Multi-Tabbing

PV WIRE
Ulbrich Solar Technologies Inc. (UST) has always been a reliable development partner for the Photovoltaic Industry. The dedication to continuous innovation and product development ensures leading-edge technologies are available to various customers and partners in the Solar Industry.

The solar cell is arguably the most critical component of a solar module. The evolution to high-performance solar cells has drastically improved the power performance of PV modules making it possible to achieve module outputs > 300 watts. These new developments have resulted in the consistent achievement of new solar cell performance records.

Ulbrich Solar Technologies Inc. (UST) recognized this change in c-Si cells and adapted the Multi Bus-bar technology to strengthen its position as the innovative leader of PV Ribbon products. In addition to the standard flat PV Ribbon and our Light Capturing Ribbon (LCR), Ulbrich Solar Technologies Inc. is able to supply a full portfolio of PV Ribbon products for today’s diverse module designs.

Ulbrich’s Multi-Tabbing PV Wire offers the same high quality and product performance standards you are familiar with from all our other products we supply to the PV Industry.

We have developed a solder coating process to achieve concentric coating layers to guarantee consistent soldering results in the stringing process. The options of solder materials have been expanded to include bismuth and indium alloys, in addition to our standard SnPb alloys.

Optimized mechanical properties of the Multi-Tabbing PV Wire improve the thermo-mechanical stress situation caused by the different thermal expansion coefficients of the copper wire and silicon solar cell. Standard and custom PV Ribbon spools can be offered to fit current pay-off systems of the stringer equipment.

In summary Multi-Tabbing PV Wire is,

- Concentric solder coated round wire for high efficiency solar cell modules
- Available in lead or lead free solder materials including special low melting temperature materials
- Engineered to your unique dimension, surface coating and physical property requirements
- Manufactured with state of the art processes to ensure consistent product properties
- Precision wound and packaged for safe transportation and stringer processing
- Flexible concerning cell bond options regardless of the heat source
- Manufactured according to ISO certified processes

### Multi-Tabbing PV Wire Specification

<table>
<thead>
<tr>
<th>Base material</th>
<th>CDA 110/ETP-1</th>
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<tbody>
<tr>
<td>Dimension</td>
<td>Ø 0.200 - 0.500 ± 0.005 [mm]</td>
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<tr>
<td>Coating alloy</td>
<td>Sn60Pb40, Sn62Pb36Ag2, Sn100, Sn60Ag3Cd0.5, Sn65Cu0.5</td>
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<tr>
<td>Coating thickness</td>
<td>2.0 – 5.0 [µm]</td>
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<tr>
<td>Mechanical Properties</td>
<td>R&lt;sub&gt;µ&lt;/sub&gt; &lt; 270 [N/mm²], R&lt;sub&gt;0.2&lt;/sub&gt; &lt; 150-160 [N/mm²], A &gt; 20 [%]</td>
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<tr>
<td>Spool</td>
<td>10S, H20, K125</td>
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Customized specifications available upon request.
Ulbrich Solar Technologies, Inc. is a private company and has the same owners as Ulbrich Stainless Steels and Special Metals, Inc. Established in 1924 and now one of the world's leading processors of specialty metals. Manufacturing on three continents with a global sales and technical staff.