

TECHNICAL SPECIFICATION

DXF, DMF, DEF

FLAT ROOF WINDOWS – TYPE F

| WINDOW TYPE | DXF | DMF | DEF |
|--|--|--|---|
| | | | |
| I. APPLICATION | | | |
| Installation | installation angle 2°-15° | | |
| roofing base type: | roofing felt paper, membrane, green roofs, gravel roofs | | |
| II. FEATURES | | | |
| Sash structure | multi-chamber PVC profile | | |
| Profiles fixing roofing | profiles mechanically fixing roofing to the frame | | |
| Opening method | non-opening | manual by means of ZSD control rod (control rod must be purchased separately) | electric in Z-Wave wireless system |
| Equipment: | – | – one screw actuator, max. sash opening: 300mm – two screw actuators: for sizes 140x140cm and 120x220cm | – 1-2* ZWS 12 actuator – max. sash opening: 150mm – ZVP 10 remote control – ZZ60h power supply – ZRD rain sensor |
| Warranty | 10 years for windows, 2 years for electric control elements in DEF flat roof window | | |
| III. TECHNICAL PARAMETERS | | | |
| Tearing out load resistance | UL 1500 as per EN 1873:2005 | | |
| Clamping load resistance | DL 2500 as per EN 1873:2005 | | |
| Watertightness | meets as per EN 1873:2005 | | |
| Impact resistance small hard body | meets as per EN 1873:2005 | | |
| Impact resistance large soft body | SB 1200 as per EN 1873:2005 | | |
| Air permeability | class A3 as per EN 1873:2005 | class 4 as per EN 1873:2005 | |
| Glazing units | DU6, DU8 | | |
| IV. OPTIONS | | | |
| Glazing units | – DU6 in Secure version | | |
| Peripheral profile | – coating in colours of RAL Classic spectrum – ColourLine version | | |
| | – non-standard size and shape of the window [cm] in the range from 60 x 60cm to 120 x 220cm | | |
| V. ADDITIONAL PRODUCTS TO BE USED | | | |
| Mounting accessories | – the XRD installation base allows raising the window above the roof by 15cm. Maximum two bases can be joined. | | |
| External accessories | – AMZ/F Solar awning blinds | | |
| Internal accessories | – ARF/D, ARF/D Z-Wave blackout blinds | | |

VI. TECHNICAL PARAMETERS FOR WINDOWS WITH PARTICULAR GLAZING UNIT TYPES

| Technical parameters | Glazing unit type | |
|--|-------------------|------------|
| | DU6 | DU8 |
| glazing U-value as per EN 673 | 0.5 W/m²K | 0.3 W/m²K |
| window U-value as per EN 12567-2 | 0.88 W/m²K | 0.76 W/m²K |
| acoustic insulation Rw as per EN 1873:2006 p.5.10 (EN ISO 10140-2) | 34(-1;-4) | 33(-1;-3) |
| light transmittance factor τ _v as per EN 410 | 0.52 | 0.40 |
| solar factor g as per EN 410 | 0.40 | 0.30 |
| frame thermal insulation U _f as per PN-EN ISO 10077-2, PN-EN 1873:2006 p.5.9 | 0.69 W/m²K | 0.69 W/m²K |
| thermal insulation of frame and glazing connection Ψ as per PN-EN ISO 10077-2, PN-EN 1873:2006 p.5.9 | 0.042 W/mK | npd |

