



**TOUGH TRAC™**

LOW ANGLE BALLAST PORTRAIT SYSTEM 2012



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Photo: Courtesy of [www.h2contracting.com](http://www.h2contracting.com)

*The TOUGH TRAC solution for a low angle design for Flat Roof Mounting features a ballast design for a penetration free installation.*

For applications requiring a flush look for flat roofs, the TOUGH TRAC Low Angle Ballast Portrait System features a 10 degree tilt with a penetration free ballast system.

Available with the TOUGH TRAC Standard Rail, our stock Low Angle Ballast Portrait System can be designed to all types of configured layouts.

In addition, with rear Joining Braces to another row, all systems are interlocked together to create a uniform array which prevents any row from sliding on the roof during high winds. Each ballast tray is designed to hold 12 concrete blocks from 4 - 8 inches for the required weight needed.

Consult your installer, architect, or engineer to determine your roof structure max weight loads and adequate spacing for shadowing between rows.



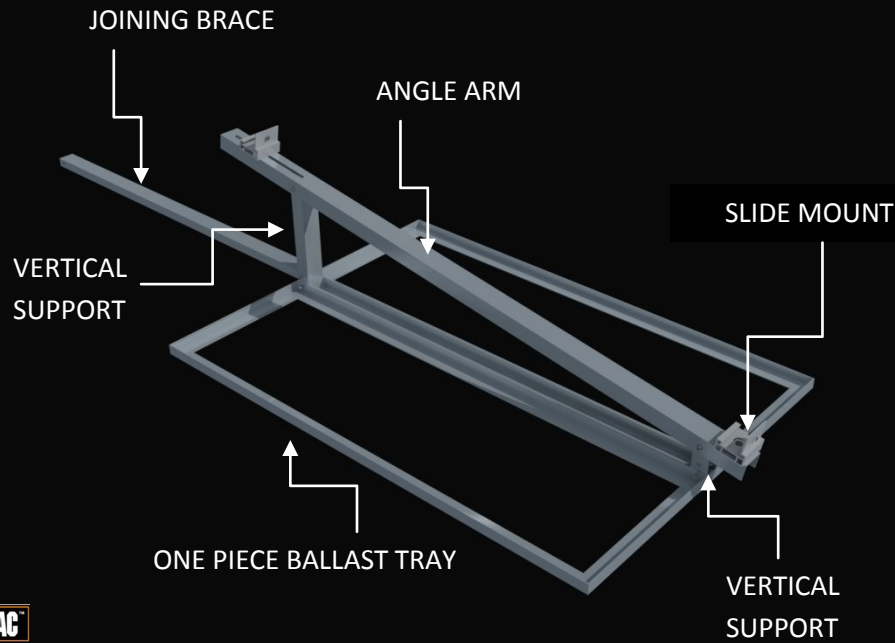
FACTORY PRODUCTION FACILITIES: Made in the USA & China

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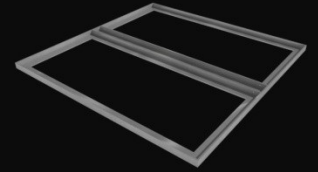
## Low Angle Ballast Portrait Section



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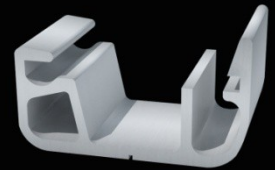
**LABPS SET PARTS**



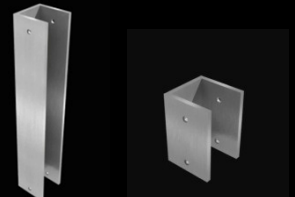
BALLAST TRAY



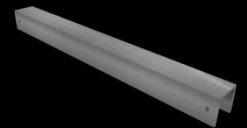
ANGLE ARM



CLICK MOUNT



VERTICAL SUPPORTS



JOINING BRACE

Standard Low Angle Ballast Portrait System comprises the following parts:

- One Piece Ballast Trays
- C Rail Angle Arms
- Click Mounts
- Front & Rear Vertical Supports
- Joining Braces
- Standard Rail
- Connector Tubes
- Top Mount End Clamps
- Top Mount Mid Clamps
- Small Square Stainless Steel Bolts with Flange Nuts
- Stainless Steel T Bolts with Flange Nuts
- 1/4" x 2.75" Stainless Steel Bolts/Washers/ Flange Nuts
- 1/4" x 2" Stainless Steel Bolts/Washers/ Flange Nuts
- Set Screws #14 x 1.5" Stainless Steel Self Tappers



RAIL BOLTS



STANDARD RAIL



CONNECTOR TUBE



TOP MID & END CLAMPS



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## Component Specifications

Aluminum Rail & Parts: 6061 & 6005 (Mill Finish)  
 Hardware Parts: 300 Series Stainless Steel  
 Ballast Tray: One Piece Welded  
 Dead Load Weight: 0.88 PSF

## Code Compliant

PE Certified  
 TUV Tested  
 ISO Certified

## Warranty

20 Years Limited Warranty

## Technical Support

Installation Manual & Videos  
 Layout Design & Bill of Materials Calculated

## Key Benefits:

- Lowest Priced MSRP in the market.
- Simple Installation and Ordering.
- Designed with One Piece Ballast Tray for easy install & can hold up to 12 blocks.
- Designed and Able to mount oversize panels. (250W – 300W)
- Designed with 8" clearance in front end to avoid snow.
- Designed to accommodate all types of layout configurations.
- Best in class spans for Standard Rail.
- Standard rail spans 96" for 120mph wind zones
- 100% all Aluminum Components and Stainless Steel Hardware.
- 20 Year Limited Warranty.
- 5.5 psf ballast weight needed for 90 mph wind zones.



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