

2. | Fixed skylights, roof hatches, ventilation vents

The mcr ULTRA THERM family, which includes fixed skylights, roof hatches and ventilation vents, supplements the natural smoke exhaust products range of Mercor Light&Vent sp. z o.o. Depending on the type of unit, they can serve the function of lighting, ventilation or roof access.

Parameters		APF fixed skylights	Fixed skylights	Roof hatches	Ventilation vents
					
Product classification	Declaration of Performance (according to EN 1873)	<ul style="list-style-type: none"> » Fire performance of available glazings: <ul style="list-style-type: none"> - B_{ROOF}(t1) - B-s1-d0 - B-s2-d0 - E / NPD » Fire performance of weakest element: <ul style="list-style-type: none"> - E / NPD » Resistance to external fire: <ul style="list-style-type: none"> - B_{ROOF}(t1) - F_{ROOF} » Heat transfer coefficient for the whole unit $1.2 \text{ W}/(\text{m}^2\text{K}) \leq U \leq 3.8 \text{ W}/(\text{m}^2\text{K})$ (*), depending on: type of glazing, device type, device dimensions, insulation thickness, and the base and its height » Direct sound insulation (****): <ul style="list-style-type: none"> - Rw = 20 dB for PCA16 multi-chamber polycarbonate panel - Rw = 21 dB for double multi-chamber polycarbonate panel PCA10 + PCA16 - Rw = 25 dB for PCA25 multi-chamber polycarbonate panel + PMMA 1-layer acrylic dome - Rw = 25 dB for ALU sandwich panel 			
Control	electric 230 V~ (ventilation)	-	-	-	●
	mechanical (gas springs)	-	-	●	-
Glazing	multi-chamber polycarbonate panel	●	●	●	●
	acrylic dome (*)	-	●	●	●
	solid polycarbonate dome (*)	-	●	●	●
	ALU (**) sandwich panel	-	-	●	●
	double multi-chamber polycarbonate panel	●	●	●	●
	classification B _{ROOF} (t1) (***)	●	●	-	●
	1-layer acrylic dome and multi-chamber polycarbonate panel (*)	-	●	●	●
	1-layer solid polycarbonate dome and multi-chamber polycarbonate panel (*)	-	●	●	●
	2-layer acrylic dome and multi-chamber polycarbonate panel (*)	-	●	●	●
	2-layer solid polycarbonate dome and multi-chamber polycarbonate panel (*)	-	●	●	●

(*) Applies to selected vent dimensions

(**) ALU sandwich panel: aluminium – thermal insulation – aluminium

(***) Applies to vents with single and double multi-chamber polycarbonate panel

(****) Data refer to complete units with PVC base

2.1 | mcr ULTRA THERM APF fixed skylights with straight steel base – type C, E

2.1.1 | Technical description of standard

- » fixed skylights according to EN 1873,
- » fixed skylights type C (square) and E (rectangular) intended for flat and pitched roofs covered with roofing paper or PVC membrane,
- » **dimensional range of fixed skylights:**
 - fixed skylights type C (square): 800 x 800 mm ÷ 1900 x 1900 mm,
 - fixed skylights type E (rectangular): 800 x 1200 mm ÷ 1900 x 3000 mm,
- » straight base made of 1.25 mm thick galvanized steel sheet with a total height with frame of 300 mm or 500 mm,
- » bottom part of the base fitted with a 50 mm wide circumferential flange for mounting the vent on the roof structure,
- » white PVC frame in the upper part of the base ensures tightness, thermal insulation and drainage of condensation outside,
- » base adapted for the installation of thermal insulation with a thickness of 50 mm and a thermal conductivity coefficient not exceeding $\lambda=0.039$ W/mK,
- » **leaf glazing:** multi-chamber polycarbonate panel, glazing with $B_{\text{ROOF}}(t)$ classification (see chapter 4 – page 52 for details),
- » aluminium pressing frame.

2.1.2 | Design of APF fixed skylight



Fig. 16 Design of mcr ULTRA THERM APF E fixed skylight with straight steel base

2.1.3 | APF fixed skylight options

- » skylight elements painted in any RAL color (not applicable to frame made of white PVC),
- » base made of aluminium sheet,
- » custom steel and aluminium base height with frame in the range 250 ÷ 700 mm,
- » change of base sheet thickness,
- » use of additional safety elements in the form of safety net,
- » skylight with resistance to soft body impact with energy of 1200 J (SB 1200).

