



# Aluminum Mounting Rail LDC

For the on-roof installation of roof-parallel photovoltaic panels

## Application

The Light-Double-C (LDC) rail is designed for the PV panel installation on pantile roofs and trapezoidal metal sheet roofs with the respective Wagner & Co roof brackets and anchors.

In cases where brackets/anchors need to be set on each rafter, typical mounting rails often are oversized. In such cases the optimized geometry of the light-weight LDC rail helps to significantly reduce costs.

## General Safety Advice

### DANGER

**Risk of severe personal injury and property damage!** This document contains technical product data only and is not intended to substitute the detailed installation instructions! Make sure that before commencing any installation work and work on roofs, the respective TRIC installation instructions provided by Wagner Solar inc. are thoroughly read, understood and observed! Non compliance may render all warranties void and Wagner Solar will not accept any liabilities for resulting damages.

### DANGER

**Risk of severe personal injury and property damage!** Improperly installed solar installations may come loose during storms and fall off roofs and/or damage insufficiently stable roof structures. Always follow the respective installation instructions provided by Wagner Solar and make sure that the structural load calculations and design are in accordance with local legal and geographical requirements. Note that local requirements differ starkly depending on the respective maximum expected wind and/or snow loads! See also the sample values given in table 1 on page 2. Please inquire if you have further questions or are unsure how to proceed.

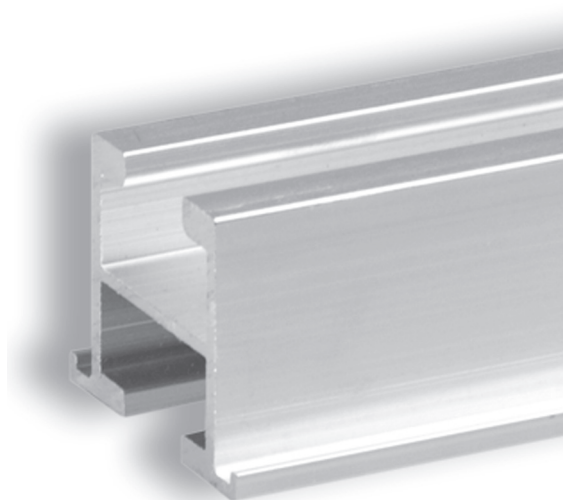


Fig. 1 Aluminum mounting rail LDC

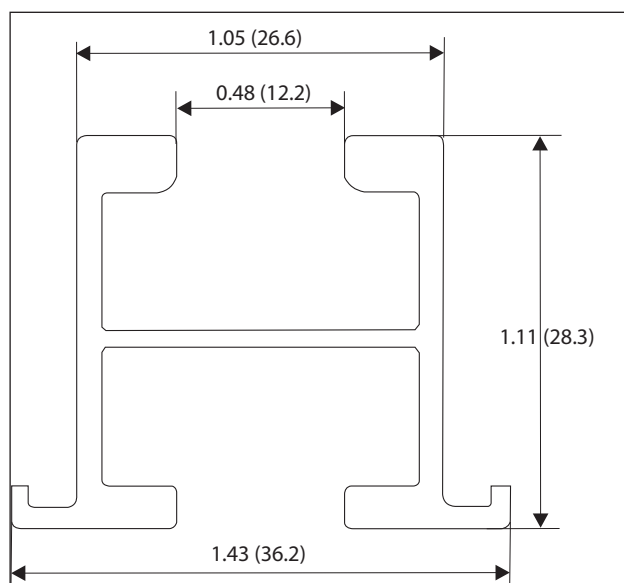


Fig. 2 Cross section with dimensions in (mm)

## Technical Data

Tab. 1 Maximum allowable span between two fixing points, depending on expected snow loads (example only!). Metric SI units in brackets.		
Snow load zone*	0 to 985 ft (0 to 300 m) altitude, Inch (mm)	985 to 1640 ft (300 to 500 m) altitude, Inch (mm)
1 $\geq$ 13.75 lb/ft <sup>2</sup> (0.65 kN/m <sup>2</sup> )	47.64 (1210)	43.7 (1110)
1a $\geq$ 16.92 lb/ft <sup>2</sup> (0.81 kN/m <sup>2</sup> )	44.1 (1120)	40.6 (1030)
2 $\geq$ 17.75 lb/ft <sup>2</sup> (0.85 kN/m <sup>2</sup> )	42.9 (1090)	34.3 (870)
2a $\geq$ 22.14 lb/ft <sup>2</sup> (81.06 kN/m <sup>2</sup> )	39.37 (1000)	31.1 (790)
3 $\geq$ 22.97 lb/ft <sup>2</sup> (1.10 kN/m <sup>2</sup> )	37.4 (950)	29.1 (740)

Building height  $\leq$  33 ft (10 m), roof pitch 30°, inland region, two horizontal rails per row of panels, installation in the "safe zone" of the roof (not in edges, corners), panel size 63 In x 31.5 In (1600 x 800 mm).

Max. allowable projection of rail over outer fixing points is 7.9 In (200 mm).

\*German EUROCODE 1 based snow load zones, absolute forces in brackets. Observe local country codes and standards! In case of doubt contact your local building authorities and the Wagner Solar technical support.

Tab. 2 Technical data (metric SI units in brackets)	
Material	Aluminum EN AW 6063 / T66
Offset yield point $R_{p0.2}$	26.11 x 10 <sup>3</sup> psi (180 N/mm <sup>2</sup> )
Length	19.69 ft (6 m)
Specific weight	0.41 lb/m (0.61 kg/m)
Cross section area	0.349 In <sup>2</sup> (225 mm <sup>2</sup> )
Allowable stress acc. to DIN 4113-1/A1:2002-09, table 4	$\sigma_{z,d}^H = 15.23 \times 10^3$ psi $\sigma_{z,d}^{HZ} = 17.4 \times 10^3$ psi ( $\sigma_{z,d}^H = 105$ N/mm <sup>2</sup> ) ( $\sigma_{z,d}^{HZ} = 120$ N/mm <sup>2</sup> )
Moments of inertia	$I_x = 0.0513$ In <sup>4</sup> $I_y = 0.0668$ In <sup>4</sup> ( $I_x = 21\,340$ mm <sup>4</sup> ) ( $I_y = 27\,796$ mm <sup>4</sup> )
Section modulus	$W_x = 0.0878$ In <sup>3</sup> $W_y = 0.1275$ In <sup>3</sup> ( $W_x = 1439$ mm <sup>3</sup> ) ( $W_y = 2090$ mm <sup>3</sup> )

### NOTICE

**Use of SI units recommended.** For sake of simplicity, precision and safety we recommend using metric SI units whenever making planning relevant calculations.

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