
- One way security screw supplied with Aftermarket Security U-Channel



6mm Spacers are not supplied by Breezway.

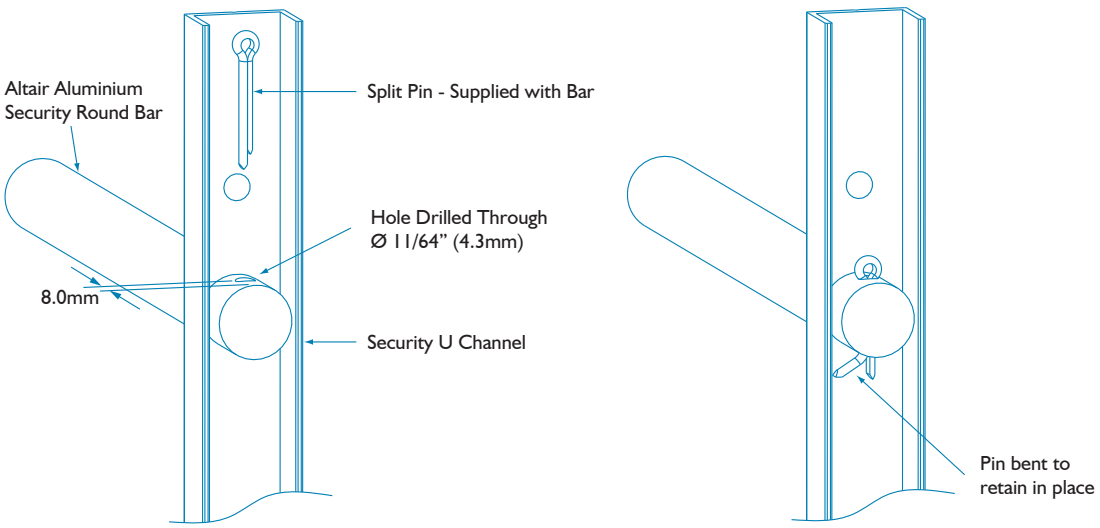


Security Bar Cut Lengths For "U" Channel



- Maximum permissable taper in jamb section is 4.0mm
- Tolerance on bar cut length to be ±1.0mm
- Maximum bar length unsupported is 900mm

Split Pin Detail For Security Round Bar



Altair® Louvres For Other Frames Checklist

REQUIRED INFORMATION viewed from inside	OPTIONAL INFORMATION
■ Gallery Clip Size	■ Left or Right Handed
■ Gallery Height	■ Restricted Opening
■ Gallery Colours	■ Handle Type
■ Manual or Powerlouvre™ Galleries	■ Variable Handle Position/Additional Handles
■ With or without the Stronghold® System	■ Screw Holes (Ref frame, mullion, security type)
■ Clips & Handle Colour	■ Security Bar System
■ Blade Length & Type	■ Keylock
■ Weather strip for head & sill	

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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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 0.25 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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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

Unique features:

- Patented drainage channels for superior water performance.
- Patented '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 0.25 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.

Dualair Secondary Glazed Altair Louvre Component System

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

Compatible Frames

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 2,658mm (h) x 1,041mm (w).
(Water Penetration Resistance of 620Pa is also available as narrower window widths.)