npd – no performance determined

VII. TECHNICAL PARAMETERS FOR WINDOWS IN PARTICULAR SIZES

| frame external dimensions [cm] | 60x60 | 60x90 | 70x70 | 80x80 | 90x90 | 90x120 | 100x100 | 100x150 | 120x120 | 140x140 | 120x220 |
|--------------------------------|-------|-------|-------|-------|-------|--------|---------|---------|---------|---------|---------|
| window size symbol | 01K | 02K | 03K | 04K | 05K | 06K | 07K | 10K | 08K | 09K | 11K |
| window internal area [m²] | 0.27 | 0.42 | 0.38 | 0.51 | 0.67 | 0.91 | 0.84 | 1.30 | 1.25 | 1.73 | 2.36 |
| effective glazing area [m²] | 0.23 | 0.37 | 0.33 | 0.46 | 0.60 | 0.83 | 0.77 | 1.21 | 1.16 | 1.63 | 2.23 |
| DXF DU6 window weight [kg]±1kg | 36 | 49 | 45 | 55 | 65 | 82 | 77 | 106 | 102 | 131 | 169 |
| DMF DU6 window weight [kg]±1kg | 38 | 51 | 46 | 55 | 67 | 83 | 78 | 107 | 104 | 132 | 170 |
| DEF DU6 window weight [kg]±1kg | 40 | 53 | 49 | 59 | 70 | 87 | 82 | 112 | 107 | 144 | 169 |
| DXF DU8 window weight [kg]±1kg | 39 | 53 | 49 | 60 | 72 | 91 | 85 | 119 | 115 | 148 | 193 |
| DMF DU8 window weight [kg]±1kg | 41 | 55 | 51 | 62 | 74 | 93 | 87 | 121 | 116 | - | - |
| DEF DU8 window weight [kg]±1kg | 43 | 58 | 53 | 64 | 76 | 96 | 90 | 126 | 121 | - | - |

TECHNICAL SPECIFICATION

DXC-C, DMC-C, DEC-C

FLAT ROOF WINDOWS WITH TRANSPARENT DOME – TYPE C

| WINDOW TYPE | DXC-C | DMC-C | DEC-C |
|--|---|---|---|
| | | | |
| I. APPLICATION | | | |
| Installation | installation angle 0°-15° | | |
| Roofing base type: | roofing felt paper, membrane, green roofs, gravel roofs | | |
| II. FEATURES | | | |
| Sash structure | multi-chamber PVC profile | | |
| Dome | transparent, UV-stabilized polycarbonate with a thickness of 3mm (sizes up to 06K – 90x120) or 4mm (sizes from 07K - 100x100) | | |
| Installation set | set fixing dome and hindering its removal - material resistant to weather conditions (alloy of Al-Zn) | | |
| Profiles fixing roofing | profiles mechanically fixing roofing to the frame | | |
| Opening method | non-opening | manual by means of ZSD control rod (control rod must be purchased separately) | electric in Z-Wave wireless system |
| Equipment: | – | – one screw actuator, max. sash opening: 300mm | – 1-2 ZWS 12 actuator* – max. sash opening: 150mm – ZWP 10 remote control – ZZ60h power supply – ZRD rain sensor |
| Warranty | 10 years for windows, 2 years for electric control elements in DEC flat roof window | | |
| III. TECHNICAL PARAMETERS | | | |
| Tearing out load resistance | UL 1500 as per EN 1873:2005 | | |
| Clamping load resistance | DL 2500 as per EN 1873:2005 | | |
| Watertightness | meets as per EN 1873:2005 | | |
| Impact resistance small hard body | meets as per EN 1873:2005 | | |
| Impact resistance large soft body | SB 1200 as per EN 1873:2005 | | |
| Air permeability | class A3 as per EN 1873:2005 | class 4 as per EN 1873:2005 | |
| Glazing units | P2, U6, U8(VSG), L2 and in SECURE/PK -P4 versions | | |
| IV. OPTIONS | | | |
| Glazing units | – possibility to manufacture DXC, DMC windows in P4 Secure version | | |
| Dome | – possibility to manufacture an opaque dome (D_C-M) | | |
| V. ADDITIONAL PRODUCTS TO BE USED | | | |
| Mounting accessories | – the XRD installation base allows raising the window above the roof by 15cm. Maximum two bases can be joined. | | |
| External accessories | – AMZ/C Z-Wave awning blinds | | |
| Internal accessories | – ARF/D, ARF/D Z-Wave blackout blinds | | |

