

TECHNICAL SPECIFICATIONS

Electrical Characteristics *	HS-210 / WU-210	HS-220 / WU-220
Power (Pm) in Watts (nominal)	210	220
Open Circuit Voltage (Voc) in Volts	36	36
Short Circuit Current (Isc) in Amps	7.78	8.15
Voltage at Maximum Power (Vmp) in Volts	29	29
Current at Maximum Power (Imp) in Amps	7.24	7.59
Maximum System Voltage	1000V / 600V	
Physical Parameters (Refer drawing below)		
Solar Cells per Module (Units)	60	
Length x Width x Thickness (L x W x T)	mm(Inches) 1660 X 990 X 42 (65.4 x 39.0 x 1.7)	
Mounting Holes Pitch (Y) - mm	mm(Inches) 1000 (39.4)	
Mounting Holes Pitch (X) - mm	mm(Inches) 945(37.2)	
Area - Sq. Meter / Area - Sq. ft.	1.643(17.67)	
Junction Box	IP 65 with Diodes	
Weight - Kg	20.50	
Container Packing Details	40 feet Container - 644 Modules 20 feet Container - 300 Modules	
Certifications: IEC 61215 / IEC 61730 -1 / IEC 61730 -2/ TÜV Safety Class II & ETL Mark for UL 1703 approval (USA & CANADA); CEC listed		

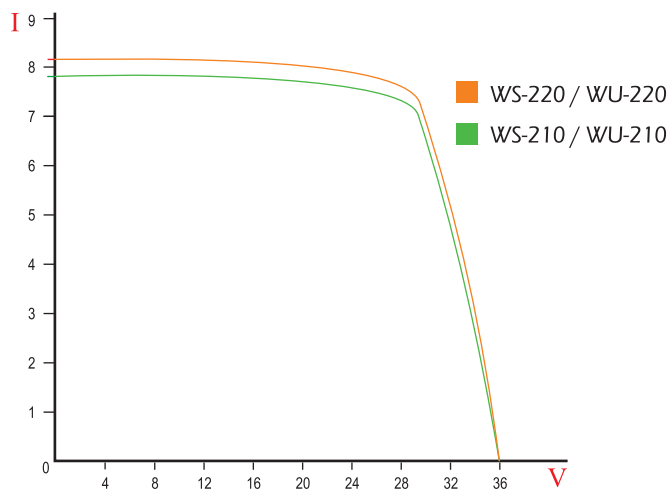


*Measurement Tolerance on Power +/- 3%. All electrical parameters specified at STC : 25°C cell temperature; 100mW/cm² irradiance; AM 1.5

Other Characteristics

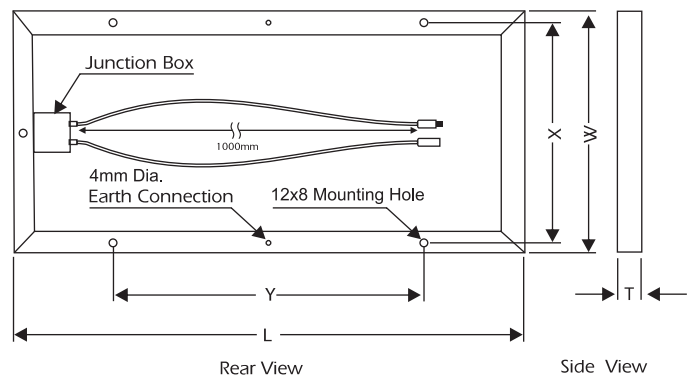
Type of Cell : Mono / Multi Crystalline Silicon
 Front Face : Tempered Glass (Low Iron)
 Encapsulate : Ethylene Vinyl Acetate
 Frame : Anodized Aluminium
 Junction Box : Weather Proof Nylon 6
 Temp. Coefficients : Voltage -0.123 V / °K
 Current +4.4 mA / °K
 Power -0.47% / °K
 NOCT : 47+/-2 °C

- All modules of 180Wp and above are supplied with pre-fixed cables and connectors.
- All modules are supplied with screwless Hollow section frames.
- Warranty : Up to 25 Years Limited Extended Warranty
- Due to constant product modifications, WAAREE reserves the right to amend the above specifications without prior notice.



