



Calculation based on ISO 15099

| Product name: Universal Outswing Awning Window | | | | Center-of-glass properties | | |
|---|---|--|--------------|---|--------------|--------------|
| ASHRAE/IECC /DOE North American Climate Zone | North, East, South- facing West - facing |  | | Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm No Grids | | |
| Climate specific recommendations: | | Whole-window installed U-value | | Ucog-Value | | |
| | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K | BTU/hr.ft2.F |
| 8 | | 0.88 | 0.15 | 0.230 | 0.625 | 0.110 |
| 7 | | 0.87 | 0.15 | 0.230 | 0.612 | 0.108 |
| 6 | | 0.86 | 0.15 | 0.230 | 0.601 | 0.106 |
| 5 | | 0.86 | 0.15 | 0.230 | 0.600 | 0.106 |
| 4 | | 0.86 | 0.15 | 0.230 | 0.597 | 0.105 |
| Marine North | | 0.86 | 0.15 | 0.230 | 0.595 | 0.105 |
| Marine South | ✓ | 0.85 | 0.15 | 0.230 | 0.592 | 0.104 |
| 3 | ✓ | 0.86 | 0.15 | 0.230 | 0.594 | 0.105 |
| 2 West | ✓ | 0.83 | 0.15 | 0.230 | 0.555 | 0.098 |
| 2 East | ✓ | 0.83 | 0.15 | 0.230 | 0.555 | 0.098 |
| Universal Outswing Awning V Cardinal Endur | | FRAME | | Psi-spacer | | Psi-opaque |
| | | Frame height | | U-frame | | W/mK |
| | | mm | in | W/m2K | BTU/hr.ft2.F | |
| | | | | | | |
| | Head | 105 | 4.13 | 1.15 | 0.20 | 0.010 |
| | Sill | 105 | 4.13 | 1.15 | 0.20 | 0.006 |
| | left jamb | 105 | 4.13 | 1.14 | 0.20 | 0.009 |
| | right jamb | 105 | 4.13 | 1.14 | 0.20 | 0.005 |


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|---|---|--|--------------|--|-------------|--------------|
| ASHRAE/IECC /DOE North American Climate Zone | North, East, South- facing West - facing |  | | Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm SDL/no Internal grids < 25.4mm | | |
| Climate specific recommendations: | | Whole-window installed U-value | | Ucog-Value | | |
| | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K | BTU/hr.ft2.F |
| 8 | | 0.88 | 0.15 | 0.201 | 0.625 | 0.110 |
| 7 | | 0.87 | 0.15 | 0.201 | 0.612 | 0.108 |
| 6 | | 0.86 | 0.15 | 0.201 | 0.601 | 0.106 |
| 5 | | 0.86 | 0.15 | 0.201 | 0.600 | 0.106 |
| 4 | | 0.86 | 0.15 | 0.201 | 0.597 | 0.105 |
| Marine North | | 0.86 | 0.15 | 0.201 | 0.595 | 0.105 |
| Marine South | ✓ | 0.85 | 0.15 | 0.201 | 0.592 | 0.104 |
| 3 | ✓ | 0.86 | 0.15 | 0.201 | 0.594 | 0.105 |
| 2 West | ✓ | 0.83 | 0.15 | 0.201 | 0.555 | 0.098 |
| 2 East | ✓ | 0.83 | 0.15 | 0.201 | 0.555 | 0.098 |
| | | | | | | |
| Universal Outswing Awning V | | FRAME | | Psi-spacer | | Psi-opaque |
| Cardinal Endur | | Frame height | | Ψ | | W/mK |
| | | mm | in | W/mK | BTU/hr.ft.F | |
| Head | | 105 | 4.13 | 1.15 | 0.20 | 0.010 |
| Sill | | 105 | 4.13 | 1.15 | 0.20 | 0.006 |
| left jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 |
| right jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 |
| | | | | | | 0.141 |
| | | | | | | BTU/hr.ft.F |
| | | | | | | 0.081 |
| | | | | | | Grade B |