Maximum Cooling Natural Ventilation

With blades the 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

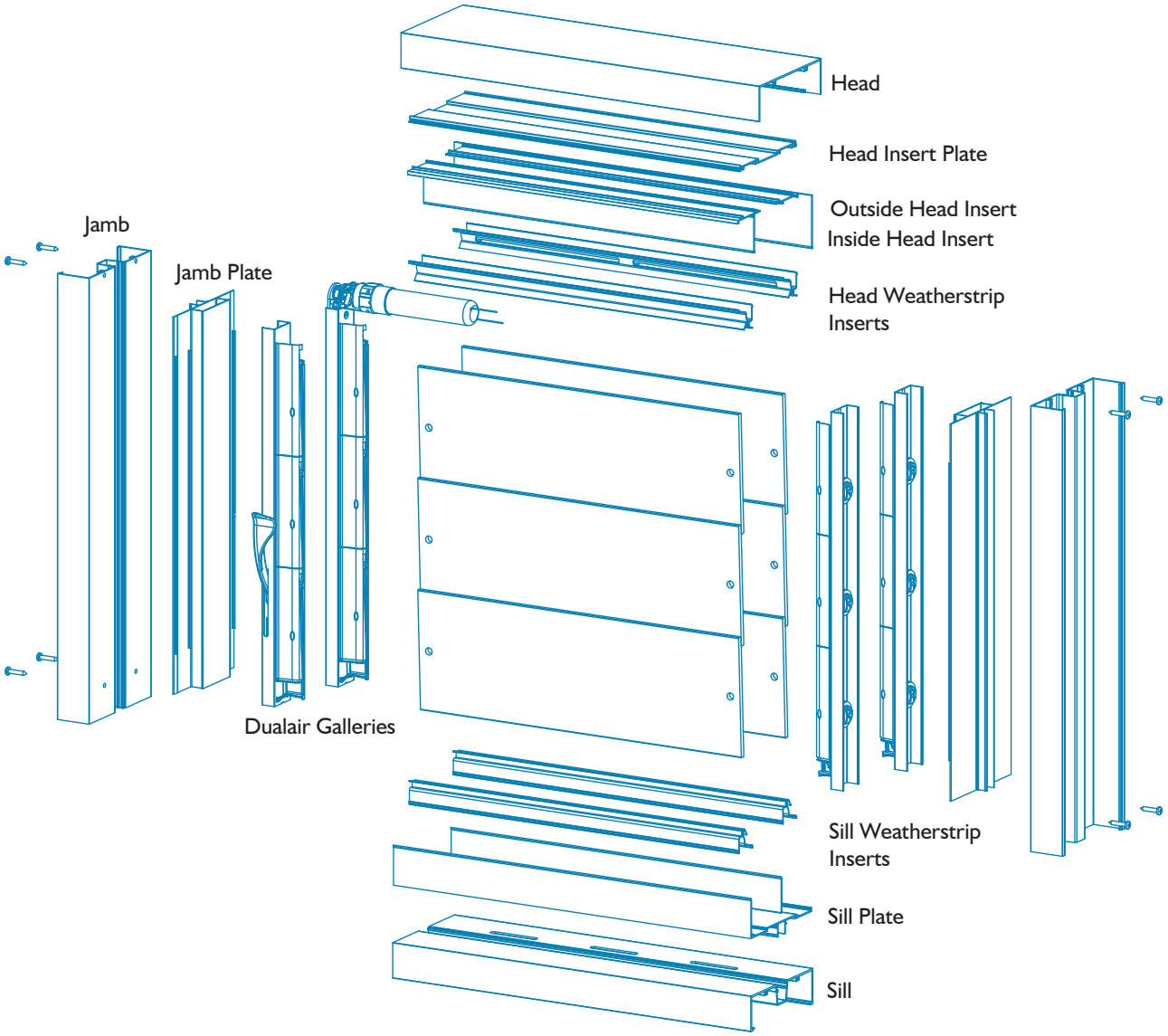
The Dualair System has been customised for the Alspec McArthur EVO 150mm Centre Pocket Framing and the Alspec Hunter EVO 150mm Acoustic Framing. When assembling these framing systems for use with the Dualair System, some customised processing and assembly is required, so clear, early communication with the fabricator is recommended.

To create space for the Powerlouvre Motors to be concealed within the head of the frame, the Alspec McArthur 150mm Plain Frame extrusion (AS74) is used regardless of whether the jambs, mullions, sills or transoms are from the McArhtur EVO 150mm Centre Pocket range or the Hunter EVO 150mm Acoustic range.

More information on the framing systems that are compatible with the Dualair System is available from the Alspec website:

www.alspec.com.au/macarthur-150mm-centre-pocket-framing

www.alspec.com.au/hunter-evo-150mm-acoustic-framing

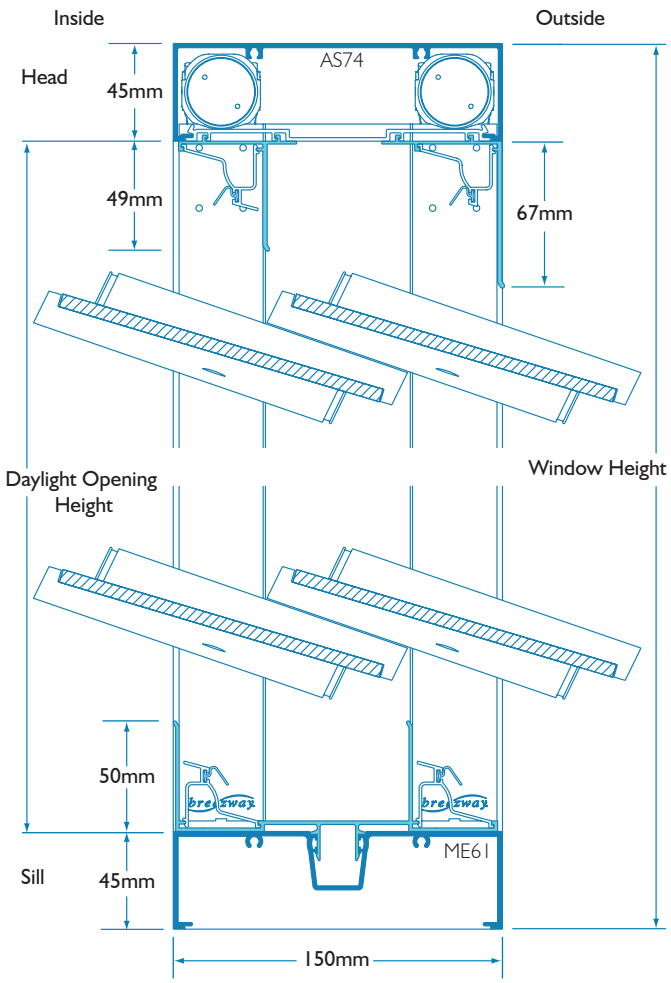


Dualair System Configurations

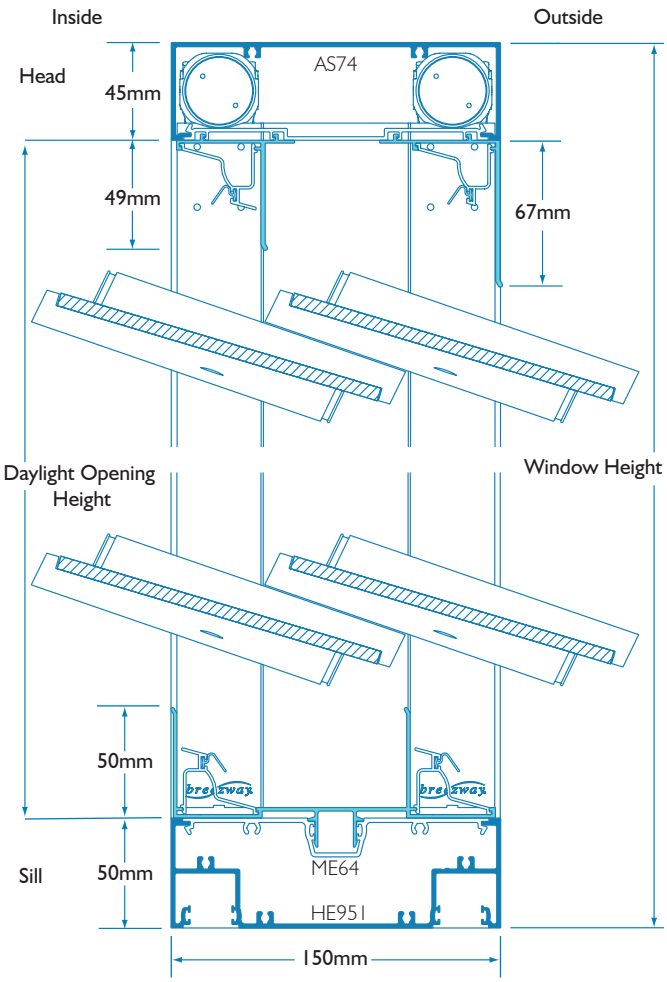
Product		Description
Dualair Louvre System		Two Altair Louvre Galleries in a secondary glazing configuration within a 150mm commercial framing system. The outer Altair Louvre is a Powerlouvre Gallery, the inner Altair Louvre can be either a Powerlouvre Gallery or manually operated.
Dualair Louvre System over a fixed lite		Using the transoms of the commercial framing, a Dualair System over a fixed lite within a single bay is possible within the McArthur EVO 150mm Centre Pocket Frame.
Dualair Louvre System with external aluminium blades		Aluminium blades or printed glass blades to the outside deliver shading and privacy without the need for internal blinds or curtains.