Mounting Details

All dimensions in mm and tolerances ±2mm



TECHNICAL SPECIFICATIONS

Electrical Characteristics *	HS-230 / WU-230	HS-240 / WU-240
Power (Pm) in Watts (nominal)	230	240
Open Circuit Voltage (Voc) in Volts	36	36
Short Circuit Current (Isc) in Amps	8.52	8.89
Voltage at Maximum Power (Vmp) in Volts	29	29
Current at Maximum Power (Imp) in Amps	7.93	8.28
Maximum System Voltage	1000V / 600V	
Physical Parameters (Refer drawing below)		
Solar Cells per Module (Units)	60	
Length x Width x Thickness (L x W x T) mm(Inches)	1660 X 990 X 42 (65.4 x 39.0 x 1.7)	
Mounting Holes Pitch (Y) - mm mm(Inches)	1000 (39.4)	
Mounting Holes Pitch (X) - mm mm(Inches)	945(37.2)	
Area - Sq. Meter / Area - Sq. ft.	1.643(17.67)	
Junction Box	IP 65 with Diodes	
Weight - Kg	20.50	
Container Packing Details	40 feet Container - 644 Modules 20 feet Container - 300 Modules	
Certifications: IEC 61215 / IEC 61730 - 1 / IEC 61730 - 2/ TÜV Safety Class II & ETL Mark for UL 1703 approval (USA & CANADA); CEC listed		

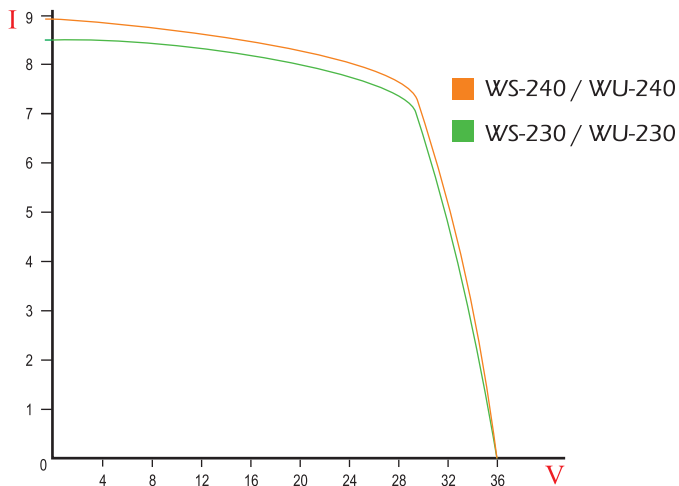


*Measurement Tolerance on Power +/- 3%. All electrical parameters specified at STC : 25°C cell temperature; 100mW/cm² irradiance; AM 1.5

Other Characteristics

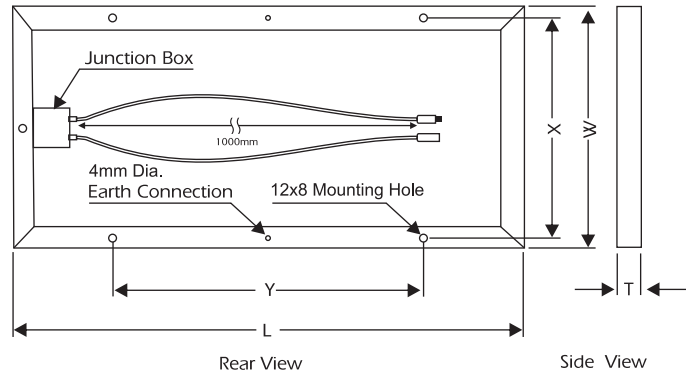
Type of Cell	: Mono / Multi Crystalline Silicon
Front Face	: Tempered Glass (Low Iron)
Encapsulate	: Ethylene Vinyl Acetate
Frame	: Anodized Aluminium
Junction Box	: Weather Proof Nylon 6
Temp. Coefficients	: Voltage -0.123 V / °K Current +4.4 mA / °K Power -0.47% / °K
NOCT	: 47+/-2 °C

