

SolarMount (E)volution™ Roof Mount Technical Datasheet

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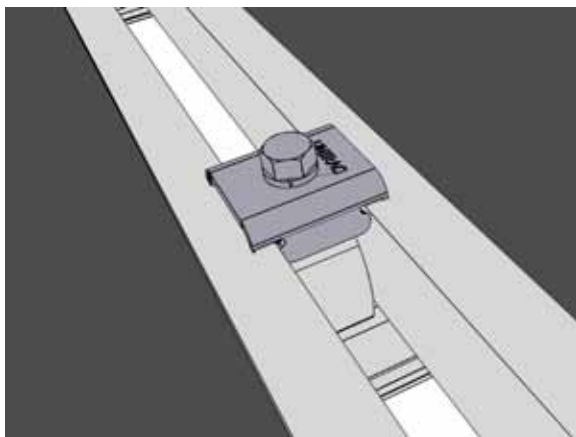
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SolarMount (E)volution Module Connection Hardware

SolarMount (E)volution Series Mid Clamp Part No. 002106M, 002106D



- **Mid Clamp Material:**
Bottom: One of the following mill finished extruded aluminum alloys:
 6005A-T61, 6351-T5, 6061-T6
Ultimate Tensile: 38ksi
Top: ASTM Stainless Steel 300 Series
Ultimate Tensile: 70ksi
- **Mid Clamp Weight:** 0.209 lbs (95g)
- Allowable and design loads are valid when components are assembled with SolarMount (E)volution Beams according to authorized UNIRAC documents
- Assemble with one 5/16 -18 stainless steel ASTM 300 Series bolt
- Tighten to 10 ft-lbs of torque
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual, AC 428, and test results from an IAS accredited laboratory.

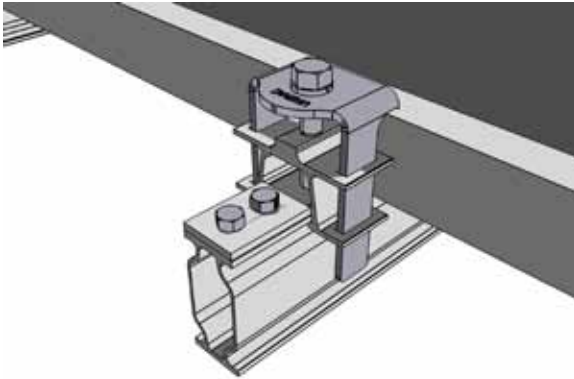


Dimensions specified in inches unless noted

Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Load lbs (N)	Resistance Factor, Φ
Parallel to Beam, X±	677 (3011)	244 (1085)	2.777	369 (1641)	0.545
Tension, Y+	2792 (12442)	1061 (4720)	2.635	1605 (7141)	0.574
Transverse to Beam, Z±	1655 (7360)	636 (289)	2.600	963 (4283)	0.582

SolarMount (E)volution Module Connection Hardware

SolarMount (E)volution End Clamp Part No. 002011M



- **End Clamp Material:**
Bottom: One of the following mill finished extruded aluminum alloys: 6005A-T61, 6351-T5, 6061-T6
Ultimate Tensile: 38ksi
Top: ASTM Stainless Steel 300 Series
Ultimate Tensile: 70ksi
- **End Clamp Weight:** 0.323 lbs (147g)
- Allowable and design loads are valid when components are assembled with SolarMount (E)volution Beams according to authorized UNIRAC documents
- Assemble with one ⁵/₁₆ -18 ASTM stainless steel 300 Series bolt
- Tighten to 10 ft-lbs of torque
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual, AC 428, and test results from an IAS accredited laboratory.
- Modules must be installed at least 1.5" from either end of a beam

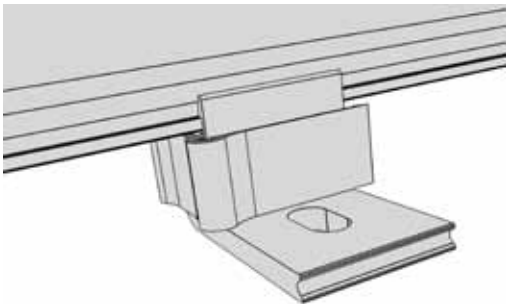


Dimensions specified in inches unless noted

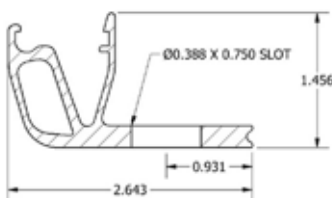
Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Loads lbs (N)	Resistance Factor, Φ
Parallel to Beam, X±	721 (3207)	204 (907)	3.539	308 (1369)	0.427
Tension, Y+	2590 (11521)	958 (4261)	2.702	1450 (6452)	0.560
Transverse to Beam, Z±	838 (3728)	315 (1401)	2.659	477 (2121)	0.569