2.1.4 | Technical drawings of APF fixed skylight

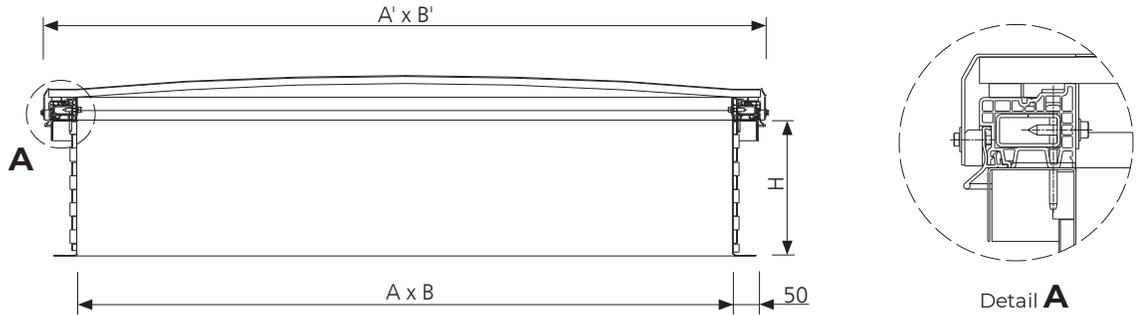


Fig. 17 Section **B-B** through mcr ULTRA THERM APF E fixed skylight, dimensions in mm

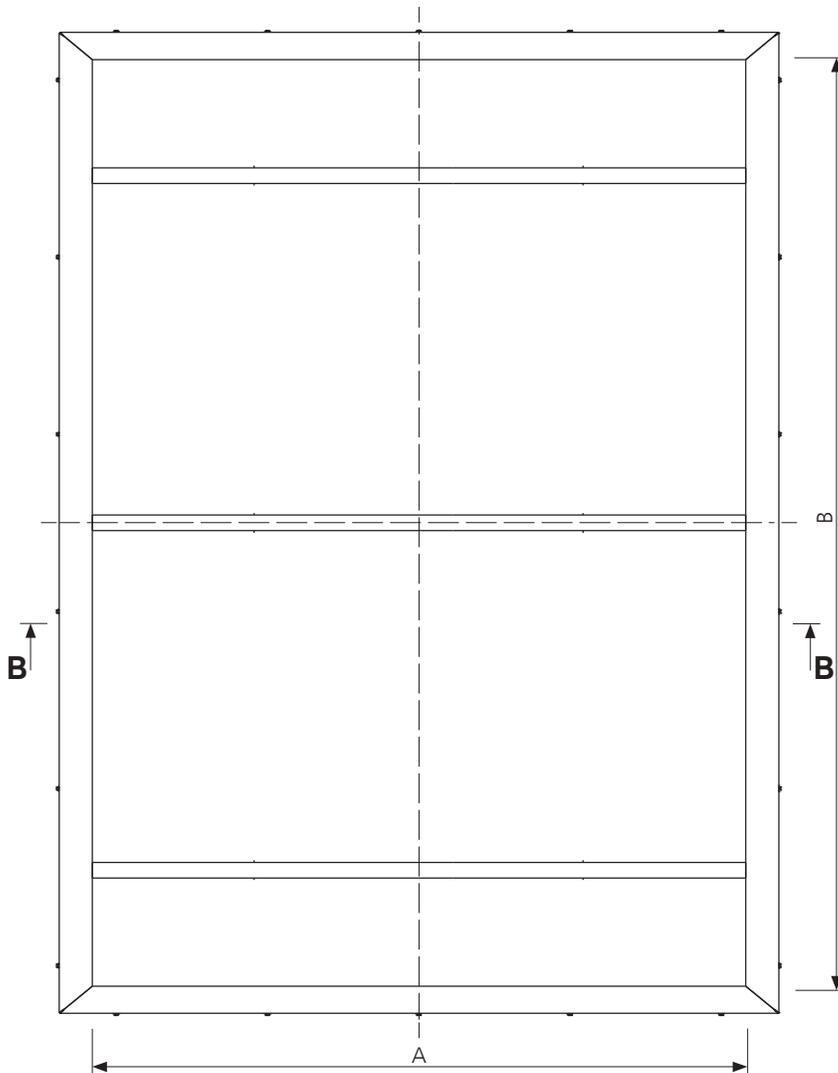


Fig. 18 Top view of mcr ULTRA THERM APF E fixed skylight

A, B – nominal dimension [mm] of APF fixed skylight
 A', B' – total dimension of APF fixed skylight [mm] $A'=A+142$ mm, $B'=B+142$ mm
 H – fixed skylight base height [mm]