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Electrical Characteristics *	WE-3A	WE-3	WE-5A	WE-5	WE-8	WE-10/WS-10	WE-12	WE-15	WE-18	WE-20/WS-20	WE-25	WE-30/WS-30	WE-35	WE-37
Power (Pm) in Watts (nominal)	3	3	5	5	8	10	12	15	18	20	25	30	35	37
Open Circuit Voltage (Voc) in Volts	10.00	21.00	10.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
Short Circuit Current (Isc) in Amps	0.38	0.19	0.61	0.30	0.50	0.61	0.71	0.96	1.07	1.20	1.48	2.00	2.28	2.30
Voltage at Maximum Power (Vmp) in Volts	8.80	17.00	8.80	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
Current at Maximum Power (Imp) in Amps	0.34	0.18	0.57	0.29	0.47	0.59	0.71	0.88	1.06	1.18	1.47	1.76	2.06	2.18
Maximum System Voltage	600V	600V	600V	600V	600V	600V	600V	600V	600V	600V	600V	600V	600V	600V
Physical Parameters (Refer drawing below)														
Solar Cells per Module (Units)	18	36	18	36	36	36	36	36	36	36	36	36	36	36
Length x Width x Thickness (L x W x T)	mm	185 x 185 x 22	255 x 185 x 22	290 x 185 x 22	250 x 350 x 22	300 x 350 x 22	325 x 350 x 22	395 x 350 x 22	460 x 350 x 22	485 x 350 x 22	630 x 345 x 22	740 x 345 x 22	485 x 675 x 35	485 x 675 x 22
	Inches	7.3 x 7.3 x 0.8	10.0 x 7.3 x 0.8	11.4 x 7.3 x 0.8	9.8 x 13.8 x 0.8	11.8 x 13.8 x 0.8	12.8 x 13.8 x 0.8	15.5 x 13.8 x 0.8	18.1 x 13.8 x 0.8	19.1 x 13.8 x 0.8	20.8 x 13.5 x 0.8	29.1 x 13.5 x 0.8	19.1 x 26.6 x 1.4	19.1 x 26.6 x 0.8
Weight - Kg		0.65	0.75	0.85	0.85	1.35	1.55	1.75	1.95	2.10	2.65	3.30	4.25	4.25
Mounting Holes Pitch (Y)	mm(Inches)	92.50 (3.6)	127.50 (5.0)	145 (5.7)	130(5.1)	145(5.7)	165(6.5)	195(7.7)	240(9.4)	245(9.6)	330(13.0)	380(15.0)	245(9.6)	245(9.6)
	mm(Inches)	155(6.1)	155(6.1)	155(6.1)	322(12.7)	322(12.7)	322(12.7)	322(12.7)	322(12.7)	322(12.7)	318(12.5)	318(12.5)	624(24.6)	624(24.6)
Area - Sq. M / Area - Sq. ft.		0.03(0.32)	0.05(0.54)	0.05(0.54)	0.09(0.97)	0.105(1.13)	0.14(1.51)	0.16(1.72)	0.17(1.83)	0.22(2.37)	0.26(2.80)	0.26(2.80)	0.38(4.09)	0.38(4.09)
Junction Box		IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65

*Measurement Tolerance on Power +/- 5%. All electrical parameters specified at STC : 25°C cell temperature; 100mW/cm² irradiance; AM 1.5

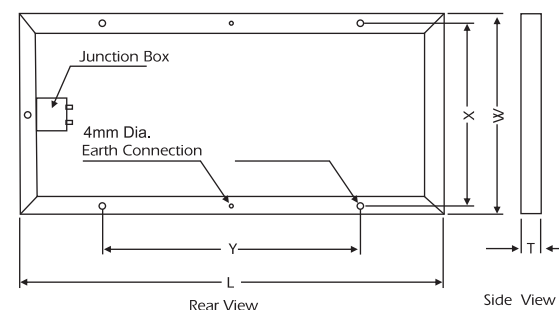
Other Characteristics

Type of Cell : Mono / Multi Crystalline Silicon
 Front Face : Tempered Glass (Low Iron)
 Encapsulate : Ethylene Vinyl Acetate
 Frame : Anodized Aluminium
 Junction Box : Weather Proof Nylon 6
 Temp. Coefficients : Voltage -0.123 V / °K
 Current +4.4 mA / °K
 Power -0.47% / °K
 NOCT : 47+/-2 °C

