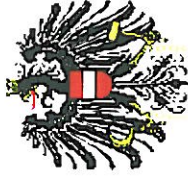




## Photovoltaic Module

# CERTIFICATE



**Certificate No.:**

59900-02-PV Issue 1 IEC

**Type reference:**

BCE 60 S|J210, BCE 60 S|J215, BCE 60 S|J220, BCE 60 S|J225,  
BCE 60 S|J230, BCE 60 S|J235, BCE 60 S|J240, BCE 60 S|J245

**Licence holder:**

Blue Chip Energy GmbH  
Europastrasse 9, 7540 Güssing, Austria

**Manufacturer:**

60575

The PV Module Types as listed have been subjected to the qualification tests according to the standard:

**IEC 61215 Ed.2.0**

**“Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval”**

Samples of the product have been tested by **OPFZ Arsenal** and found to be in conformity with the above mentioned Standard as shown in test report(s) Ref.-No(s). **2.03.02051.1.0.**

Production and manufacturing site not subjected to surveillance and did not form part of the assessment.

This certificate does not give the right to use the OVE Mark.

This certificate may be used by the manufacturer for his own purpose and is valid until 2013-08-06.




Accredited by the Austrian  
Ministry of Economy, Family and Youth

*J.A. K. Wallner*

Dipl.-Ing. W. Martin  
Head of Testing & Certification



Vienna, 2010-08-06  
Austrian Electrotechnical Association

|                                                                |                                                                                                                                                                 |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Zertifikatsinhaber</i><br><i>Licence holder</i>             | <b>Blue Chip Energy GmbH</b><br><b>Europastrasse 9</b><br><b>7540 Güssing</b><br><b>Austria</b>                                                                 |
| <i>Hersteller</i><br><i>Manufacturer</i>                       | <b>60575</b>                                                                                                                                                    |
| <i>Erzeugnis</i><br><i>Product</i>                             | <b>Terrestrische kristalline</b><br><b>Silizium-Photovoltaik- (PV) Module</b><br><br><b>Crystalline silicon terrestrial photovoltaic (PV)</b><br><b>modules</b> |
| <i>Typenbezeichnung</i><br><i>Type reference</i>               | <b>BCE 60 S J210, BCE 60 S J215, BCE 60 S J220,</b><br><b>BCE 60 S J225, BCE 60 S J230, BCE 60 S J235,</b><br><b>BCE 60 S J240, BCE 60 S J245</b>               |
| <i>Warenzeichen</i><br><i>Trade Mark</i>                       |                                                                               |
| <i>Prüfbericht</i><br><i>Test Report</i>                       | <b>2.03.02051.1.0</b>                                                                                                                                           |
| <i>Prüfgrundlagen</i><br><i>Test specification</i>             | <b>IEC 61215 Ed.2.0 (2005)</b>                                                                                                                                  |
| <i>Nationale Bestimmung(en)</i><br><i>National Standard(s)</i> | <b>ÖVE/ÖNORM EN 61215:2006-04-01</b>                                                                                                                            |
| <i>Ersatz für Zertifikat</i><br><i>Superseded licence</i>      | <b>--</b>                                                                                                                                                       |
| <i>Anmerkung(en)</i><br><i>Remark(s)</i>                       | <b>Liste kritischer Komponenten siehe Seite 3/3</b><br><br><b>List of critical components on page 3/3</b>                                                       |

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Typical average rating of crystalline silicon terrestrial photovoltaic (PV) module measured under standard test conditions (STC):

| Type<br>reference | BCE 60 SJ210 | BCE 60 SJ215 | BCE 60 SJ220 | BCE 60 SJ225 | BCE 60 SJ230 | BCE 60 SJ235 | BCE 60 SJ240 | BCE 60 SJ245 |
|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| $P_{max}$         | 210,10 W     | 215,20 W     | 220,10 W     | 225,20 W     | 230,20 W     | 235,10 W     | 240,20 W     | 245,10 W     |
| $V_{oc}$          | 36,30 V      | 36,30 V      | 36,30 V      | 36,42 V      | 36,48 V      | 36,60 V      | 36,78 V      | 37,90 V      |
| $V_{mpp}$         | 27,83 V      | 28,14 V      | 28,41 V      | 28,91 V      | 29,39 V      | 29,48 V      | 29,82 V      | 30,15 V      |
| $I_{mpp}$         | 7,549 A      | 7,648 A      | 7,748 A      | 7,790 A      | 7,832 A      | 7,974 A      | 8,054 A      | 8,131 A      |
| $I_{sc}$          | 8,478 A      | 8,478 A      | 8,478 A      | 8,493 A      | 8,508 A      | 8,569 A      | 8,602 A      | 8,634 A      |

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List of critical components:

| <i>Object</i>                                                   | <i>Manufacturer/Trademark</i>                     | <i>Type/Model/Technical data</i>                                              |
|-----------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------|
| <i>Solar cell</i>                                               | <b>Blue Chip Energy</b>                           | <b>Satndard Cell Mono<br/>6" pseudosquare</b>                                 |
| <i>Backsheet</i>                                                | <b>MA dico.Inc</b>                                | <b>Protekt HD<br/>249 ± 37 µm<br/>IEC 60664-1</b>                             |
| <i>Encapsulant</i>                                              | <b>STR</b>                                        | <b>EVA<br/>Thickness: 0,46 mm</b>                                             |
| <i>Glass</i>                                                    | <b>CSG</b>                                        | <b>Tempered glass<br/>3,2 mm</b>                                              |
| <i>Cell interconnectors</i>                                     | <b>Kunming SLT</b>                                | <b>tin-covered Soldering Strip<br/>0,15 x 2 mm</b>                            |
| <i>Solder and flux of cell<br/>interconnectors</i>              | <b>Kester</b>                                     | <b>961-E</b>                                                                  |
| <i>String interconnectors</i>                                   | <b>Kunming SLT</b>                                | <b>tin-covered Soldering Strip<br/>0,25 x 5 mm</b>                            |
| <i>Solder and flux of string<br/>interconnectors</i>            | <b>Kester</b>                                     | <b>961-E</b>                                                                  |
| <i>Tapes for fixing cells or<br/>bus bars before lamination</i> | <b>3M</b>                                         | <b>5K (Clear polyester film tape)</b>                                         |
| <i>Junction box</i>                                             | <b>Tyco</b>                                       | <b>1740699-6</b>                                                              |
| <i>Sealing material for the junction<br/>box</i>                | <b>Beijing tonsan</b>                             | <b>1527 silicon glue</b>                                                      |
| <i>Cables and connectors</i>                                    | <b>Tyco</b>                                       | <b>Cable: 1 x 4,0 mm<sup>2</sup><br/>Connectors: 0-1394462-4, 6-1394461-2</b> |
| <i>Bypass diodes</i>                                            | <b>diotech</b>                                    | <b>SB1540<br/>I<sub>FAV</sub> (A): 15 A<br/>Nr. of cells per diode: 20</b>    |
| <i>Frame</i>                                                    | <b>Nonfemet international<br/>Alminum Co.,Ltd</b> | <b>Al Frame<br/>Dimensions: 35 x 28 mm</b>                                    |
| <i>Sealing of frame</i>                                         | <b>3M</b>                                         | <b>1380 (Silicone coated polyester film with<br/>acrylic adhesive)</b>        |

*RF/ha*