










PV modules comparison 2023

Manufacturer	Series	Product / performance guarantee (a)	Annual power loss (% / a)	Max. Power (Wp)	Power Output Tolerance	Efficiency (%)	Temp. coefficient (% / °C)	Cell type	Cell technology	Bifacial	Half-cut	Optimizers	Backsheet	Glass/Glass	Snow load (Pa)	Wind load (Pa)	Weight (kg)
 EGING PV	Star Series	12 / 25	0.53	390 – 410	+ 3 %	19.97 – 20.99	- 0.35	p-Type	PERC	-	Half-cut	-	White	-	5,400	2,400	20.2
	Tiger Neo N-Type 54HL4	15 / 30	0.40	415 – 425	+ 3 %	21.25 – 21.76	- 0.30	n-Type	TopCon	-	Half-cut	-	White	-	5,400	2,400	22.0
	Tiger Neo N-Type 54HL4R			435 – 440		21.77 – 22.02	- 0.29						Black		6,000	4,000	
	Tiger Neo N-Type 54HL4R Black	25 / 30		425 – 435		21.27 – 21.77	- 0.34		White				5,400		2,400	19.0	
	Tiger N-Type 60TR	15 / 30		370 – 380		21.25 – 21.54	- 0.34		Tailing Ribbon				5,400		2,400	19.0	
	Niwa Black Series	15 / 30*	0.40	400 – 420	+ 5 W	20.48 – 21.51	- 0.30	n-Type	TopCon	✓	Half-cut	-	Black	✓	5,400	2,400	24.5
	Niwa Pro Series			410 – 430		21.00 – 22.02	- 0.31						Transparent / Hatched white				24.5
	JW-HD-120N			380 – 390		20.83 – 21.38	- 0.31						23.0				
	Hi-MO 5m LR5-54 HIH	12 / 25	0.55	400 – 420	+ 3 %	20.50 – 21.50	- 0.34	p-Type	PERC	-	Half-cut	-	White	-	5,400	2,400	20.8
	Meyer Burger Black	30 / 30	0.20	375 – 395	+ 5 W	20.40 – 21.50	- 0.259	n-Type	HJT	-	Half-cut	-	Black	-	5,400	2,400	19.7
	Meyer Burger Glass	25 / 25	370 – 390	20.60 – 21.80		Transparent							✓				24.4
	Meyer Burger White		380 – 400	20.70 – 21.70		White							-				19.7
	Smart Module	25 / 25	-	370 – 375	+ 5 W	19.80 – 20.07	- 0.364	n-Type	PERC	-	Halfcut	✓	White	-	5,400	2,400	22.0
	Smart Module Black			360 – 370		19.27 – 20.31							Black				
	Mono S4 Halfcut	15 / 25	-	405 – 415	+ 3 %	20.19 – 21.43	- 0.33	p-Type	PERC	-	Half-cut	-	White	-	5,400	2,400	21.2
	Mono S4 Halfcut Black			405 – 410		20.74 – 21.00			PERC				Black				21.4
	Mono S4 - Innovation Powerline N	30 / 30		415 – 425		21.30 – 21.80		- 0.30	n-Type	-	✓	Transparent	✓	23.4			
	Maxeon 3	25 / 25**	0.25	415 – 430	+ 5 %	21.90 – 22.70	- 0.27	n-Type	Maxeon	-	-	-	White	-	5,400	2,400	19.7
	Maxeon 3 Black			410 – 420		21.60 – 22.20							Black				
	Vertex S	15 / 25	0.55	390 – 405	+ 5 W	20.30 – 21.10	- 0.34	p-Type	PERC	-	1/3-cut cells	-	White	-	6,000	4,000	21.0
	Vertex S Black			Black													
	Vertex S (R)			White													
	Vertex S (R) Black			Black													
	Vertex S +	25 / 30	0.40	400 – 425	20.60 – 21.90	- 0.30	n-Type	TopCon	White	✓	5,400	21.5					
	Vertex S + (R)			425 – 445	21.30 – 22.30				White	21.1							

* Product guarantee depending on installation site: 15a for PV installations on open areas, 25a for PV roof installations
 ** Extendable to 40 years each

