

Lampiran A Data Teknis Lapangan

Pengadaan Komponen Utama PLTS

NO.	URAIAN PEKERJAAN & MATERIAL	SPESIFIKASI	VOL	SAT	HARGA SATUAN		JUMLAH		Jumlah	KET
					Material	Alat/Jasa	Material	Alat/Jasa		
1	Komponen Utama PLTS 58.86 kWp									
1	Modul surya	PV Module min. 470 Wp Plan Floater, Anti Floater, dan multi function Floater dan anchoring system	111.00	pe	2.625.000	-	291.375.000	-	291.375.000	
2	Struktur Floater PLTS Terapung	Ti 5 deralat	1.00	ls	187.621.600	-	187.621.600	-	187.621.600	
3	Inverter	Inverter 50 kW/4 MPPT, 2 input/MPPT	1.00	unit	36.750.000	-	36.750.000	-	36.750.000	
3	- On Grid Inverter 50 kW	Smart sensor that compatible with inverter	1.00	pe	2.100.000	-	2.100.000	-	2.100.000	
4	Cable Management	Makel dan Female connector	28.00	post	21.000	-	588.000	-	588.000	
4	- MC4 connector	XLPO 1C X 6 mm2	7.000.00	mtr	15.800	-	11.060.000	-	11.060.000	
4	- PV cable									
Sub total A							529.494.600	-	529.494.600	
							Material A+B+C		529.494.600	
							Alat & Jasa A+B+C		529.400.000	
							Total A+B+C		1.058.894.600	
							Dibulatkan		1.058.900.000	
									USD/My	0.55

Gambar A- 1 HPS Komponen Utama PLTS

PVsyst PLTS Terapung Kolam SBU

Project: PLTS Workshop SBU KDL
 Variant: PLTS Terapung Kolam SBU
 PT Krakatau Daya Listrik (Indonesia)

PVsyst V7.3.2
 VC3, Simulation date: 05/05/23 14:19 with v7.3.2

Project summary		
Geographical Site	Situation	Project settings
Workshop KDL Indonesia	Latitude: -6.00 °S Longitude: 106.03 °E Altitude: 0 m Time zone: UTC+7	Albedo: 0.20
Meteo data	Workshop KDL Meteonorm 8.0 (2010-2014), Sat=100% - Synthetic	
System summary		
Grid-Connected System	Sheds, single array	User's needs
PV Field Orientation Fixed plane Tilt/Azimuth: 5 / 30 °	Near Shadings Linear shadings	Unlimited load (grid)
System information	PV Array	Inverters
Nb. of modules: 144 units Prom total: 67.7 kWp		Nb. of units: 1 unit Prom total: 50.0 kWac Prom ratio: 1.354
Results summary		
Produced Energy: 96.37 MWh/year	Specific production: 1424 kWh/kWp/year	Perf. Ratio PR: 79.20 %
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General parameters, PV Array Characteristics, System losses		3
Near shading definition - Iso-shadings diagram		5
Main results		6
Loss diagram		7

Gambar A- 2 data project pada software PVsyst

Plant report setelah commissioning

1										
2	Loss Due to Export Limitation (kWh)	Loss Due to Export Limitation(Rp)	Consumption (kWh)	Self-consumption (kWh)	Self-consumption Rate (%)	Peak Power (kW)	Performance Ratio(%)	CO ₂ Avoided (t)	Standard Coal Saved (t)	Revenue (Rp)
3			28.50	12.87	5.46	45.14		0.11	0.09	19,476.55
4			29.64	13.34	5.66	42.11		0.11	0.09	20,178.95
5			19.58	11.45	4.80	44.43		0.11	0.10	17,356.14
6										
7										
8			10.82	9.75	6.63	44.60		0.07	0.06	14,723.33
9			35.89	16.51	7.93	44.65		0.10	0.08	24,815.87
10			14.06	0.00		0.00		0.00	0.00	0.00
11										
12			10.84	9.85	5.51	45.91		0.09	0.07	14,904.39
13										
14										
15			18.66	9.48	5.70	45.69		0.08	0.07	14,339.03
16			34.38	15.72	7.00	44.58		0.11	0.09	23,725.87
17			34.43	15.43	6.71	44.18		0.11	0.09	23,297.78
18			34.09	16.07	5.75	45.86		0.13	0.11	24,304.06

