Our thin-film modules offer impressive features including:

- Excellent annual yields for you and your customers, using non-toxic materials
- Higher specific yields due to positive power sorting
- Good usage options on e.g. east-facing, west-facing and slightly sloping roofs
- Simple and secure installation with dovetailed mounting systems
- Solar panels do not require grounding in use Bosch Solar Rack products

Our certificates – quality stamped in writing.
Bosch Solar Energy modules go through strict quality test during the different stages of production according to international standards.
Bosch Solar Module μm-Si plus | EU1510

Permissible operating and assembly conditions:
- Temperature range –40 °C to +85 °C, humidity max. 85 % (rh)
- Upright assembly, laser lines running vertically
- Panels must be unshaded during installation and operation
- Mechanical load-bearing capacity tested up to 2 400 Pa
- Transformerless DC-AC converters are not permitted
- Reverse-current load capacity (Ir) 6 A
- Maximum 1 000 V system voltage

Temperature coefficient:
- Pmpp –0.33 %/K
- Voc –0.37 %/K
- Isc +0.08 %/K

Weak light performance:

<table>
<thead>
<tr>
<th>Intensity [W/m²]</th>
<th>Vmpp [%]</th>
<th>Impp [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>800</td>
<td>–0.9</td>
<td>–20</td>
</tr>
<tr>
<td>600</td>
<td>–2.5</td>
<td>–39</td>
</tr>
<tr>
<td>400</td>
<td>–4.8</td>
<td>–58</td>
</tr>
<tr>
<td>200</td>
<td>–8.8</td>
<td>–79</td>
</tr>
</tbody>
</table>

The electrical data applies for 25 °C and AM 1.5.

Electrical characteristics for NOCT:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>μm-Si plus 130</td>
<td>98</td>
<td>64</td>
<td>81</td>
<td>1.78</td>
<td></td>
<td></td>
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<tr>
<td>μm-Si plus 125</td>
<td>94</td>
<td>62</td>
<td>80</td>
<td>1.75</td>
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<td></td>
</tr>
<tr>
<td>μm-Si plus 120</td>
<td>90</td>
<td>60</td>
<td>80</td>
<td>1.72</td>
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</tr>
<tr>
<td>μm-Si plus 115</td>
<td>87</td>
<td>59</td>
<td>80</td>
<td>1.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>μm-Si plus 110</td>
<td>83</td>
<td>58</td>
<td>79</td>
<td>1.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>μm-Si plus 105</td>
<td>79</td>
<td>57</td>
<td>78</td>
<td>1.56</td>
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</tr>
</tbody>
</table>

NOCT: Normal Operation Cell Temperature 48 °C. Irradiation level 800 W/m², AM 1.5, temperature 20 °C, wind speed 1 m/s, electrical open circuit operation

The relevant and valid assembly instructions must be followed as mandatory. Bosch Solar Energy AG accepts no liability for damage to equipment that has been operated using modules from Bosch Solar Energy AG on the basis of information not supported by technical datasheets. Subject to technical modifications in the course of product development and mistakes/errors.

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Version: 12/2011

Dimensions:

1 Other mounting systems may have restrictions. Follow the instructions in the installation guide.
2 The relevant and valid assembly instructions must be followed as mandatory. Bosch Solar Energy AG accepts no liability for damage to equipment that has been operated using modules from Bosch Solar Energy AG on the basis of information not supported by technical datasheets. Subject to technical modifications in the course of product development and mistakes/errors.
3 Drawings and diagrams are not to scale. Detailed dimensions and tolerances are available on request.