2.1.5 | Technical specification

SKYLIGHT TYPE	NOMINAL DIMENSIONS		APPROXIMATE MASS
	A x B		
	[mm]		
C 80	800 x 800		27
C 90	900 x 900		31
C 100	1000 x 1000		39
C 120	1200 x 1200		48
C 140	1400 x 1400		63
C 150	1500 x 1500		69
C 160	1600 x 1600		74
C 180	1800 x 1800		86
C 190	1900 x 1900		92
E 80/120	800 x 1200		40
E 90/120	900 x 1200		42
E 100/120	1000 x 1200		44
E 100/150	1000 x 1500		51
E 100/160	1000 x 1600		54
E 100/180	1000 x 1800		59
E 100/200	1000 x 2000		64
E 100/220	1000 x 2200		69
E 100/240	1000 x 2400		74
E 100/250	1000 x 2500		76
E 120/150	1200 x 1500		56
E 120/160	1200 x 1600		59
E 120/180	1200 x 1800		64
E 120/200	1200 x 2000		69
E 120/240	1200 x 2400		79
E 120/250	1200 x 2500		82
E 150/180	1500 x 1800		77
E 150/200	1500 x 2000		83
E 150/220	1500 x 2200		88
E 150/240	1500 x 2400		94
E 150/250	1500 x 2500		97
E 150/280	1500 x 2800		105
E 150/300	1500 x 3000		110
E 160/180	1600 x 1800		80
E 160/200	1600 x 2000		86
E 160/220	1600 x 2200		91
E 160/250	1600 x 2500		100
E 160/280	1600 x 2800		108
E 160/300	1600 x 3000		114
E 180/200	1800 x 2000		92
E 180/220	1800 x 2200		98
E 180/240	1800 x 2400		103
E 180/250	1800 x 2500		106
E 180/280	1800 x 2800		115
E 180/300	1800 x 3000		121
E 190/200	1900 x 2000		100
E 190/250	1900 x 2500		109
E 190/280	1900 x 2800		118
E 190/300	1900 x 3000		124

2.2 | mcr ULTRA THERM APF fixed skylights with skew steel base – type NG-A

2.2.1 | Technical description of standard

- » fixed skylights according to EN 1873,
- » type NG-A (square or rectangular) fixed skylights designed for flat and pitched roofs covered with roofing paper or PVC membrane,
- » **dimensional range of fixed skylights:** 800 x 800 mm ÷ 2000 x 3000 mm,
- » skew base with a total height with frame of 300 mm or 500 mm made of 1.25 mm thick galvanised steel sheet adapted for the installation of thermal insulation with a thickness of 50 mm and a thermal conductivity coefficient not exceeding $\lambda=0.039$ W/mK,
- » 50 mm wide circumferential flange in the steel base for mounting the vent on the roof structure,
- » white PVC frame in the upper part of the base ensures tightness, thermal insulation and drainage of condensation outside,
- » **leaf glazing:** multi-chamber polycarbonate panel, glazing with $B_{\text{ROOF}}(t1)$ classification (see chapter 4 – page 52 for details),
- » aluminium pressing frame.

2.2.2 | Design of APF fixed skylight

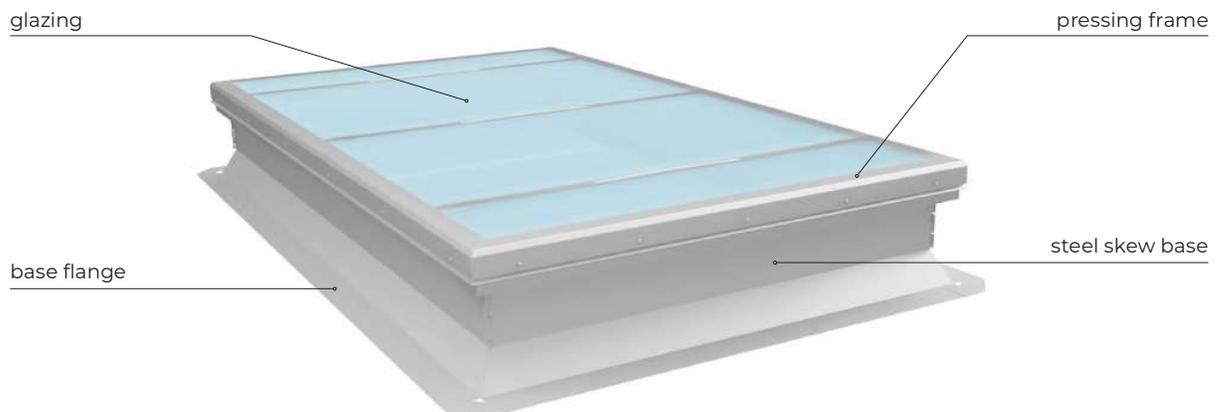


Fig. 19 Design of mcr ULTRA THERM APF NG-A fixed skylight with skew steel base

2.2.3 | APF fixed skylight options of making

- » skylight elements painted in any RAL color (not applicable to frame made of white PVC),
- » base made of steel sheet,
- » custom steel base height with frame in the range 300 ÷ 700 mm,
- » change of base sheet thickness,
- » use of additional safety elements in the form of safety net,
- » skylight making with resistance to soft body impact with energy of 1200 J (SB 1200).