Gambar A- 3 Plant report

Lampiran B Spesifikasi Komponen

Spesifikasi Solar Panel

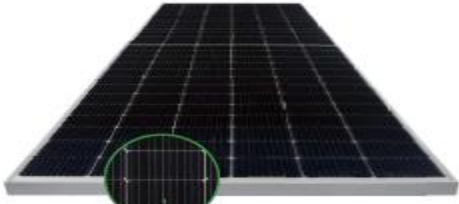
www.jinkosolar.com

Jinko Solar
Building Your Dream in Solar

Tiger Pro 72HC 530-550 Watt MONO-FACIAL MODULE P-Type







Positive power tolerance of 0~+3%

IEC61215(2016), IEC61730(2016)
ISO9001:2015: Quality Management System
ISO14001:2015: Environment Management System
ISO45001:2018
Occupational health and safety management systems

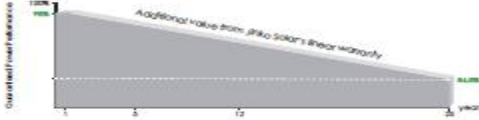


MBS HC Technology

Key Features

 Multi Busbar Technology Better light trapping and current collection to improve module power output and reliability.	 Durability Against Extreme Environmental Conditions High salt mist and ammonia resistance.
 Reduced Hot Spot Loss Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.	 Enhanced Mechanical Load Certified to withstand wind load (2400 Pascal) and snow load (5400 Pascal).
 Longer Life-time Power Yield 0.55% annual power degradation and 25 year linear power warranty.	

LINEAR PERFORMANCE WARRANTY



12 Year Product Warranty
25 Year Linear Power Warranty
0.55% Annual Degradation Over 25 years

Gambar B- 1 Spesifikasi panel surya

Spesifikasi Floater

一、主要配件图片 Main components and picture

Looking for k
Ask AI Assista

1. 主浮体

Main Floater

一个主浮体上安装一个组件

Install a PV module on a main floater



2. 走道浮体 (包含所有型号)

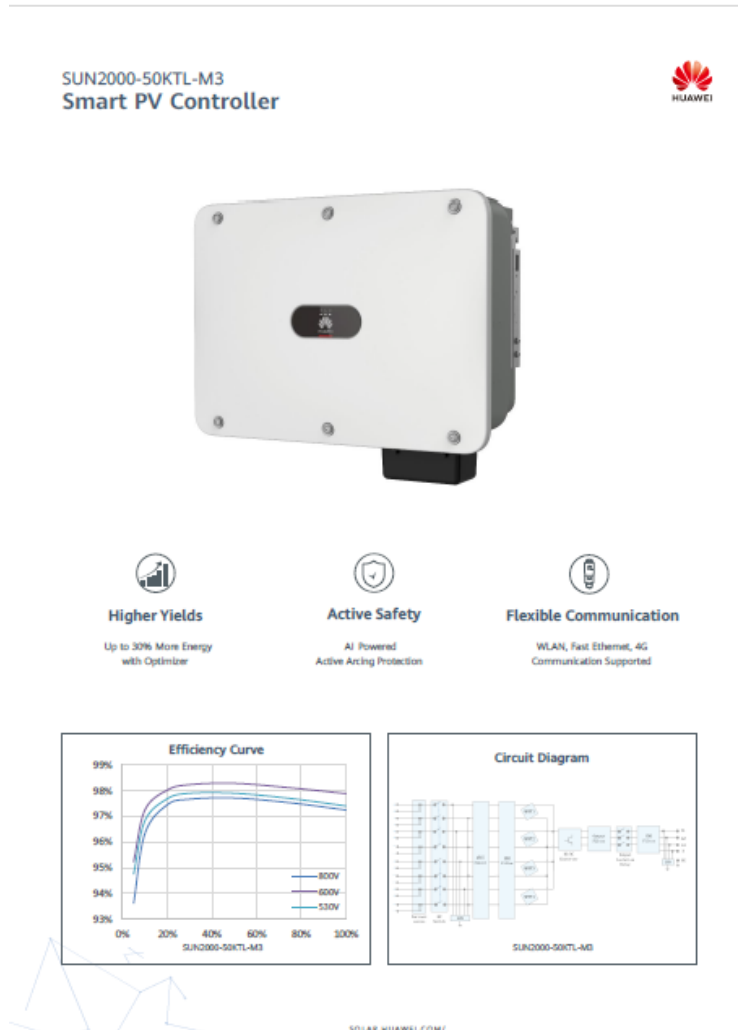
Walkway floater (All models included)