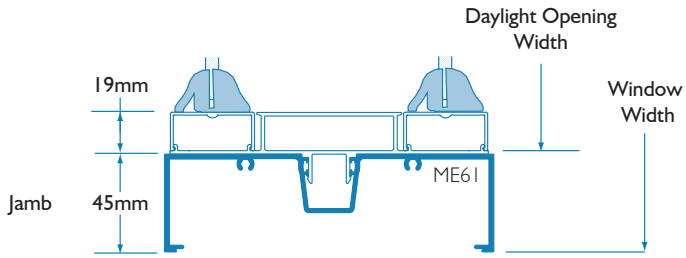
The Dualair System - Louvres only

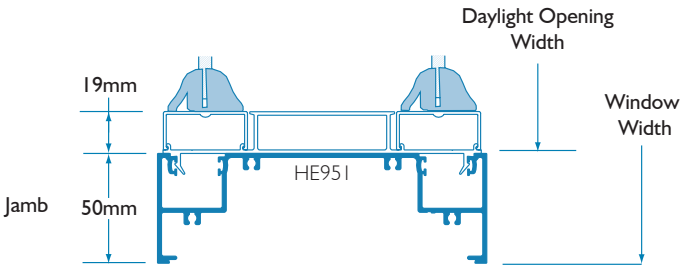
Alspec McArthur EVO 150mm Centre Pocket



Alspec Hunter EVO 150mm Acoustic



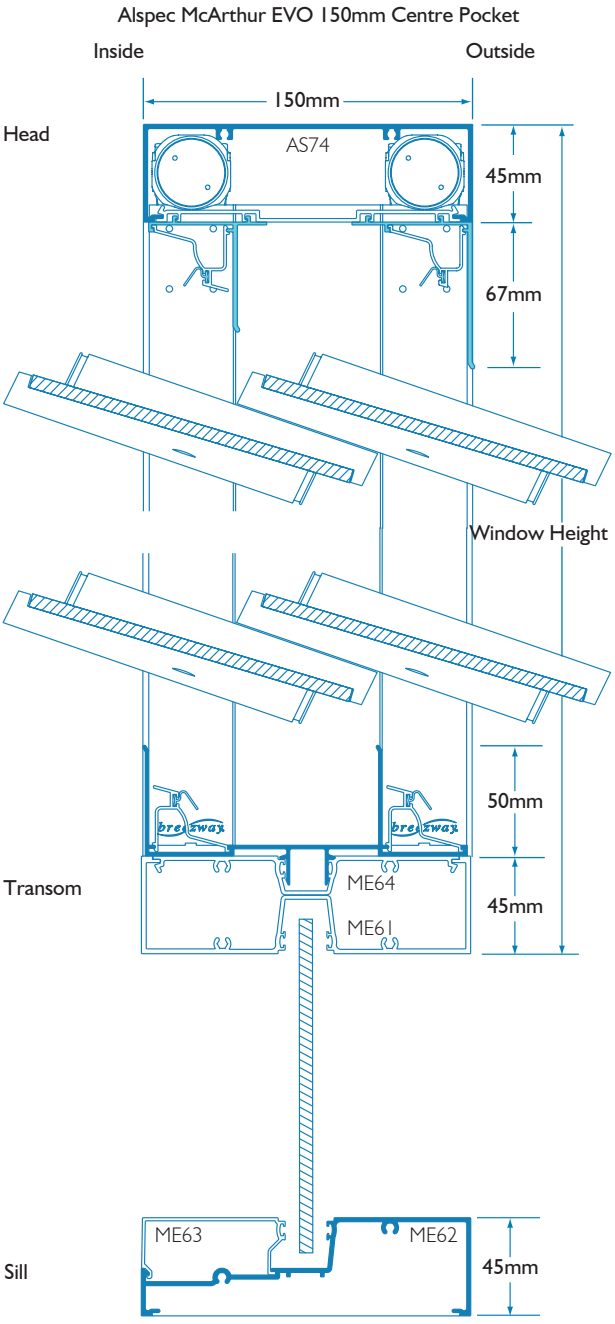




Note: Dualair Inside Jamb Plates are compatible with all Alspec McArthur EVO 150mm Centre Pocket jambs and mullions. Dualair Outside Jamb Plates are compatible with all Alspec Hunter EVO 150mm Acoustic jambs and mullions.

