AE-SERIES COLLECTORS

Capturing a clean, renewable energy source to provide reliable products since 1975.
Crystal Clear™ Selective Coating
The Crystal Clear™ Solar Selective coating is technically a Quartz Encapsulated Bimetallic Alloy. Thousands of nanocrystalline growth projections dramatically increase the surface area of the absorber plate for maximum solar radiation absorption and performance. Crystal Clear™ has been tested for over 10000 hours at 65°F continuously with minimal visible or physical degradation of its thermal characteristics. Furthermore, Crystal Clear™ by itself enhances the thermal performance of the absorber by an additional 3%. The finished coating hosts an Absorptivity of >0.96 and Emissivity of <0.08.

THERMAFIN™ Absorbers
AET introduced THERMAFIN™ absorbers into the AE-Series collectors in 1996. Through extensive research and development, we have employed the heat transfer methods of the world today. THERMAFIN™'s high-frequency, forges weld process molecularly bonds the fin to the tube providing long-lasting performance and durability while allowing the highest heat conduction. The high-frequency welded joints will not weaken, expand, or pull apart and are backed by a written 30-year guarantee.

Baked Polyester C-Channel Construction
Our AE-Series Collector frames are fabricated in our state-of-the-art manufacturing plant located in Jacksonville, Florida. Crafted using extruded baked polyester (MD-40) electrostatic bronze painted aluminum and securely fastened with aircraft grade pin grip rivets. AE-Series Collectors are built to withstand the most demanding environments.

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<tbody>
<tr>
<td>Length (in)</td>
<td>85.187</td>
<td>97.187</td>
<td>77.187</td>
<td>85.187</td>
<td>97.187</td>
<td>121.187</td>
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<tr>
<td>Gross Area (ft²)</td>
<td>20.8</td>
<td>23.7</td>
<td>25.3</td>
<td>27.9</td>
<td>31.8</td>
<td>39.7</td>
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<tr>
<td>Transparent Area (ft²)</td>
<td>19.2</td>
<td>21.9</td>
<td>23.6</td>
<td>26.1</td>
<td>29.9</td>
<td>37.4</td>
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<tr>
<td>Dry Weight (lbs)</td>
<td>74</td>
<td>84</td>
<td>90</td>
<td>99</td>
<td>113</td>
<td>153</td>
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AE-Series Solar Collectors • Manufactured by Alternate Energy Technologies (AET), LLC
Why choose AET and AE-Series Solar Collectors?

- AET and its predecessors are based in the United States and have been manufacturing solar thermal collectors since 1975.

- AET has managers, engineers and installation experts with over 100 years of combined experience in the solar industry.

- All AE-Series collectors feature an attractive low profile skylight design.

- AET’s new energy efficient Thermatool solid-state weld head has reduced the carbon footprint of manufacturing solar collectors by 25%.

- AET is proud to provide collectors that are designed for 30+ years of dependable service and carry a full 10 year warranty.

- The AE-Series collector’s quick-lock mounting hardware is integrated into the frame wall for easy collector installation and to add to its already attractive design.

- AET collectors are built with quality components to ensure durability and performance.

- Our Crystal Clear™ selective coating is non-toxic and a more efficient electro-plating than other coating methods used in the solar industry.

AE Series Solar Collectors have been constructed to meet the major applicable national and international codes, including the following:

- Miami Testing Laboratory
  Wind Load Test (ASTM E 330)
  Certification No. 94-1028.01

- Florida Solar Energy Center
  Test Methods and Minimum Standards for Solar Collectors (ASHRAE Std 93-1986)

- Solar Rating and Certification Corporation SRCC
  Standard 100-Tested Methods and Minimum Standards for Certifying. Solar Collectors (ASHRAE Std 93-1986)

- International Association of Plumbing and Mechanical Officials (IAPMO) • Uniform Solar Energy Code (USEC)
  File No. S-5038

- Bodycote Materials Testing Canada Inc.
  Report No. 02-08-0513

- TUV Bayern Sachen e.V. (DIN 4757)
  Report No. 28600399

- Bundesforschungs - und Prufzentrum Arsenal
  ONORM M 7714- Order No. M 4 015
Glazing:
Low-Iron tempered glass, exclusively using our "High-T" tempered glass, with a total solar energy transmission of 90%.

Collector Frame and Battens:
Type 6063-T6 extruded aluminum frame and battens with electrostatic bronze plate finish that facilitates long life and strength.

Insulation:
Polyisocyanurate foam board insulation. Full-faced, glass fiber-reinforced, rigid board Thermax sheathing (1-1/4" in the bed / 3/4" in the sidewalls).

Mounting Hardware:
The variable "Quick Lock" mounting hardware reduces mounting time and makes it simple for anyone to install. The Quick Lock System allows the highest flexibility in mounting and is tested to wind load conditions of 195 mph. Mounting possibilities include: Pitched roof, Flat roof, Ground, Balcony, and Facade mounting.

Design Life: 30 Years
Warranty: 10 Years
Working Pressure: 165 PSI
Flow Rate: 0.5 to 1.8 GPM (Recommended)

Absorber Plate:
Manufactured by Thermafin™ Mfg., a 100% copper absorber plate, the fin and the riser tube are molecularly bonded by high-frequency forge welding.

Absorber Coating:
Exclusively by Thermafin™ Mfg., a Selective "Crystal Clear" Coating.
\[ \alpha = 0.96 \quad \varepsilon = 0.08 \]

Gasket Grommets:
A UV durable EPDM, U channel gasket with molded corners which prohibits water penetration and assures long life. Extruded Silicone Grommet with 1-1/8" Bore.

Corner Bracket:
Architectural aluminum angles inside with aircraft-grade pin grip rivets to ensure high stability.

Fasteners:
5056 Aluminum rivets secure the backsheet. Batten screws are 18-8 SS, 10-24 x 3/8", hex head screws, and black oxide coated.

Backsheet:
Type 3105-H14, 0.019" stucco embossed aluminum sheet (bronze) pop-riveted to aluminum frame.
CODE APPROVALS

AE-Series Collectors have been designed and constructed to meet major applicable nationwide codes, including the following:

Solar Rating and Certification Corporation
SRCC Standard 100 - Test Methods and Minimum Standards for Certifying Solar Collectors (ASHRAE Std 93-1986)

Florida Solar Energy Center - Test Methods and Minimum Standards for Solar Collectors (ASHRAE Std 93-1986)

Miami Testing Laboratory
Wind Load Test (ASTM E 3300)
Certification No. 94-1028.01

International Association of Plumbing Mechanical Official (IAPMO)
Uniform Solar Energy Code (USEC)
File No. S-5038

International Testing

Bodycote Materials Testing Canada Inc.
Report No. 02-08-0513

TÜV Bayern Sachen e.V. (DIN 4757)
Report No. 28600399

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AE-Series Collectors
Mounting Hardware Options

Rack Mount System

Flush Mount System

Standard Mount System

AE-RM

AF-FM

AE-MH

Tilt Mount Assembly

1" Aluminum Square Tube (strut)

SOLAR COLLECTOR

Tilted Installation Side View

AET's exclusive "Quick Lock" mounting systems allow for virtually any collector orientation and mounting. Collectors can be mounted to any roof, vertical wall, fascia boards, preconstructed racks or ground mount systems. The framework and mount have been certified to withstand 160 mph winds. The framework will accept the mounts anywhere around the collector without drilling or tapping, so the integrity of the framework is not violated. The rear struts can be cut to any length allowing proper elevation and orientation.