2.2.4 | Technical drawings of APF fixed skylight

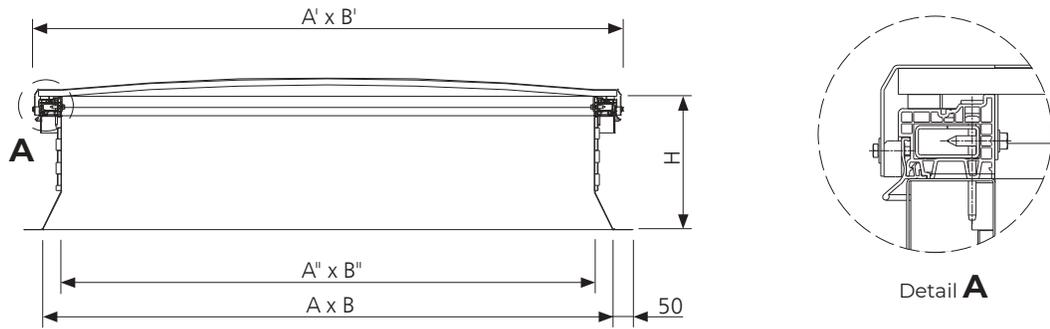


Fig. 20 Section B-B through mcr ULTRA THERM APF NG-A fixed skylight, dimensions in mm

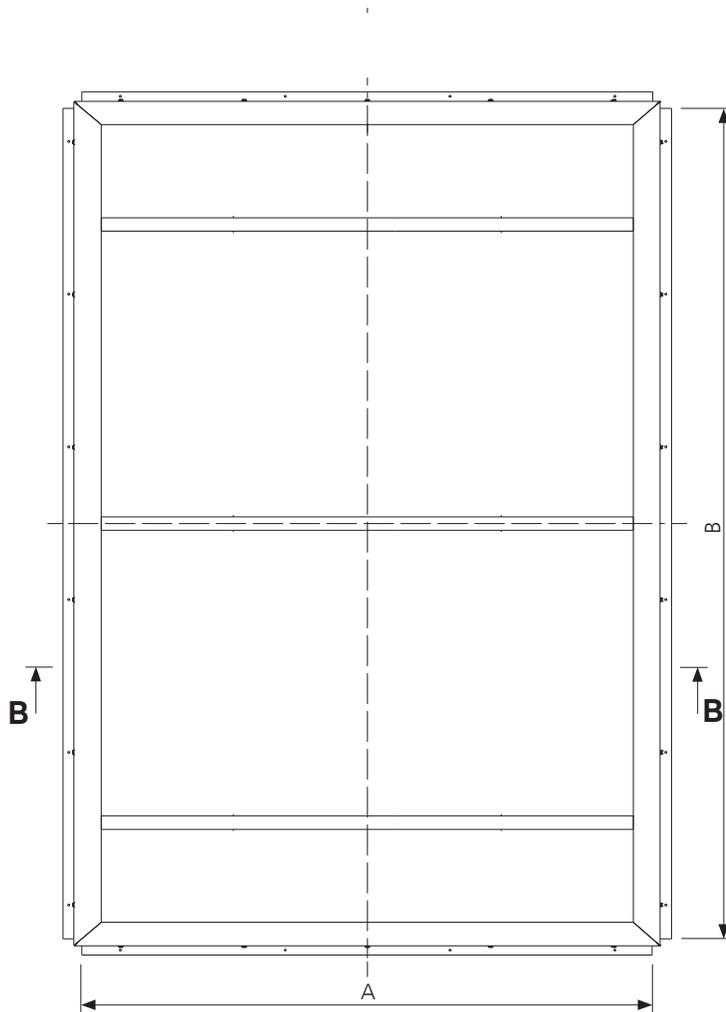


Fig. 21 Top view of mcr ULTRA THERM APF NG-A fixed skylight

A, B – nominal dimension [mm] of APF fixed skylight
 A', B' – total dimension of APF fixed skylight [mm] $A' = A + 142$ mm, $B' = B + 142$ mm
 A'', B'' – clear upper opening dimension of APF fixed skylight
 H – fixed skylight base height [mm]

2.2.5 | Technical specification

SKYLIGHT TYPE	NOMINAL DIMENSIONS		APPROXIMATE MASS
	A x B		
	[mm]		[kg]
NG-A 80/80	800 x 800		24
NG-A 80/90	800 x 900		26
NG-A 80/100	800 x 1000		29
NG-A 90/90	900 x 900		28
NG-A 90/100	900 x 1000		31
NG-A 100/100	1000 x 1000		35
NG-A 120/120	1200 x 1200		44
NG-A 140/140	1400 x 1400		53
NG-A 150/150	1500 x 1500		63
NG-A 160/160	1600 x 1600		69
NG-A 180/180	1800 x 1800		80
NG-A 200/200	2000 x 2000		92
NG-A 80/120	800 x 1200		35
NG-A 90/120	900 x 1200		37
NG-A 100/120	1000 x 1200		39
NG-A 100/150	1000 x 1500		47
NG-A 100/160	1000 x 1600		49
NG-A 100/180	1000 x 1800		54
NG-A 100/200	1000 x 2000		59
NG-A 100/220	1000 x 2200		64
NG-A 100/240	1000 x 2400		69
NG-A 100/250	1000 x 2500		71
NG-A 120/150	1200 x 1500		51
NG-A 120/160	1200 x 1600		54
NG-A 120/180	1200 x 1800		59
NG-A 120/200	1200 x 2000		64
NG-A 120/240	1200 x 2400		74
NG-A 120/250	1200 x 2500		77
NG-A 150/180	1500 x 1800		72
NG-A 150/200	1500 x 2000		77
NG-A 150/220	1500 x 2200		82
NG-A 150/240	1500 x 2400		88
NG-A 150/250	1500 x 2500		91
NG-A 150/280	1500 x 2800		99
NG-A 150/300	1500 x 3000		104
NG-A 160/180	1600 x 1800		74
NG-A 160/200	1600 x 2000		80
NG-A 160/220	1600 x 2200		85
NG-A 160/250	1600 x 2500		94
NG-A 160/280	1600 x 2800		102
NG-A 160/300	1600 x 3000		108
NG-A 180/200	1800 x 2000		86
NG-A 180/220	1800 x 2200		92
NG-A 180/240	1800 x 2400		97
NG-A 180/250	1800 x 2500		100
NG-A 180/280	1800 x 2800		109
NG-A 180/300	1800 x 3000		115
NG-A 200/250	2000 x 2500		107
NG-A 200/280	2000 x 2800		116
NG-A 200/300	2000 x 3000		122