Note: The Alspec McArthur 150mm Plain Frame extrusion (AS74) is used as the head of the frame regardless of whether the jambs, mullions, sills or transoms are from the McArthtur EVO 150mm Centre Pocket range or the Hunter EVO 150mm Acoustic range.

The Dualair System - Louvre over fixed lite



Note: Alspec McArthur EVO 150mm Centre Pocket Frame only

Standard Heights - Dualair System

Heights for Dualair System with 152mm Blade			
Head	Alspec McArthur EVO	Alspec McArthur EVO	-
Sill / Transom	Alspec McArthur EVO	Alspec Hunter EVO Acoustic	-
No. of Blades	Window Height (mm)	Window Height (mm)	Daylight Opening Height (mm)
2	418	423	328
3	558	563	468
4	698	703	608
5	838	843	748
6	978	983	888
7	1118	1123	1028
8	1258	1263	1168
9	1398	1403	1308
10	1538	1543	1448
11	1678	1683	1588
12	1818	1823	1728
13	1958	1963	1868
14	2098	2103	2008
15	2238	2243	2148
16	2378	2383	2288
17	2518	2523	2428
18	2658	2663	2568

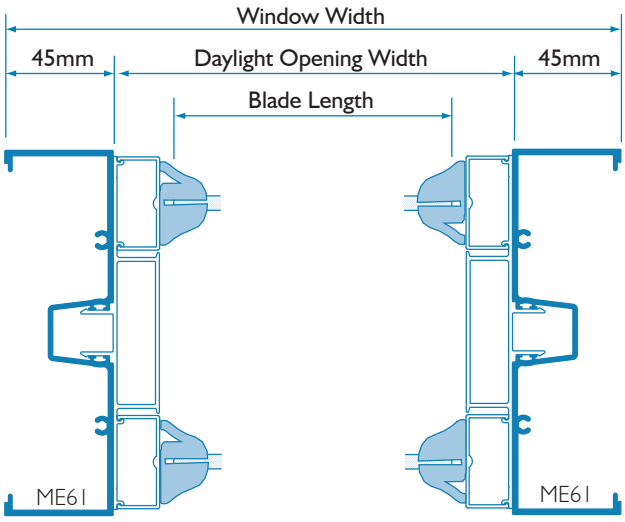
Note:

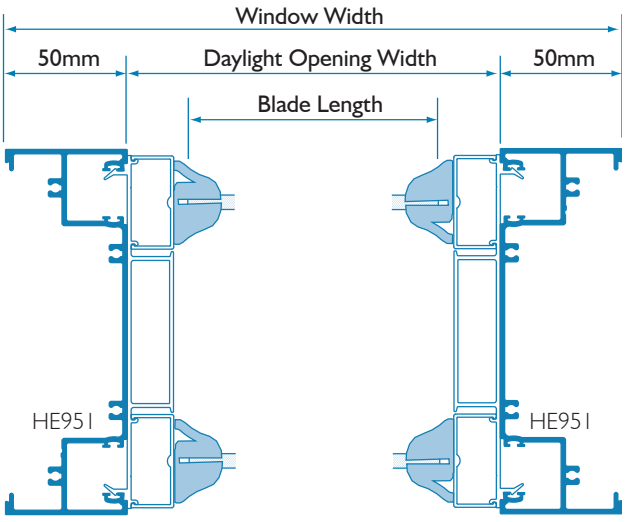
- Off-standard heights are not available
- 102mm blade height is not available

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 Alspec McArthur EVO Jambs

Glass & aluminium blades:
Blade Length = daylight opening width – 55mm

Blade Length = window width – 145mm

Glass & aluminium Stronghold blades:
Blade Length = daylight opening width – 51mm

Blade Length = window width – 141mm

Blade Cut Length Alspec Hunter EVO Jambs

Glass & aluminium blades:
Blade Length = daylight opening width – 55mm

Blade Length = window width – 155mm

Glass & aluminium Stronghold blades:
Blade Length = daylight opening width – 51mm