SolarMount (E)volution Beam Connection Hardware

SolarMount (E)volution Flange Connection Foot and Clip Part No. 04011M



- **SolarMount (E)volution Flange Connection Foot and Clip:** One of the following mill finished extruded aluminum alloys: 6005A-T61, 6351-T5, 6061-T6
Ultimate Tensile: 38 ksi
- **Flange Connection Foot and Clip:** 0.117 lbs (53 g)
- Allowable and design loads are valid when components are assembled with SolarMount (E)volution Beams according to authorized UNIRAC documents
- Flange Connection Feet are compatible with SolarMount (E)volution Beams
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual, AC 428, and test results from an IAS accredited laboratory.
- Design and allowable loads are for the beam to foot connection
- **Be sure to check load limits for roof attachments and standoffs**

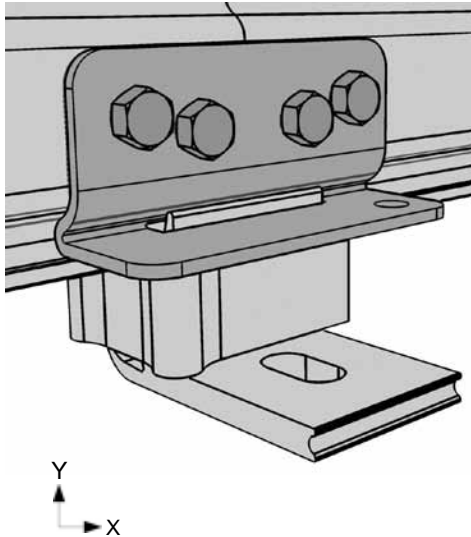


Dimensions specified in inches unless noted

Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Load lbs (N)	Resistance Factor, Φ
Tension, Y+	1894 (8425)	744 (3309)	2.545	1125 (5004)	0.594
Compression, Y-	2987 (13287)	1183 (5262)	2.525	1789 (7959)	0.599
Transverse, X-, downhill	693 (3080)	243 (1081)	2.848	368 (1636)	0.531
Transverse, X+, uphill	450 (2002)	134 (596)	3.365	202 (899)	0.449
Sliding, Z±	(see SolarMount (E)volution Beam Splice)				

SolarMount (E)volution Beam Connection Hardware

SolarMount (E)volution Beam Splice Part No. 00302M

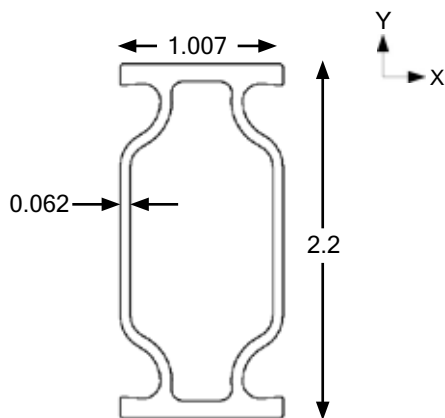


- **Beam Splice Material:** Aluminum 5052-H32
Ultimate Tensile: 31 ksi, Yield: 23 ksi
- **Beam Splice Weight:** 0.105 lbs (48g)
- Allowable and design loads are valid when components are assembled according to authorized UNIRAC documents
- Beam Splices are compatible with SolarMount (E)volution Beams when used with Flange Connector Foot
- Assemble with four (4) stainless steel self-tapping screws
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual, AC 428, and test results from an IAS accredited laboratory.

Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Load lbs (N)	Resistance Factor, Φ
Sliding, \pm	1146 (5098)	429 (1908)	2.672	649 (2885)	0.566

Dimensions specified in inches unless noted

SolarMount (E)volution Beam



SolarMount (E)volution Beam Height = 2.200"

Dimensions specified in inches unless noted

MATERIAL: One of the following extruded aluminum alloys: 6005A-T61, 6351-T5 or 6061-T6, Mill Finish		
Properties	Units	
Beam Height	in	2.200
Approximate Weight (per linear ft)	plf	0.644
Total Cross Sectional Area	in ²	0.537
Section Modulus (X-Axis)	in ³	0.3359
Section Modulus (Y-Axis)	in ³	0.1309
Moment of Inertia (X-Axis)	in ⁴	0.3695
Moment of Inertia (Y-Axis)	in ⁴	0.0659
Radius of Gyration (X-Axis)	in	0.8295
Radius of Gyration (Y-Axis)	in	0.3504