2.3 | Fixed skylights with straight steel, base – type C/E

2.3.1 | Technical description of standard

- » fixed skylights according to EN 1873,
- » fixed skylights type C (square) and E (rectangular) intended for flat and pitched roofs covered with roofing paper or PVC membrane,
- » **dimensional range of fixed skylights:**
 - fixed skylights type C (square): 800 x 800 mm ÷ 2000 x 2000 mm,
 - fixed skylights type E (rectangular): 800 x 1200 mm ÷ 2000 x 3000 mm,
- » straight base of height 300 mm or 500 mm made of 1.25 mm thick galvanised sheet metal,
- » bottom part of the base fitted with a 50 mm wide circumferential flange for mounting the vent on the roof structure,
- » white PVC frame in the upper part of the base ensures tightness, thermal insulation and drainage of condensation outside,
- » base adapted for the installation of thermal insulation with a thickness of 50 mm,
- » **leaf glazing:** multi-chamber polycarbonate panel, acrylic dome, solid polycarbonate dome, multi-chamber polycarbonate panel with 1- or 2-layer acrylic or solid polycarbonate dome, glazing with B_{ROOF}(t1) classification (see chapter 4 – page 52 for details),
- » leaf frame made of white, multi-chamber PVC profile system provides rigidity, strength and high thermal parameters.

2.3.2 | Fixed leaf design

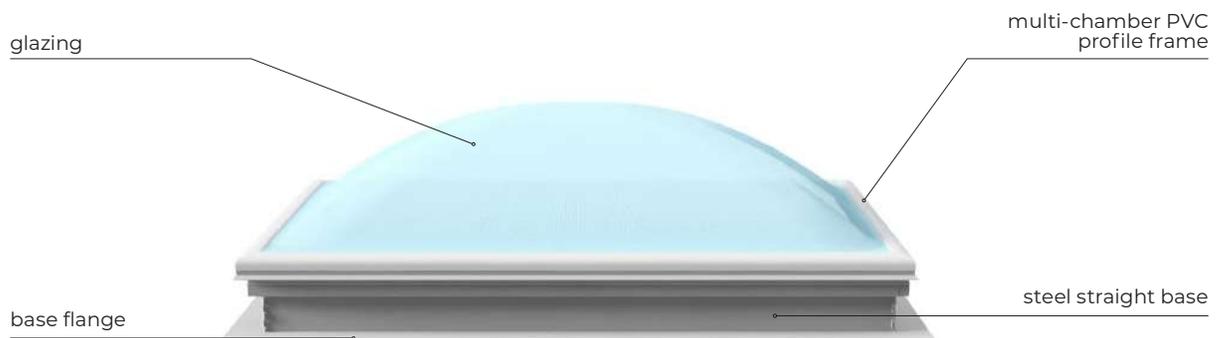


Fig. 22 Design of mcr ULTRA THERM E fixed skylight

2.3.3 | Fixed skylight options

- » skylight elements painted in any RAL color (not applicable to frame made of white PVC),
- » custom base height 250 ÷ 700 mm,
- » change of base sheet thickness,
- » optional use of additional safety elements in the form of safety net,
- » skylight with resistance to soft body impact with energy of 1200 J (SB 1200).

2.3.4 | Technical drawings of fixed skylight with steel straight base

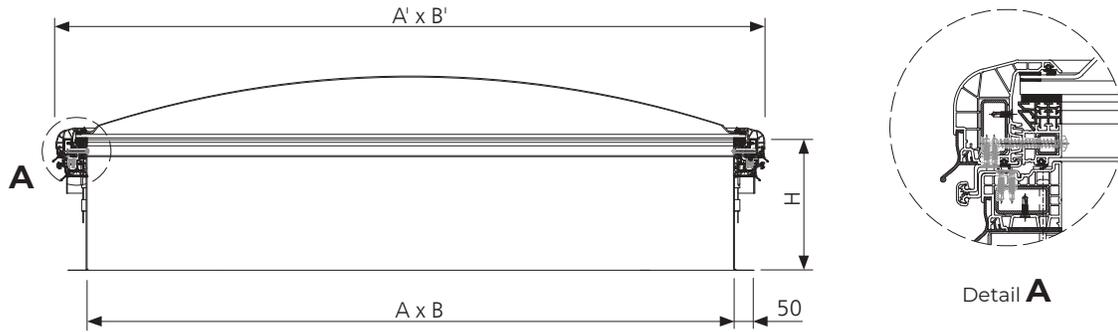


Fig. 23 Section **B-B** through mcr ULTRA THERM APF E fixed skylight, dimensions in mm

