

Pairing IQ8+, IQ8M, IQ8A and IQ8H Microinverters with higher current modules having $I_{MP} > 12A$

Pairing IQ8+, IQ8M, IQ8A and IQ8H Microinverters with higher current modules having $I_{MP} > 12A$

Summary:

PV module and microinverter selection are two of the most important decisions in PV system design. Ensuring that these components work together is important from a technical, reliability, and economic standpoint. PV modules have started using larger-sized PV cells, which result in higher wattage and higher DC current (I_{MP}) at the module's maximum performance point (MPP). The tables suggest suitable microinverters for pairing with such higher current PV modules based on DC/AC ratio and solar irradiance.

SUGGESTED IQ8 MICROINVERTERS (IQ8PLUS/ IQ8M/IQ8A/IQ8H) FOR PV MODULES HAVING $I_{MP} > 12 A$				
REGION	PV MODULE POWER			
	400 W	410 W	425 W	440 W
Arizona (Phoenix)	IQ8M	IQ8A	IQ8A	IQ8H
New York (New York City)	IQ8M	IQ8M	IQ8A	IQ8A
Minnesota (Minneapolis)	IQ8M	IQ8A	IQ8A	IQ8A
California (Los Angeles)	IQ8A	IQ8A	IQ8A	IQ8H
Texas (Dallas)	IQ8M	IQ8M	IQ8A	IQ8A
Florida (Miami)	IQ8M	IQ8M	IQ8A	IQ8A
Hawaii (‘Ōma‘opio)	IQ8M	IQ8M	IQ8M	IQ8A
Colorado (Denver)	IQ8A	IQ8A	IQ8A	IQ8H
Puerto Rico (San Juan)	IQ8+	IQ8M	IQ8M	IQ8A

NOTE:

These results are based on the first-year simulation data. The simulations were run using PVsyst.

The parameters considered in the simulation are:

- Tilt - 30° for all locations, except for Puerto Rico (San Juan)
- Tilt - 10° for Puerto Rico (San Juan)
- Azimuth - 180°
- The weather file used is NSRDB TMY3.

Suggested microinverter pairing with popular U.S. PV modules

MODULE MAKE	MODEL	CELL	POWER (W)	I_{MP} (A)	I_{SC} (A)	V_{MP} (V)	V_{OC} (V)	ARIZONA, CALIFORNIA, COLORADO	FLORIDA, NEW YORK	MINNESOTA, TEXAS	HAWAII, PUERTO RICO
Hanwha	QTron M G2	108 HC	420	13.4	14	31.4	37.3	IQ8A	IQ8M	IQ8A	IQ8M
	G11	108 HC	400	12.8	13.4	31.2	37.1	IQ8A	IQ8M	IQ8M	IQ8+
JA Solar	JAM54D40/LB	108 HC	455	13.2	14.1	31.8	37.6	IQ8A	IQ8M	IQ8A	IQ8M
	JAM54S30/LR	108 HC	440	13.2	14.1	32	38.2	IQ8A	IQ8A	IQ8A	IQ8M
	JAM54D30	108 HC	425	13.6	14.4	32.6	39.1	IQ8H	IQ8H	IQ8H	IQ8A
	JAM54S30	108 HC	420	13.5	14.3	32.4	37.3	IQ8H	IQ8A	IQ8A	IQ8A
Maxeon	MAX 3	112 HC	430	12.3	13.2	35.1	40.7	IQ8A	IQ8A	IQ8A	IQ8M
Canadian Solar	Hiku6	108 HC	420	13.3	14.2	31.6	37.6	IQ8A	IQ8M	IQ8A	IQ8M
	HiHero	108 HC	430	12.3	13.2	34.7	40.9	IQ8A	IQ8A	IQ8A	IQ8M
Longi	HiMo 5m	108 HC	425	13.3	14	31.9	37.9	IQ8A	IQ8A	IQ8A	IQ8M
	HiMo 5m	108 HC	420	13.1	13.9	31.9	37.8	IQ8A	IQ8M	IQ8A	IQ8M
Siflab	Prime	108 HC	430	12.9	13.9	33.3	38.9	IQ8A	IQ8A	IQ8A	IQ8M
Jinko	Tiger Pro 54HC	108 HC	420	13.5	14.1	30.9	37.4	IQ8A	IQ8M	IQ8A	IQ8M
	Tiger Pro 60HC	120 TC	460	13.4	14	34.2	41.4	IQ8H	IQ8H	IQ8H	IQ8A
	Eagle 54	108 HC	440	13.3	13.8	33	39.6	IQ8H	IQ8A	IQ8A	IQ8A
Solaria	Power X	108 HC	400	12.9	13.6	31	37.3	IQ8A	IQ8M	IQ8M	IQ8+

Revision history

REVISION	DATE	DESCRIPTION
MKT-00727-1.0	May 2024	Initial release.

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