VI. TECHNICAL PARAMETERS FOR WINDOWS WITH PARTICULAR GLAZING UNIT TYPES

| Technical parameters | Glazing unit type | |
|--|-------------------|---------------|
| | P2 | U8 (VSG) |
| glazing U-value as per EN 673 | 1.1 W/m²K | 0.3 W/m²K |
| window U-value as per EN 12567-2 | 1.2 W/m²K | 0.72 W/m²K |
| acoustic insulation Rw as per EN 1873:2006 p.5.10 (EN ISO 10140-2) | 35(-1;-3) | 36(-1;-3) |
| light transmittance factor τ_v^* as per EN 410 | 0.577 (0.591) | 0.486 (0.499) |
| solar factor g^{**} as per EN 410 | 0.435 | 0.221 |
| frame thermal insulation Uf as per PN-EN ISO 10077-2, PN-EN 1873:2006 p.5.9 | 0.90 W/m²K | 0.72 W/m²K |
| thermal insulation of frame and glazing connection Ψ as per PN-EN ISO 10077-2, PN-EN 1873:2006 p.5.9 | 0.036 W/mK | 0.038 W/mK |

* for dome made of 3mm thick material

** FAKRO internal test results

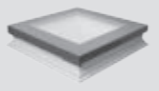
npd – no performance determined

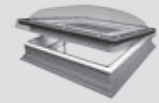
VII. TECHNICAL PARAMETERS FOR WINDOWS IN PARTICULAR SIZES

| frame external dimensions [cm] | 60x60 | 60x90 | 70x70 | 80x80 | 90x90 | 90x120 | 100x100 | 100x150 | 120x120 | 140x140 | 120x220 |
|------------------------------------|-------|-------|-------|-------|-------|--------|---------|---------|---------|---------|---------|
| window size symbol | 01K | 02K | 03K | 04K | 05K | 06K | 07K | 10K | 08K | 09K | 11K |
| window internal area [m²] | 0.27 | 0.42 | 0.38 | 0.51 | 0.67 | 0.91 | 0.84 | 1.30 | 1.25 | 1.73 | 2.36 |
| effective glazing area [m²] | 0.23 | 0.37 | 0.33 | 0.46 | 0.60 | 0.83 | 0.77 | 1.21 | 1.16 | 1.63 | 2.23 |
| DXC P2 window weight [kg]±1kg | 31 | 38 | 38 | 45 | 54 | 65 | 65 | 89 | 86 | 103 | 113 |
| DMC P2 window weight [kg]±1kg | 31 | 39 | 42 | 46 | 55 | 55 | 60 | 93 | 75 | 93 | 114 |
| DEC P2 window weight [kg]±1kg | 27 | 39 | 38 | 47 | 55 | 57 | 65 | 93 | 86 | 95 | 117 |
| DEC U8(VSG) window weight [kg]±1kg | 36 | 57 | 53 | 63 | 77 | 84 | 93 | 131 | 125 | - | - |

TECHNICAL SPECIFICATION





DRF DU6, DRC-C P2, INSULATED FLAT ACCESS ROOF LIGHT

| WINDOW TYPE | DRF DU6 |
|--|---|
| |  |
| I. APPLICATION | |
| Installation | installation angle 2°-15° |
| Roofing base type | roofing felt paper, membrane, green roofs, gravel roofs |
| II. FEATURES | |
| Sash structure | multi-chamber PVC profile |
| Dome | domeless |
| Installation set | domeless |
| Profiles fixing roofing | profiles mechanically fixing roofing to the frame |
| Opening method | manually, up to an angle of 80° |
| Equipment | gas springs to facilitate operation of the sash |
| Warranty | 10 years for access roof light, 2 years for gas springs |
| III. TECHNICAL PARAMETERS | |
| Wind load resistance | Class C5/B5 |
| Snow load resistance | 6H*-18-4H-18-44.2** 6H*-18-4H-18-44.4** 6H*-16-4H-18-55.2** 6H*-16-4H-18-55.4** |
| *toughened outer pane ** laminated inner pane | |
| Fire resistance | npd |
| External fire resistance | npd |
| Watertightness Unshielded (A) | E900 |
| Impact resistance | Class 5 - 950mm |
| Air permeability | Class 4 |
| according to standard EN 14351-1:2006+A1:2010 | |
| IV. OPTIONS | |
| Glazing unit | DU8 |
| Peripheral profile | - coating in colours of RAL Classic spectrum (ColourLine version) |
| V. ADDITIONAL PRODUCTS TO BE USED | |
| Mounting accessories | the XRD installation base allows raising the access roof light above the roof by 15cm. Maximum two bases can be joined. |
| External accessories | AMZ/F Solar awning blinds |
| Internal accessories | ARF/D blackout blinds |