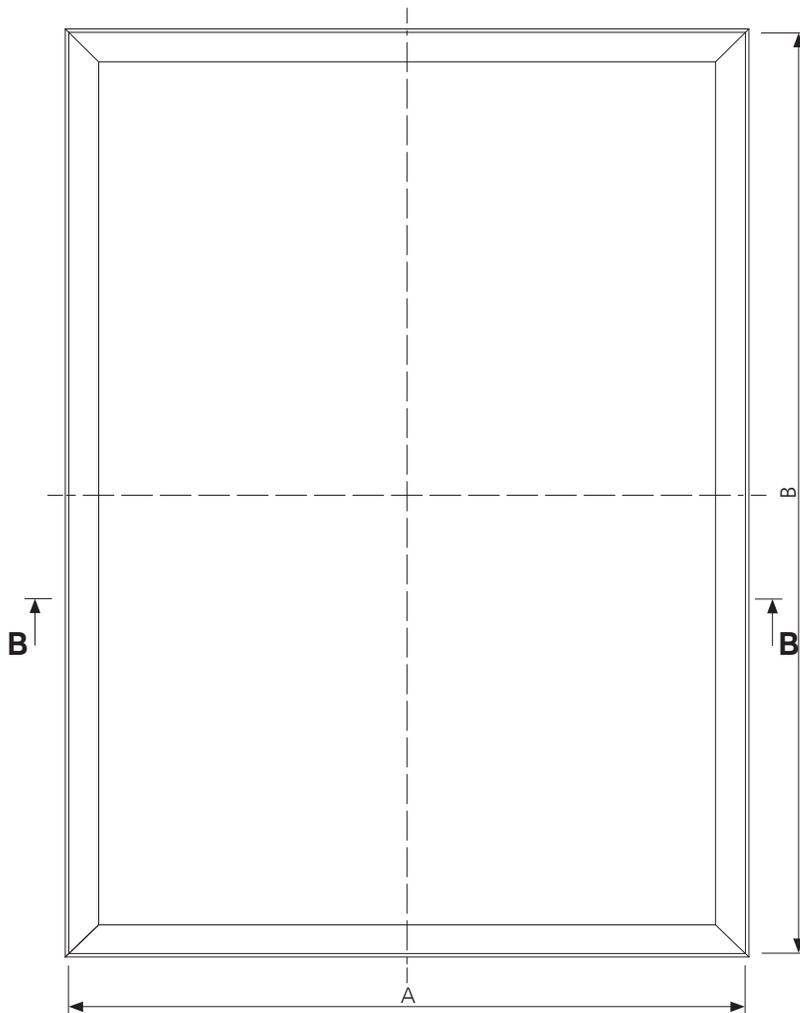


Fig. 24 Top view of mcr ULTRA THERM E fixed skylight

A, B – nominal dimension [mm] of fixed skylight
 A', B' – total dimension of fixed skylight [mm] $A'=A+162$ mm, $B'=B+162$ mm
 H – fixed skylight base height [mm]

2.3.5 | Technical specification

SKYLIGHT TYPE	NOMINAL DIMENSIONS		APPROXIMATE MASS
	A x B		
	[mm]		
C 80	800 x 800		38
C 90	900 x 900		45
C 100	1000 x 1000		56
C 120	1200 x 1200		69
C 140	1400 x 1400		82
C 150	1500 x 1500		88
C 160	1600 x 1600		95
C 180	1800 x 1800		109
C 190	1900 x 1900		116
C 200	2000 x 2000		123
E 80/120	800 x 1200		57
E 90/120	900 x 1200		60
E 100/120	1000 x 1200		63
E 100/150	1000 x 1500		73
E 100/160	1000 x 1600		76
E 100/180	1000 x 1800		82
E 100/200	1000 x 2000		89
E 100/220	1000 x 2200		95
E 100/240	1000 x 2400		102
E 100/250	1000 x 2500		105
E 120/150	1200 x 1500		79
E 120/160	1200 x 1600		82
E 120/180	1200 x 1800		89
E 120/200	1200 x 2000		96
E 120/240	1200 x 2400		109
E 120/250	1200 x 2500		112
E 150/180	1500 x 1800		99
E 150/200	1500 x 2000		106
E 150/220	1500 x 2200		113
E 150/240	1500 x 2400		120
E 150/250	1500 x 2500		124
E 150/280	1500 x 2800		134
E 150/300	1500 x 3000		141
E 160/180	1600 x 1800		102
E 160/200	1600 x 2000		109
E 160/220	1600 x 2200		117
E 160/250	1600 x 2500		127
E 160/280	1600 x 2800		138
E 160/300	1600 x 3000		145
E 180/200	1800 x 2000		116
E 180/220	1800 x 2200		124
E 180/240	1800 x 2400		131
E 180/250	1800 x 2500		135
E 180/280	1800 x 2800		146
E 180/300	1800 x 3000		153
E 190/200	1900 x 2000		126
E 190/250	1900 x 2500		138
E 190/280	1900 x 2800		150
E 190/300	1900 x 3000		157
E 200/250	2000 x 2500		142
E 200/280	2000 x 2800		154
E 200/300	2000 x 3000		161

