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NORTHERN TERRITORY OF AUSTRALIA

STRUCTURAL ENGINEERING CERTIFICATE OF COMPLIANCE

SECA REFERENCE: 25041 – JKMXXXN-66HL4M-BDV & JKMXXXN-66QL6-BDV

Date of Issue: 16 April 2025

Date of Re-Issue: 29 May 2026 to include JKMXXXN-66QL6-BDV as per manufacturer's statement that 66HL4M & 66QL6 have the same mechanical properties.

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The Recommended Ultimate Design Strength of the Jinko **JKMXXXN-66HL4M-BDV & JKMXXXN-66QL6-BDV - 2382 x 1134 x 30mm** Solar Panel Module can resist wind force at the Limit State Design Capacity for the following support conditions:

When supported at 1200mm centres	**5.26 kPa**
When supported with 3 rails - centre and at 900mm each side of centre	**5.26 kPa**

SCOPE

Structural Engineering Consultants Australia (SECA) Pty Ltd were engaged by Alif Shahriar of Jinko Solar Australia Holdings CO Pty Ltd to carry out and witness two individual mechanical load tests (simulated static, wind load strength test). The test procedure followed was similar to the method outlined in AS4040.2:1992, Static Strength Test Regime. The testing was performed on new panels supplied by the client.

TEST PROCEDURE

The solar panel module(s) were mounted front side up and were free to deflect, this was to imitate a real-world situation. The electrical continuity or the cells themselves were not monitored during or after the tests. The load was applied by an airbag to the back of the panel and the centre deflection was monitored at 1kPa intervals as the load was applied by slowly inflating an air bag. A calibrated digital manometer was used to measure and track the test pressures, while a calibrated digital deflection meter was used to measure the centre (vertical) deflection of the solar panel.

The tests were observed by Ray Colley and Wisnu Lim on behalf of SECA in Darwin, Northern Territory. A total of six panels were tested, three supported at 1200mm centres and on three support points at the centre & 900mm each side of the centre, each test was carried out once and tested on 5th April 2025. The applied factor for variability in accordance with AS/NZS 1170.0 Table B1 when determining the allowable design capacity for 1 test unit is 1.46 and for 3 test units is 1.33.

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Test Results

Test 1:

Model: Jinko JKM590N-66HL4M-BDV, Serial Number: E4FX8A24M177501572610313

The panel **2382 x 1134 x 30mm** was mounted to the test rig with three support points: one at the centre of the panel and two supports on either side at equal **900mm** distance from the centre of the panel (supports at 291mm, 1191mm & 2091mm) with a cantilever/ overhang of approximately **291mm** at each end of the panel.

The solar panel was observed to be able to support an equivalent design test pressure of **7 kPa** with a centre vertical deflection of **73.2mm.**

Test 2:

Model: Jinko JKM590N-66HL4M-BDV, Serial Number: E4FX8A24M177501572610163

The panel **2382 x 1134 x 30mm** was mounted to the test rig with three support points: one at the centre of the panel and two supports on either side at equal **900mm** distance from the centre of the panel (supports at 291mm, 1191mm & 2091mm) with a cantilever/ overhang of approximately **291mm** at each end of the panel.

The solar panel was observed to be able to support an equivalent design test pressure of **7 kPa** with a centre vertical deflection of **74.4mm.**

Test 3:

Model: Jinko JKM590N-66HL4M-BDV, Serial Number: E4FX8A24M177501572609729

The panel **2382 x 1134 x 30mm** was mounted to the test rig with three support points: one at the centre of the panel and two supports on either side at equal **900mm** distance from the centre of the panel (supports at 291mm, 1191mm & 2091mm) with a cantilever/ overhang of approximately **291mm** at each end of the panel.

The solar panel was observed to be able to support an equivalent design test pressure of **7 kPa** with a centre vertical deflection of **73.6mm.**

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Test 4:

Model: Jinko JKM590N-66HL4M-BDV, Serial Number: E4FX8A24M177501572610091

The panel **2382 x 1134 x 30mm** was mounted to the test rig with support points at **1200mm** centres apart on each side with a cantilever/ overhang of approximately **591mm** at each end (measured from centre of supports).

The solar panel was observed to be able to support an equivalent design test pressure of **7 kPa** with a centre vertical deflection of **85.9mm.**

Test 5:

Model: Jinko JKM590N-66HL4M-BDV, Serial Number: E4FX8A24M177501572610117

The panel **2382 x 1134 x 30mm** was mounted to the test rig with support points at **1200mm** centres apart on each side with a cantilever/ overhang of approximately **591mm** at each end (measured from centre of supports).