Blade Length = window width – 151mm

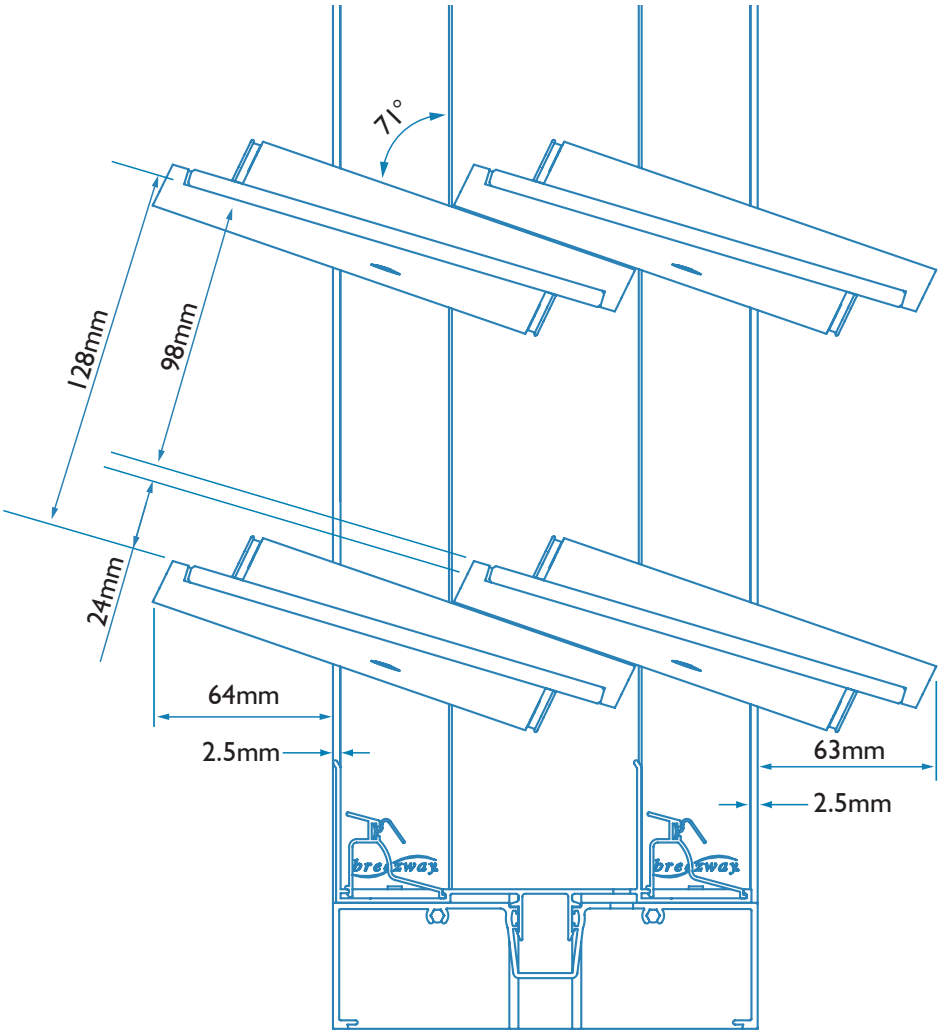
For allowable length of blades refer to AS1288 and Breezway Louvre Windows's PRODUCT PERFORMANCE WARRANTY.

Note: 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 height expressed as blade quantity	■ Handle side
■ Window width, excluding Alspec Jambs.	■ Keylock
■ Jamb plate to suit McArthur EVO 150mm Frame or Hunter EVO Acoustic 150mm Frame	■ Restricted openings
■ 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)	

Note:

- 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 Breezway® Altair® Dualair® Secondary Glazed Louvre Windows

Unique features:

- Altair Louvres in a secondary glazing configuration within 150mm commercial glazing.
- Minimum Rw rating of 35 dB.
- Maximum U-value of 3.8 W/m^2.K.
- Pressure equalising design and patented drainage channels for superior water performance.
- Patented '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 the Alspec McArthur EVO 150mm Centre Pocket frame and the Alspec Hunter EVO Acoustic 150mm frame.

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