2.4 | Fixed skylights with skew PVC base type NG-A

2.4.1 | Technical description of standard

- » fixed skylights according to EN 1873,
- » fixed skylights type NG-A (square and rectangular) designed for flat and pitched roofs covered with roofing paper or PVC membrane,
- » **dimensional range of fixed skylights:** 800 x 800 mm ÷ 2000 x 3000 mm,
- » skew base of height 300 mm or 500 mm made of PVC profile,
- » bottom part of the base fitted with a 50 mm wide circumferential flange for mounting the vent on the roof structure,
- » white PVC frame in the upper part of the base ensures tightness, thermal insulation and drainage of condensation outside,
- » base adapted for the installation of thermal insulation with a thickness of 50 mm,
- » **leaf glazing:** multi-chamber polycarbonate panel, acrylic dome, solid polycarbonate dome, multi-chamber polycarbonate panel with 1- or 2-layer acrylic or solid polycarbonate dome, glazing with $B_{\text{ROOF}}(t)$ classification (see chapter 4 – page 52 for details),
- » leaf frame made of white, multi-chamber PVC profile system provides rigidity, strength and high thermal parameters.

2.4.2 | Fixed leaf design



Fig. 25 Design of mcr ULTRA THERM NG-A fixed skylight with skew PVC base

2.4.3 | Fixed skylight options of making

- » skylight elements painted in any RAL color (not applicable to frame made of white PVC),
- » base made of 1.25 mm thick galvanized sheet metal,
- » custom base height 250 ÷ 700 mm,
- » change of base sheet thickness,
- » optional use of additional safety elements in the form of safety net,
- » skylight making with resistance to soft body impact with energy of 1200 J (SB 1200).

