

NQR256A Back Contact

Best Off-Grid Solution



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Use Case: Off-Grid with 12-Volt Battery

Comparison SHARP 48-cell module vs. standard 36-cell module

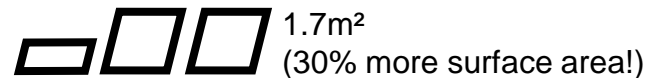
Sharp 48-cell module

Nominal power	256 W
Efficiency	19,82 %
No. of cells	48
V_{mpp}	27,53 V
I_{mpp}	9,30 A
V_{oc}	32,49 V
P_{max}	-0,377 %/°C
I_{sc}	9,95 A
Dimensions	1318 * 980 * 46 mm

Standard 36-cell module

Nominal power	100 W
Efficiency	14,7 %
No. of cells	36
V_{mpp}	18,5 V
I_{mpp}	5,4 A
V_{oc}	22,8 V
P_{max}	-0,42%/°C
I_{sc}	5,7 A
Dimensions	1315 * 518 * 35 mm

One Sharp 48-cell module can replace 2.5 standard 36-cell modules:



- To hit the same output of the SHARP 48-cell module (256W), 2.5 standard 36-cell modules are needed. The required area for the 36-cell modules is higher by the factor of 1.3.
- At high temperatures, the voltage of the 36-cell module may drop below the required battery charging voltage. The result is a lower battery charge over the year.
- Due to the higher Mpp voltage of the SHARP 48-cell module and the lower temperature coefficient, the SHARP module achieves higher yields in warmer environments.
- SHARP recommends using MPP trackers to charge 12V batteries. Mpp trackers are e.g. offered by Stecca und Phocos.

Use Case: Off-Grid with 24-Volt Battery

Most 60-cell modules are not usable for 24-volt systems

Sharp 48-cell module

Nominal power	256 W
Efficiency	19,82 %
No. of cells	48
Vmpp	27,53 V
Impp	9,30 A
Voc	32,49 V
Pmax	-0,377 %/°C
Isc	9,95 A
Dimensions	1318 * 980 * 46 mm

Standard 60-cell module

Nominal power	275 W
Efficiency	16,5 %
No. of cells	60
Vmpp	30,9 V
Impp	8,73 A
Voc	38,4 V
Pmax	-0,42%/°C
Isc	9,18 A
Dimensions	1650 * 941 * 46 mm

Two SHARP 48-cell modules charge a 24-volt battery to 100%:

100%   512 W

80-90%   270 W

- With a 60-cell module, a 24-volt battery is not fully charged to 100%. An off-grid system with a 24-volt battery requires a Mpp voltage of approx. 37 volts at least. However, a standard 60-cell module is only about 30 volts.
- Two SHARP 48-cell modules in series deliver 512 watts and a Mpp of 55 volts with an area of 2.6m². Two 60-cell modules are above 3.3 m². With two SHARP 48-cell modules, an off-grid 24V battery system can be properly charged.
- In combination with a MPP tracker, the highest efficiency is achieved. SHARP recommends using Mpp trackers to charge 24-volt systems. Various Mpp trackers are available on the market, among those Stecca oder Phocos.

Conclusion

- ✓ The SHARP NQR256A 48-cell module is the ideal module for repowering existing 36-cell systems as well as for new installations in the 12-volt range.
- ✓ The 48-cell SHARP is suitable for 12- and 24-volt systems.
- ✓ In combination with a Mpp tracker it achieves the highest annual yields /m² in in off-grid systems.
- ✓ Due to the lower temperature coefficient compared to standard modules, the SHARP 48-cell module achieves higher output in the course of the year.
- ✓ Strong mechanical design: Two support bars on the back of the module withstand the strongest environmental conditions.

Thank you

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