连接主浮体, 维护通道. 不同长度的间隔走道确保组件 W-E 方向的安全距离

Connection with the main floater, maintenance walkway. Walkway floater of different lengths ensure a safe distance W-E the direction of the PV modules.

Gambar B- 2 Spesifikasi Floater

Spesifikasi Inverter



Gambar B- 3 Spesifikasi Inverter

Technical Specification

SUN2000-50KTL-M3	
Technical Specification	
Technical Specification	SUN2000-50KTL-M3
Efficiency	
Max. Efficiency	98.5%
European Efficiency	98.0%
Input	
Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Rated Input Voltage	600 V
Number of Inputs	8
Number of MPPT Trackers	4
Output	
Rated AC Active Power	50,000 W
Max. AC Apparent Power	55,000 VA
Max. AC Active Power (cosφ=1)	55,000 W
Rated Output Voltage	400 Vac / 480 Vac, 2W+(N) + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	72.2 A @ 400Vac, 60.1 A @ 480Vac
Max. Output Current	79.8 A @ 400Vac, 66.5 A @ 480Vac
Adjustable Power Factor Range	0.8 LG ~ 0.8 LD
Max. Total Harmonic Distortion	<3%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Arc Fault Protection	Yes
Ripple Receiver Control	Yes
Integrated PID Recovery ³	Yes
Communication	
Display	LED Indicator, Bluetooth + APP
RS485	Yes
Smart Dongle	WLAN/Ethernet via Smart Dongle-WLAN-PE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)
Monitoring BUS (MBUS)	Yes (Isolation Transformer required)
Optimizer Compatibility	
DC MBUS Compatible Optimizer	MERC-1100/1300W-P
General Data	
Dimensions (W x H x D)	640 x 530 x 270 mm (25.2 x 20.9 x 10.6 Inch)
Weight (with mounting plate)	49 kg (108.1 lb)
Operating Temperature Range	-25°C ~ 50°C (-13°F ~ 140°F)
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 Ft.)
Relative Humidity	0% RH ~ 100% RH
DC Connector	Amphenol H44
AC Connector	Waterproof Connector + CT/DT Terminal
Protection Degree	IP 65
Topology	Transformerless
Nighttime Power Consumption	≤ 5.5W
Standard Compliance (more available upon request)	
Safety	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60050, IEC 61683
Grid Connection Standards	IEC 61727, VDE-AR-N1305, VDE 0126-1-1, 30kW, G59/3, ITC C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.D. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 987-2-1, DEWA

¹ The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.
² Any DC input voltage beyond the operating voltage range may result in inverter stop operation.
³ If IEC62109-2/EN50438-1/UL1741 is not available, please refer to the grid connection standards of the country where the inverter is used.
⁴ IEC62109-2/EN50438-1/UL1741 is not available, please refer to the grid connection standards of the country where the inverter is used.
 Refer to <http://inverter.huawei.com/>

Gambar B- 4 technical specification