- Certifications: IEC 61215 / IEC 61730 -1 / IEC 61730 – 2 / TÜV Safety Class II
- The Standard range of modules is supplied without diodes. However, diodes can be provided on specific customer request at extra cost.
- All modules are supplied with screwless Hollow section frames.
- Warranty : Up to 25 Years Limited Extended Warranty
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Mounting Details

All dimensions in mm and tolerances ±2mm



* Mounting Hole: upto 30Wp 6mm dia.
 35Wp & 37Wp 12x8 mm

TECHNICAL SPECIFICATIONS

Electrical Characteristics *	HS-120/WU-120	HS-125/WU-125	HS-130/WU-130	HS-140/WU-140	HS-150	HS-160
Power (Pm) in Watts (nominal)	120	125	130	140	150	160
Open Circuit Voltage (Voc) in Volts	21	21	21	21	43	43
Short Circuit Current (Isc) in Amps	7.62	7.94	8.25	8.89	4.65	4.96
Voltage at Maximum Power (Vmp) in Volts	17	17	17	17	35	35
Current at Maximum Power (Imp) in Amps	7.06	7.35	7.65	8.24	4.29	4.57
Maximum System Voltage	1000V/600V	1000V/600V	1000V/600V	1000V/600V	1000V	1000V
Physical Parameters (Refer drawing below)						
Solar Cells per Module (Units)	36	36	36	36	72	72
Length x Width x Thickness (L x W x T)	mm(Inches)	1490 x 675 x 35 (58.7 x 26.6 x 1.4)			1175 x 990 x 35(46.3 x 39.0 x 1.4)	
Weight - Kg	11.75	11.75	11.75	11.75	14.45	14.45
Mounting Holes Pitch (Y)	mm(Inches)	915(36.0)			595(23.4)	
Mounting Holes Pitch (X)	mm(Inches)	627(24.7)			945(37.2)	
Area - Sq. M / Area - Sq. ft.		1.009(10.86)			1.163(12.52)	
Junction Box	IP 65 with Diodes	IP 65 with Diodes	IP 65 with Diodes	IP 65 with Diodes	IP 65 with Diodes	IP 65 with Diodes

*Measurement Tolerance on Power +/- 5%. All electrical parameters specified at STC : 25°C cell temperature; 100mW/cm² irradiance; AM 1.5

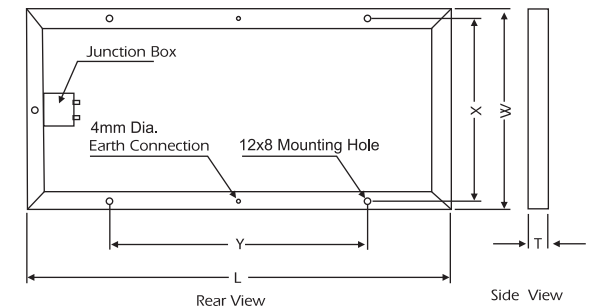
Other Characteristics

Type of Cell : Mono / Multi Crystalline Silicon
 Front Face : Tempered Glass (Low Iron)
 Encapsulate : Ethylene Vinyl Acetate
 Frame : Anodized Aluminium
 Junction Box : Weather Proof Nylon 6
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 Current +4.4 mA / °K
 Power -0.47% / °K
 NOCT : 47+/-2 °C