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|--|----------------------------|--------------|--|----------------------------|--|------------|--------------|-------------|
| ASHRAE/IECC /DOE North American Climate Zone | North, East, West - facing | South-facing |  | | Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm Internal grids And SDL with Internal grids < 25.4mm maintain 3mm clearance | | | |
| Climate specific recommendations: | | | Whole-window installed U-value | | Ucog-Value | | | |
| | | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K | BTU/hr.ft2.F | |
| 8 | | | 0.88 | 0.15 | 0.201 | 0.625 | 0.110 | |
| 7 | | | 0.87 | 0.15 | 0.201 | 0.612 | 0.108 | |
| 6 | | | 0.86 | 0.15 | 0.201 | 0.601 | 0.106 | |
| 5 | | | 0.86 | 0.15 | 0.201 | 0.600 | 0.106 | |
| 4 | | ✓ | 0.86 | 0.15 | 0.201 | 0.597 | 0.105 | |
| Marine North | | ✓ | 0.86 | 0.15 | 0.201 | 0.595 | 0.105 | |
| Marine South | ✓ | ✓ | 0.85 | 0.15 | 0.201 | 0.592 | 0.104 | |
| 3 | ✓ | ✓ | 0.86 | 0.15 | 0.201 | 0.594 | 0.105 | |
| 2 West | ✓ | ✓ | 0.83 | 0.15 | 0.201 | 0.555 | 0.098 | |
| 2 East | ✓ | ✓ | 0.83 | 0.15 | 0.201 | 0.555 | 0.098 | |
| | | | | | | | | |
| Universal Outswing Awning V Cardinal Endur | | FRAME | | | | Psi-spacer | | Psi-opaque |
| | | Frame height | | U-frame | | Ψ | | W/mK |
| | | mm | in | W/m2K | BTU/hr.ft2.F | W/mK | BTU/hr.ft.F | |
| Head | | 105 | 4.13 | 1.15 | 0.20 | 0.010 | 0.006 | 0.141 |
| Sill | | 105 | 4.13 | 1.15 | 0.20 | 0.010 | 0.006 | BTU/hr.ft.F |
| left jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 | 0.005 | 0.081 |
| right jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 | 0.005 | Grade B |


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|--|--------------|----------------------------|--|----------------------------|--------------|---|--------------|-------------|
| Product name: Universal Outswing Awning Window | | | | Center-of-glass properties | | | | |
| ASHRAE/IECC /DOE North American Climate Zone | South-facing | North, East, West - facing | <div> Passive House Institute US</div> | | | Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm Internal grids And SDL with Internal grids < 25.4mm | | |
| Climate specific recommendations: | | | Whole-window installed U-value | | Ucog-Value | | | |
| | | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K | BTU/hr.ft2.F | |
| 8 | | | 0.93 | 0.16 | 0.201 | 0.625 | 0.110 | |
| 7 | | | 0.92 | 0.16 | 0.201 | 0.612 | 0.108 | |
| 6 | | | 0.92 | 0.16 | 0.201 | 0.601 | 0.106 | |
| 5 | | | 0.92 | 0.16 | 0.201 | 0.600 | 0.106 | |
| 4 | | | 0.91 | 0.16 | 0.201 | 0.597 | 0.105 | |
| Marine North | | ✓ | 0.91 | 0.16 | 0.201 | 0.595 | 0.105 | |
| Marine South | ✓ | ✓ | 0.91 | 0.16 | 0.201 | 0.592 | 0.104 | |
| 3 | ✓ | ✓ | 0.91 | 0.16 | 0.201 | 0.594 | 0.105 | |
| 2 West | ✓ | ✓ | 0.88 | 0.16 | 0.201 | 0.555 | 0.098 | |
| 2 East | ✓ | ✓ | 0.88 | 0.16 | 0.201 | 0.555 | 0.098 | |
| | | | | | | | | |
| Universal Outswing Awning V | | FRAME | | | | Psi-spacer | | Psi-opaque |
| Cardinal Endur | | Frame height | | U-frame | | Ψ | | W/mK |
| | | mm | in | W/m2K | BTU/hr.ft2.F | W/mK | BTU/hr.ft.F | |
| Head | | 105 | 4.13 | 1.15 | 0.20 | 0.010 | 0.006 | 0.141 |
| Sill | | 105 | 4.13 | 1.15 | 0.20 | 0.010 | 0.006 | BTU/hr.ft.F |
| left jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 | 0.005 | 0.081 |
| right jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 | 0.005 | Grade B |


