ENPHASE.

IQ8+, IQ8M, and IQ8A Microinverters

simulation with higher current modules having I_{MP} >12 A

VERSION 1.0
FEBRUARY 2024

Clipping matrix of IQ8+, IQ8M, and IQ8A Microinverters with higher current PV modules having I_{MP} >12 A

CLIPPING MATRIX - IQ8 vs PV MODULES HAVING I_{MP} >12 A												
PV module power	400 W			410 W			425 W			440 W		
Region/Microinverter	IQ8+	IQ8M	IQ8A	IQ8+	IQ8M	IQ8A	IQ8+	IQ8M	IQ8A	IQ8+	IQ8M	IQ8A
Arizona (Phoenix)												
New York (New York City)												
Minnesota (Minneapolis)												
California (Los Angeles)												
Texas (Dallas)												
Florida (Miami)												
Hawaii (ʻŌmaʻopio)												
Colorado (Denver)												
Puerto Rico (San Juan)												

Legend
2% < Clipping <= 6%
1% < Clipping <= 2%
Clipping <= 1%

Summary:

Below are the suggested microinverters for different power level of PV modules:
Power < 410W, IQ8M Microinverter is suggested.
410 W<= Power < 440 W, IQ8A Microinverter is suggested.
Power >= 440 W, IQ8H Microinverter is suggested.

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.

February 2024
MKT-00727-1.0

Suggested microinverter pairing with top U.S. PV modules

PV Module MANUFACTURER	MODEL	CELL	POWER (W)	I_{MP} (A)	I_{SC} (A)	V_{MP} (V)	V_{OC} (V)	SUGGESTED MICROINVERTER
Hanwha	Q.Tron M G2	108 HC	420-430	13.43	14	31.43	37.3	IQ8A
	G11	108 HC	380-400	12.82	13.41	31.21	37.18	IQ8PLUS/IQ8M
	G10	132 HC	385-405	10.8	11.2	37.4	45.3	IQ8M
	Q.Tron G1+	120 HC	375-390	10.9	11.3	35.7	41.5	IQ8PLUS/IQ8M
JA Solar	JAM54S30	108 HC	395-420	13.21	14.1	31.8	37.6	IQ8M/IQ8A
	JAM54D30	108 HC	400-425	13.28	14.16	32.01	38.2	IQ8M/IQ8A
	JAM54D40/LB	108 HC	435-455	13.63	14.4	32.65	39.1	IQ8A/IQ8H
	JAM54S30/LR	108 HC	415-440	13.58	14.33	31.3	37.37	IQ8A/IQ8H
Maxeon	P6	270 1/6 C into 5 branches	415-425	13.8	14.8	30.8	36.4	IQ8A
REC	Alpha Pure-R	80 HC	400-430	8.52	8.97	50.5	59.7	IQ8X
	Twin Peak 5	132 HC	390-410	10.7	11.5	38.3	45.2	IQ8PLUS/IQ8M
Canadian Solar	Hiku6	108HC	395-420	13.3	14.2	31.6	37.6	IQ8M/IQ8A
	HiKu 5	132 HC	400-425	11.3	11.8	38.3	45.5	IQ8M/IQ8A
	HiHero	108 HC	405-430	12.38	13.21	34.7	40.9	IQ8M/IQ8A
	Hiku Mono	144 HC	435-465	11.2	11.8	41.7	49.7	IQ8A/IQ8H
	HiKu6	108HC	395-420	13.31	14.17	31.6	37.6	IQ8M/IQ8A
Longi	HiMo 4	120 HC	355-385	11	11.8	33.9	41.3	IQ8PLUS
	HiMo4m	132 HC	405-425	11.02	11.81	38.6	45.8	IQ8M/IQ8A
	HiMo 5m	108HC	405-425	13.31	14.08	31.94	37.96	IQ8M/IQ8A
	HiMo 5m	108HC	400-420	13.17	13.97	31.9	37.89	IQ8M/IQ8A
Silfab Solar	SIL370HC	120 HC	370	10.7	11.25	34.7	41.75	IQ8PLUS
	SIL360/380	120 HC	360-380	10	10.5	38	45	IQ8PLUS
	SIL410/420	66	410-420	11.1	11.6	37.8	46	IQ8M/IQ8A
Panasonic	EverVolt	120 HC	420-430	10.05	10.81	42.8	49	IQ8A
	HJT	132 HC	390-410	9.6	10.3	42.7	49	IQ8M
	EverVolt	60 FC	390-400	12.96	13.6	30.8	36.9	IQ8M
Trina	Vertex S	120 TC	380-400	11.7	12.28	34.2	41.2	IQ8M
	Vertex S+	144 HC	410-435	9.99	10.65	43.6	51.8	IQ8M/IQ8A
LG	Neon 2	60 cells	395-405	9.89	10.51	41	49.4	IQ8M
	Neon R	60 cells	360-375	10.09	10.83	37.2	42.8	IQ8PLUS
Jinko	Tiger Pro 54HC	108 HC	400-420	13.59	14.12	30.91	37.43	IQ8M/IQ8A
	Tiger Pro 60HC	120 TC	440-460	13.45	14.01	34.2	41.48	IQ8H
Solaria	Power X	108 HC	390-400	12.9	13.68	31	37.3	IQ8M

Revision history

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

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