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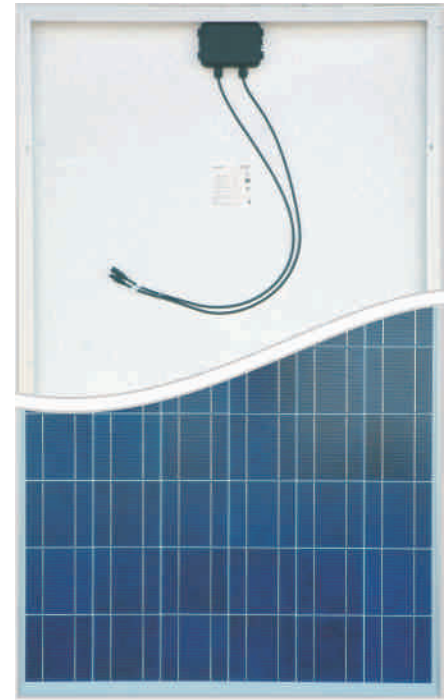
Mounting Details

All dimensions in mm and tolerances ±2mm



TECHNICAL SPECIFICATIONS

Electrical Characteristics *	HS-175/WU-175	HS-180/WU-180	HS-190/WU-190	HS-200/WU-200
Power (Pm) in Watts (nominal)	175	180	190	200
Open Circuit Voltage (Voc) in Volts	32	32	32	32
Short Circuit Current (Isc) in Amps	7.29	7.50	7.92	8.33
Voltage at Maximum Power (Vmp) in Volts	26	26	26	26
Current at Maximum Power (Imp) in Amps	6.73	6.92	7.3	7.69
Maximum System Voltage	1000V / 600V			
Physical Parameters (Refer drawing below)				
Solar Cells per Module (Units)	54			
Length x Width x Thickness (L x W x T)	mm(Inches)			
Mounting Holes Pitch (Y) - mm	mm(Inches)			
Mounting Holes Pitch (X) - mm	mm(Inches)			
Area - Sq. Meter / Area - Sq. ft.	1.475(15.9)			
Junction Box	IP 65 with Diodes			
Weight - Kg	17.5			
Container Packing Details	40 feet Container - 690 Modules			
	20 feet Container - 322 Modules			
Certifications: IEC 61215 / IEC 61730 -1 / IEC 61730 -2/ TÜV Safety Class II & ETL Mark for UL 1703 approval (USA & CANADA); CEC listed				

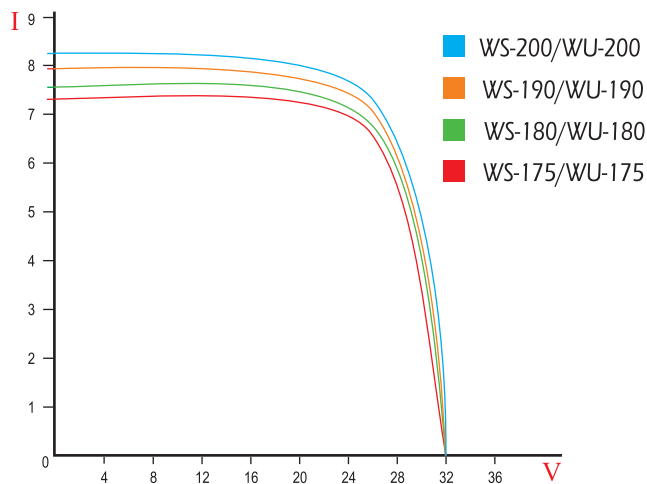


*Measurement Tolerance on Power +/- 3%. All electrical parameters specified at STC : 25°C cell temperature; 100mW/cm² irradiance; AM 1.5