The solar panel was observed to be able to support an equivalent design test pressure of **7 kPa** with a centre vertical deflection of **84mm.**

Test 6:

Model: Jinko JKM590N-66HL4M-BDV, Serial Number: E4FX8A24M177501572609976

The panel **2382 x 1134 x 30mm** was mounted to the test rig with support points at **1200mm** centres apart on each side with a cantilever/ overhang of approximately **591mm** at each end (measured from centre of supports).

The solar panel was observed to be able to support an equivalent design test pressure of **7 kPa** with a centre vertical deflection of **86mm.**

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Table 1: Test Summary
Recommended Ultimate Design Strength, Limit Design Capacity

Test	Panel Manufacturer, Model & Size (mm)	Support Points (mm)	Maximum Applied Load (kPa)	Material Variability Factor AS/NZS 1170.0 Table B1 – kt	Recommended Ultimate Design Strength Limit State Design Capacity (kPa)
1	**Jinko JKM590N-66HL4M-BDV** 2382 x 1134 x 30mm Serial Number: E4FX8A24M177501572610313	3 Rails End: 291mm Centre: 1191mm End: 2091mm	7.0	1.33	5.26
2	**Jinko JKM590N-66HL4M-BDV** 2382 x 1134 x 30mm Serial Number: E4FX8A24M177501572610163	3 Rails End: 291mm Centre: 1191mm End: 2091mm	7.0		
3	**Jinko JKM590N-66HL4M-BDV** 2382 x 1134 x 30mm Serial Number: E4FX8A24M177501572609729	3 Rails End: 291mm Centre: 1191mm End: 2091mm	7.0		
4	**Jinko JKM590N-66HL4M-BDV** 2382 x 1134 x 30mm Serial Number: E4FX8A24M177501572610091	1200	7.0	1.33	5.26
5	**Jinko JKM590N-66HL4M-BDV** 2382 x 1134 x 30mm Serial Number: E4FX8A24M177501572610117	1200	7.0		
6	**Jinko JKM590N-66HL4M-BDV** 2382 x 1134 x 30mm Serial Number: E4FX8A24M177501572609976	1200	7.0		

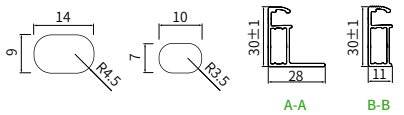
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In accordance with AS/NZS 1170.0 Table B1, where no reliable data for the co-efficient of variation of structural characteristics (Vsc) are available, a value of 10.0% maybe adopted for roof assembly cyclic testing, as recommended in Clause 6.1 of *The Draft Guide to LHL Cyclic Testing (Version 1)*, dated 9 April 2009 and issued by the Cyclone Testing Station.

66HL4M-BDV 625-650 Watt

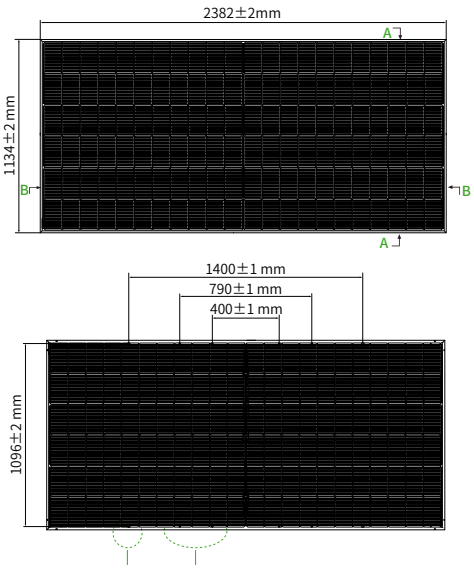
Mechanical Characteristics

Cell Type	N- type Mono-crystalline
No. of cells	132（66×2）
Dimensions	2382×1134×30 mm
Weight	32.4 kg
Front Glass	2.0 mm, Anti-reflection Coating
Back Glass	2.0 mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy



Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

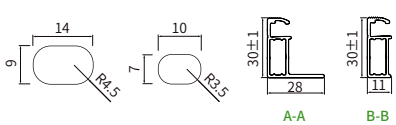
Engineering Drawings



66QL6-BDV 650-670 Watt

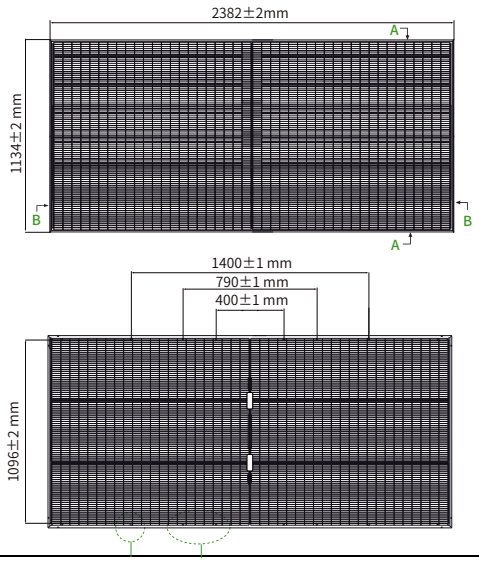
Mechanical Characteristics

Cell Type	N- type Mono-crystalline
No. of Cells	264 (66×4)
Dimensions	2382×1134×30 mm
Weight	32.5 kg
Front Glass	2.0 mm, Anti-reflection Coating
Back Glass	2.0 mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy



Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

Engineering Drawings



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Summary

The Recommended Ultimate Design Strength of the Jinko **JKMXXXN-66HL4M-BDV & JKMXXXN-66QL6-BDV** - **2382 x 1134 x 30mm** Solar Panel Module, can resist vertical wind force at the Limit State Desgin Capacity for the following support conditions:

** Refer to Appendix B: Jinko Solar Panel Mechanical Statement*
xxx = wattage of panel

When supported at 1200mm centres	**5.26 kPa**
When supported with 3 rails - centre and at 900mm each side of centre	**5.26 kPa**

Limitations

This certificate of compliance has been prepared on behalf of and for the exclusive use of Jinko Solar Australia Holdings CO Pty Ltd and forms part of the A.I.P certificate of compliance. These design capacities are only applicable for the panel size, model and support spacing as used in these tests. We accept that the wattage of the panel may vary, however this certificate is no longer valid if the any of the applicable Mechanical Properties used in the manufacture of these solar panel module or if the manufacturing processes or techniques is changed or altered in any way. It is the responsibility of the manufacturer to advise or confirm if they are altered in any way as new tests and certification will be required.

Please note: The panel fixing clamps, the support rail or their associated fixings, may limit the structural design for installation.

Ray Colley **Director** **Structural Engineering Consultants Australia Pty Ltd**			**Company NT Registration Number** 169894ES
I certify that reasonable care has been taken to ensure that the structural engineering aspects of the works as described above have been designed in accordance with the requirements of the Building Code of Australia and the Northern Territory Building Regulations			
Name **Wisnu Lim** Nominee for Structural Engineering Consultants Australia Pty Ltd	**Nominee/Individual NT Registration Number** 145651ES	**Signature**	**Date** 16 April 2025

Date of Re-Issue: 29 May 2026 to include JKMXXXN-66QL6-BDV as per manufacturer's statement that 66HL4M & 66QL6 have the same mechanical properties.

STRUCTURAL COMPONENTS OF PROJECT CONCURRED BY
Wisnu Lim 29/05/2026
BE (Civil) MIEAust NER NT RPEQ 35755 BPB 145651ES
Nominee for
Structural Engineering Consultants Australia Pty Ltd

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Appendix A

Test Results

Test Pressure	Test 1 Centre and 900mm each side of centre	Test 2 Centre and 900mm each side of centre	Test 3 Centre and 900mm each side of centre
Load Applied (kPa)	Recorded Deflection (mm)	Recorded Deflection (mm)	Recorded Deflection (mm)
1	13.0	16.9	14.7
2	24.0	29.3	26.2
3	34.1	39.2	35.7
4	43.5	47.4	44.0
5	53.9	55.3	52.4
6	63.0	63.8	62.4
7	73.2	74.4	73.6

Test Pressure	Test 4 1200mm C/C Supports	Test 5 1200mm C/C Supports	Test 6 1200mm C/C Supports
Load Applied (kPa)	Recorded Deflection (mm)	Recorded Deflection (mm)	Recorded Deflection (mm)
1	11.2	16.0	15.8
2	25.7	31.2	31.8
3	38.4	42.8	44.5
4	50.6	52.8	54.4
5	61.7	62.5	64.2
6	72.6	73.0	76.5
7	85.9	84.0	86.0

Appendix B

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Statement – Jinko Solar Panel Mechanical Properties Issue

Jinko Solar Co,. Ltd. **('Jinko Solar')** hereby confirms that the PV Modules (Module type: See below list) share the same panel size 2382×1134×30mm and similar BOMs for applicable Mechanical Properties.

- JKMxxxN-66QL6-BDV (XXX= 650W-670W)
- JKMxxxN-66HL4M-BDV (XXX=620W-650W)

** BDV- stands for Bifacial Dual Glass module property;*

The wattage and efficiency of each PV Module may vary, however Jinko Solar confirms the applicable Mechanical Properties used during the manufacture of the PV modules and the Manufacturing Process and techniques have been not changed or altered in any way.

If you have any questions regarding the above statement, please contact with Jinko Solar Technical Support Team.

Add: Suite 23.02 ,171 Sussex St, Sydney NSW 2000Contact Number: 1300 326 182
Email: aus@jinkosolar.com Web: www.jinkosolar.com.au

Yours sincerely,

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RE 100

Jinko Tech Team Support

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1 / 1