| WINDOW TYPE | DRC-C P2 |
|--|---|
| |  |
| I. APPLICATION | |
| Installation | installation angle 0°-15° |
| Roofing base type | roofing felt paper, membrane, green roofs, gravel roofs |
| II. FEATURES | |
| Sash structure | multi-chamber PVC profile |
| Dome | transparent, UV-stabilized polycarbonate with a thickness of 3mm (sizes up to 06K) or 4mm (sizes from 07K) |
| Installation set | set fixing dome and hindering its removal - material resistant to weather conditions (alloy of Al-Zn) |
| Profiles fixing roofing | profiles mechanically fixing roofing to the frame |
| Opening method | manually, up to an angle of 80° |
| Equipment | gas springs to facilitate operation of the sash |
| Warranty | 10 years for access roof light, 2 years for gas springs |
| III. TECHNICAL PARAMETERS | |
| Tearing out load resistance | UL 1500 |
| Clamping load resistance | DL 2500 |
| Watertightness | spelnia |
| Impact resistance small hard body | spelnia |
| Impact resistance large soft body | SB 1200 |
| Air permeability | Ap 0.32 |
| Laminated inner pan | P2A according to EN 356 standard |
| Toughened outer pane | 1C3 according to EN 12600 standard |
| According to EN 1873:2014 standard | |
| IV. OPTIONS | |
| Dome | transparent dome can be produced (DRC-M) |
| Glazing unit | U6, U8 (VSG) |
| V. ADDITIONAL PRODUCTS TO BE USED | |
| Mounting accessories | the XRD installation base allows raising the access roof light above the roof by 15cm. Maximum two bases can be joined. |
| External accessories | AMZ/C Z-Wave awning blinds |
| Internal accessories | ARF/D blackout blinds |

| TECHNICAL PARAMETERS FOR PARTICULAR ACCESS ROOF LIGHTS | | | |
|---|------------------------|--|---|
| Technical parameters | Access roof light type | | Technical parameters |
| | DRF DU6 | | |
| Ug value as per EN 1279-5+A2:2010 | 0.5 W/m²K | | Ug value as per EN 673 |
| Uw value as per EN 14351-1:2006+A1:2010 | 0.74 W/m²K | | Uw value as per EN 1873:2014 |
| acoustic insulation Rw as per EN 14351-1:2006+A1:2010 | npd* | | Arc, ref as per EN 1873:2014 |
| light transmittance factor τ _v as per EN 1279-5+A2:2010 | 0.54 | | acoustic insulation Rw as per EN 1873:2014 |
| solar factor g as per EN 1279-5+A2:2010 | 0.43 | | light transmittance factor τ _v as per EN 1873:2014 |
| frame thermal insulation U _f as per EN 14351-1:2006+A1:2010 | 0.78 W/m²K | | |
| thermal insulation of frame and glazing connection Ψ as per EN 14351-1:2006+A1:2010 | 0.055 W/m²K | | |

npd – no performance determined

| VII. TECHNICAL PARAMETERS FOR ACCESS ROOF LIGHTS IN PARTICULAR SIZES | | | | | | | | | | |
|--|---|---|---|---|--|--|--|--|--|--|
| commercial size [cm] | 90x90 | 90x120 | 100x100 | 120x120 | | | | | | |
| access roof light symbol | 05K | 06K | 07K | 08K | | | | | | |
| |  |  |  |  | | | | | | |
| access roof light internal area [m²] | 0.67 | 0.91 | 0.84 | 1.25 | | | | | | |
| effective glazing area [m²] | 0.60 | 0.83 | 0.77 | 1.16 | | | | | | |
| access roof light weight DRF DU6 [kg] | 84 | 103 | 98 | 132 | | | | | | |
| access roof light weight DRC-C P2 [kg] | 71 | 86 | 84 | 106 | | | | | | |