Other Characteristics

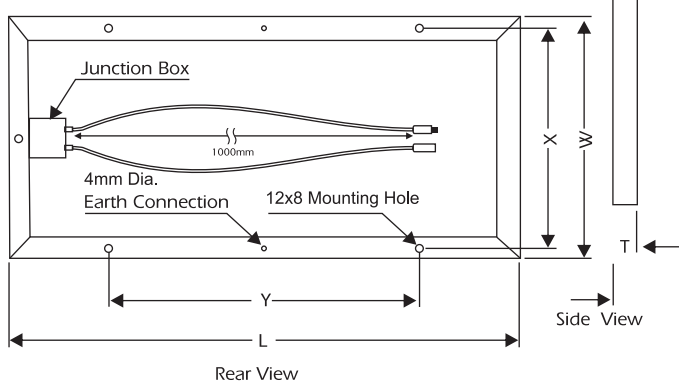
Type of Cell	: Mono / Multi Crystalline Silicon
Front Face	: Tempered Glass (Low Iron)
Encapsulate	: Ethylene Vinyl Acetate
Frame	: Anodized Aluminium
Junction Box	: Weather Proof Nylon 6
Temp. Coefficients	: Voltage -0.123 V / °K Current +4.4 mA / °K Power -0.47% / °K
NOCT	: 47+/-2 °C

- All modules of 180Wp and above are supplied with pre-fixed cables and connectors.
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All dimensions in mm and tolerances ±2mm



TECHNICAL SPECIFICATIONS

Electrical Characteristics *	HS-40	HS-50	HS-60	HS-70	HE-74	HS-75	HS-80	HWS-90	HWS-100	HS-110	HS-115	
Power (Pm) in Watts (nominal)	40	50	60	70	74	75	80	90	100	110	115	
Open Circuit Voltage (Voc) in Volts	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
Short Circuit Current (Isc) in Amps	2.54	3.17	3.81	4.44	4.70	4.76	5.08	5.71	6.35	6.98	7.30	
Voltage at Maximum Power (Vmp) in Volts	17.0	17.0	17.0	17.0	17	17.0	17.0	17.0	17.0	17.0	17.0	
Current at Maximum Power (Imp) in Amps	2.35	2.94	3.53	4.12	4.35	4.41	4.71	5.29	5.88	6.47	6.76	
Maximum System Voltage	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	
Physical Parameters (Refer drawing below)												
Solar Cells per Module (Units)	36	36	36	36	36	36	36	36	36	36	36	
Length x Width x Thickness (L x W x T)	mm	520 x 675 x 35	630 x 675 x 35	740 x 675 x 35	830 x 675 x 35	900 x 675 x 35	900 x 675 x 35	920 x 675 x 35	1035 x 675 x 35	1150 x 675 x 35	1260 x 675 x 35	1305 x 675 x 35
	Inches	20.5 x 26.6 x 1.4	24.8 x 29.1 x 1.4	29.1 x 29.1 x 1.4	32.7 x 26.6 x 1.4	35.4 x 26.6 x 1.4	35.4 x 26.6 x 1.4	36.2 x 26.6 x 1.4	40.7 x 26.6 x 1.4	45.3 x 26.6 x 1.4	49.6 x 26.6 x 1.4	51.4 x 26.6 x 1.4
Weight - Kg	4.80	5.15	6.00	6.95	7.95	7.95	8.30	9.00	10.15	11.30	12.00	
Mounting Holes Pitch (Y)	mm (Inches)	260 (10.2)	310 (12.2)	360 (14.2)	410 (16.1)	450 (17.7)	450 (17.7)	450 (17.7)	545 (21.5)	575 (22.6)	645 (25.4)	645 (25.4)
	mm (Inches)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)	629 (24.8)
Area - Sq. M / Area - Sq. ft.	0.35(3.76)	0.43(4.63)	0.50(5.38)	0.56(6.03)	0.61(6.66)	0.61(6.66)	0.62(6.67)	0.70(7.53)	0.78(8.40)	0.85(9.25)	0.88(9.47)	
Junction Box	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	

*Measurement Tolerance on Power +/- 5%. All electrical parameters specified at STC : 25°C cell temperature; 100mW/cm² irradiance; AM 1.5

Other Characteristics

Type of Cell	: Mono / Multi Crystalline Silicon
Front Face	: Tempered Glass (Low Iron)
Encapsulate	: Ethylene Vinyl Acetate
Frame	: Anodized Aluminium
Junction Box	: Weather Proof Nylon 6
Temp. Coefficients	: Voltage -0.123 V / °K Current +4.4 mA / °K Power -0.47% / °K
NOCT	: 47+/-2 °C

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