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| ASHRAE/IECC /DOE North American Climate Zone | South-facing | North, East, West - facing |  | | Cardinal E366/ Arg/ E180/ Arg/ i89(#6) (6mm) 44,0mm SDL/no Internal grids >= 25.4mm | | | |
| Climate specific recommendations: | | | Whole-window installed U-value | | Ucog-Value | | | |
| | | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K | BTU/hr.ft2.F | |
| 8 | | | 0.88 | 0.15 | 0.173 | 0.625 | 0.110 | |
| 7 | | | 0.87 | 0.15 | 0.173 | 0.612 | 0.108 | |
| 6 | | | 0.86 | 0.15 | 0.173 | 0.601 | 0.106 | |
| 5 | | | 0.86 | 0.15 | 0.173 | 0.600 | 0.106 | |
| 4 | | ✓ | 0.86 | 0.15 | 0.173 | 0.597 | 0.105 | |
| Marine North | | ✓ | 0.86 | 0.15 | 0.173 | 0.595 | 0.105 | |
| Marine South | ✓ | ✓ | 0.85 | 0.15 | 0.173 | 0.592 | 0.104 | |
| 3 | ✓ | ✓ | 0.86 | 0.15 | 0.173 | 0.594 | 0.105 | |
| 2 West | ✓ | ✓ | 0.83 | 0.15 | 0.173 | 0.555 | 0.098 | |
| 2 East | ✓ | ✓ | 0.83 | 0.15 | 0.173 | 0.555 | 0.098 | |
| | | | | | | | | |
| Universal Outswing Awning V | | FRAME | | | | Psi-spacer | | Psi-opaque |
| Cardinal Endur | | Frame height | | U-frame | | Ψ | | W/mK |
| | | mm | in | W/m2K | BTU/hr.ft2.F | W/mK | BTU/hr.ft.F | |
| Head | | 105 | 4.13 | 1.15 | 0.20 | 0.010 | 0.006 | 0.141 |
| Sill | | 105 | 4.13 | 1.15 | 0.20 | 0.010 | 0.006 | BTU/hr.ft.F |
| left jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 | 0.005 | 0.081 |
| right jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.009 | 0.005 | Grade B |


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| Climate specific recommendations: | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K BTU/hr.ft2.F |
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| 7 | | 0.87 | 0.15 | 0.173 | 0.612 0.108 |
| 6 | | 0.86 | 0.15 | 0.173 | 0.601 0.106 |
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| 4 | ✓ | 0.86 | 0.15 | 0.173 | 0.597 0.105 |
| Marine North | ✓ | 0.86 | 0.15 | 0.173 | 0.595 0.105 |
| Marine South | ✓ | 0.85 | 0.15 | 0.173 | 0.592 0.104 |
| 3 | ✓ | 0.86 | 0.15 | 0.173 | 0.594 0.105 |
| 2 West | ✓ | 0.83 | 0.15 | 0.173 | 0.555 0.098 |
| 2 East | ✓ | 0.83 | 0.15 | 0.173 | 0.555 0.098 |
| Universal Outswing Awning V | | FRAME | | Psi-spacer | |
| Cardinal Endur | | Frame height | | Ψ | |
| | | mm | in | W/m2K | BTU/hr.ft.F |
| Head | | 105 | 4.13 | 1.15 | 0.20 |
| Sill | | 105 | 4.13 | 1.15 | 0.20 |
| left jamb | | 105 | 4.13 | 1.14 | 0.20 |
| right jamb | | 105 | 4.13 | 1.14 | 0.20 |
| | | | | W/mK | BTU/hr.ft.F |
| | | | | 0.010 | 0.006 |
| | | | | 0.009 | 0.005 |
| | | | | 0.009 | 0.005 |
| | | | | Grade B | |

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| Climate specific recommendations: | | Whole-window installed U-value | | Ucog-Value | | |
| | | W/m2K | BTU/hr.ft2.F | SHGC | W/m2K | BTU/hr.ft2.F |
| | | | | | | |
| 8 | | 0.93 | 0.16 | 0.173 | 0.625 | 0.110 |
| 7 | | 0.92 | 0.16 | 0.173 | 0.612 | 0.108 |
| 6 | | 0.92 | 0.16 | 0.173 | 0.601 | 0.106 |
| 5 | | 0.92 | 0.16 | 0.173 | 0.600 | 0.106 |
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| 2 West | ✓ | 0.88 | 0.16 | 0.173 | 0.555 | 0.098 |
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| | | | | | | |
| Universal Outswing Awning V | | FRAME | | Psi-spacer | | Psi-opaque |
| Cardinal Endur | | Frame height | | Ψ | | |
| | | mm | in | W/m2K | BTU/hr.ft.F | W/mK |
| Head | | 105 | 4.13 | 1.15 | 0.20 | 0.141 |
| Sill | | 105 | 4.13 | 1.15 | 0.20 | BTU/hr.ft.F |
| left jamb | | 105 | 4.13 | 1.14 | 0.20 | 0.081 |
| right jamb | | 105 | 4.13 | 1.14 | 0.20 | Grade B |

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