2.4.4 | Technical drawings of fixed skylight with skew PVC base

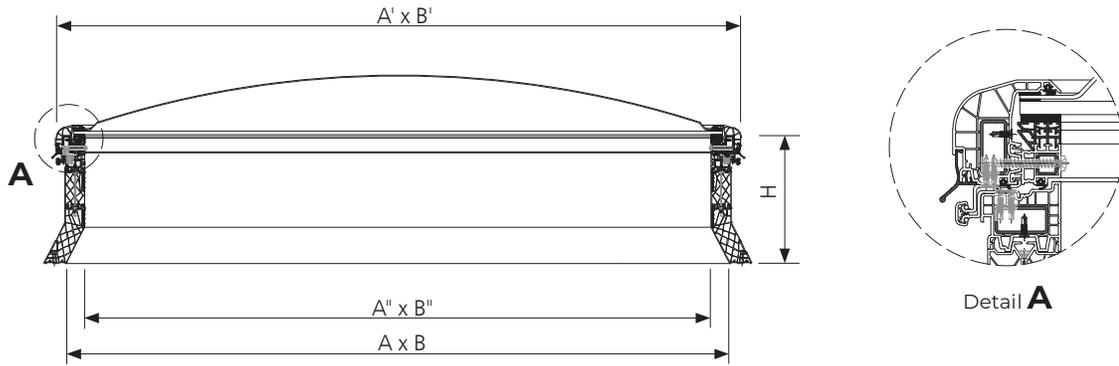


Fig. 26 Section **B-B** through mcr ULTRA THERM NG-A fixed skylight

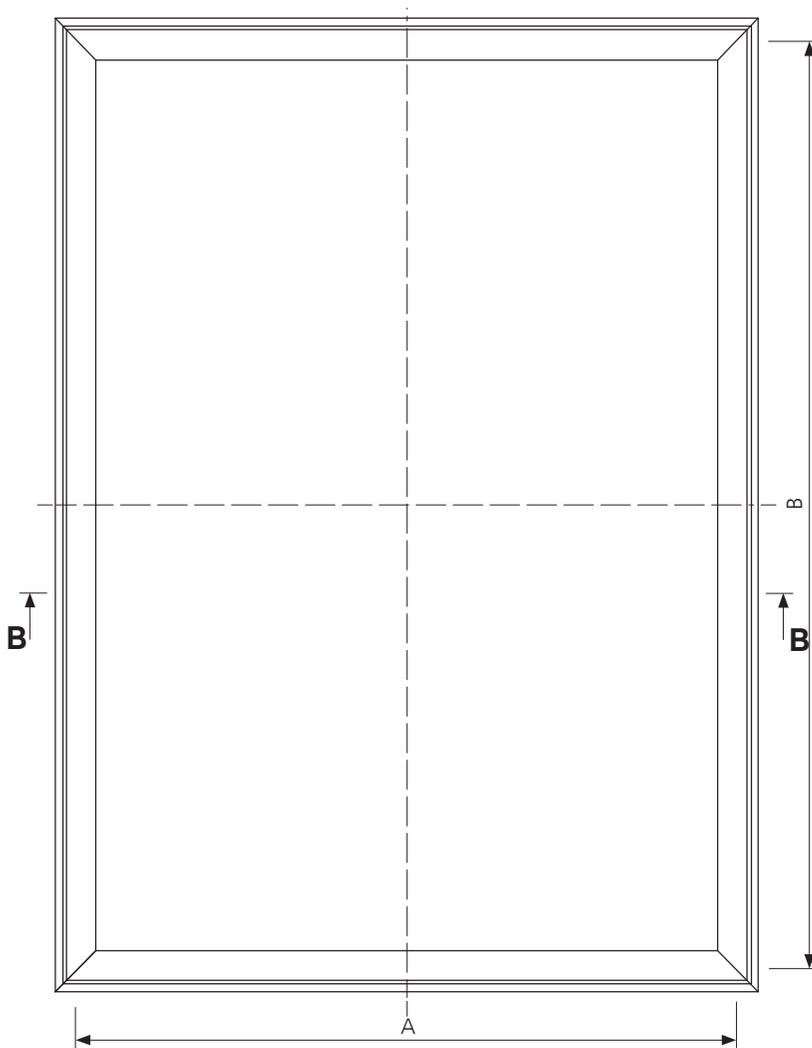


Fig. 27 Top view of mcr ULTRA THERM NG-A fixed skylight

- A, B – nominal dimension [mm] of fixed skylight
- A', B' – total dimension of fixed skylight [mm] $A' = A + 62$ mm, $B' = B + 62$ mm
- A'', B'' – clear upper opening dimension of fixed skylight
- H – fixed skylight base height [mm]



2.4.5 | Technical specification

SKYLIGHT TYPE	NOMINAL DIMENSIONS	APPROXIMATE MASS OF SKYLIGHT WITH PVC BASE	APPROXIMATE MASS OF SKYLIGHT A x B WITH STEEL BASE
	A x B		
	[mm]	[kg]	[kg]
NG-A 80/80	800 x 800	31	34
NG-A 80/90	800 x 900	35	38
NG-A 80/100	800 x 1000	39	42
NG-A 80/120	800 x 1200	47	51
NG-A 90/90	900 x 900	38	40
NG-A 90/100	900 x 1000	42	45
NG-A 90/120	900 x 1200	50	54
NG-A 100/100	1000 x 1000	48	50
NG-A 100/120	1000 x 1200	53	57
NG-A 100/150	1000 x 1500	61	66
NG-A 100/160	1000 x 1600	64	69
NG-A 100/180	1000 x 1800	69	76
NG-A 100/200	1000 x 2000	74	82
NG-A 100/220	1000 x 2200	80	88
NG-A 100/240	1000 x 2400	85	95
NG-A 100/250	1000 x 2500	87	98
NG-A 120/120	1200 x 1200	60	62
NG-A 120/150	1200 x 1500	68	72
NG-A 120/160	1200 x 1600	71	76
NG-A 120/180	1200 x 1800	76	82
NG-A 120/200	1200 x 2000	82	89
NG-A 120/240	1200 x 2400	93	102
NG-A 120/250	1200 x 2500	95	105
NG-A 140/140	1400 x 1400	72	75
NG-A 150/150	1500 x 1500	78	82
NG-A 150/180	1500 x 1800	87	92
NG-A 150/200	1500 x 2000	93	99
NG-A 150/220	1500 x 2200	99	106
NG-A 150/240	1500 x 2400	104	113
NG-A 150/250	1500 x 2500	107	116
NG-A 150/280	1500 x 2800	116	127
NG-A 150/300	1500 x 3000	122	134
NG-A 160/160	1600 x 1600	85	88
NG-A 160/180	1600 x 1800	91	95
NG-A 160/200	1600 x 2000	97	102
NG-A 160/220	1600 x 2200	102	109
NG-A 160/250	1600 x 2500	111	120
NG-A 160/280	1600 x 2800	120	131
NG-A 160/300	1600 x 3000	126	138
NG-A 180/180	1800 x 1800	98	102
NG-A 180/200	1800 x 2000	104	109
NG-A 180/220	1800 x 2200	110	116
NG-A 180/240	1800 x 2400	116	124
NG-A 180/250	1800 x 2500	119	127
NG-A 180/280	1800 x 2800	129	138
NG-A 180/300	1800 x 3000	135	146
NG-A 200/200	2000 x 2000	111	116
NG-A 200/250	2000 x 2500	127	135
NG-A 200/280	2000 x 2800	137	146
NG-A 200/300	2000 x 3000	143	154
NG-A 210/210	2100 x 2100	118	123