

# LAMPIRAN

# Lampiran 1. Data Penduduk dan Penggunaan Peralatan Listrik

## 1. Data Penduduk

**LAPORAN KEPENDUDUKAN DI KABUPATEN BANTUL**  
**DESA**  
**BULAN**

**PEMERINTAH KABUPATEN BANTUL**  
**KECAMATAN : KRETEK**

**: PARANGTRITIS**  
**: MARET 2018**

No.	DUSUN	Pend. Awal Bulan Ini		Lahir Bulan Ini		Mati Bulan Ini		Pondatang Bulan Ini		Pindah Bulan Ini		Pend. Akhir Bulan Ini					
		L	P	L	P	L	P	L	P	L	P	L	P				
1	Kretek	568	453	1	0	1	0	1	0	2	2	0	3	568	452	1020	
		K. Keluarga		321										321			
2	Sono	403	392	0	0	0	1	1	0	0	0	0	0	403	391	794	
		K. Keluarga		196										197			
3	Samiran	418	488	0	0	1	0	1	0	0	0	1	0	417	487	904	
		K. Keluarga		252										252			
4	Bungkus	348	346	0	0	1	1	2	1	2	3	0	0	348	347	695	
		K. Keluarga		182										182			
5	Depok	266	292	0	1	1	0	1	0	0	0	1	0	265	292	557	
		K. Keluarga		121										121			
6	Duwuran	223	227	0	0	1	0	1	0	0	0	1	2	221	225	446	
		K. Keluarga		122										122			
7	Grogol VII	323	349	0	1	1	2	3	0	1	1	0	0	322	349	671	
		K. Keluarga		209										209			
8	Grogol VIII	22	284	1	0	1	3	4	0	0	0	0	0	227	281	508	
		K. Keluarga		169										169			
9	Grogol IX	218	279	1	0	1	0	0	1	4	5	0	0	220	283	503	
		K. Keluarga		146										146			
10	Grogol X	212	234	0	0	0	1	1	0	0	0	0	0	212	233	445	
		K. Keluarga		164										164			
11	Mancingan	679	719	0	0	1	1	2	0	1	1	0	0	678	719	1397	
		K. Keluarga		630										631			
Jumlah		Penduduk Akhir Bulan Ini : 7940		Kepala Keluarga Akhir Bulan Ini : 2514													

Lurah / Kepala Desa Parangtritis  
**PEMERINTAH KABUPATEN BANTUL**  
**DESA PARANGTRITIS**  
 Lurah / Kepala Desa Parangtritis  
 25 Januari 2019


**Keterangan**  
 : L : Laki-Laki (Jiwa)  
 : P : Perempuan (Jiwa)  
 : K. Keluarga : Kepala Keluarga  
 : Jumlah : Laki-Laki + Perempuan

## 2. Konsumsi Listrik

<b>Beban</b>	<b>Rumah 1</b>	<b>Rumah 2</b>	<b>Rumah 3</b>	<b>Rumah 4</b>	<b>Rumah 5</b>	<b>Total</b>
Lampu 1	3	5	4	5	4	5
Lampu 2	2	2	2	1	2	2
Tv	1	1	1	1	1	1
Pompa air	-	1	-	1	-	1
Magic jar	-	1	1	1	-	1
Setrika	1	1	1	-	1	1
Kulkas	1	1	1	1	-	1

## Lampiran 2. Data Spesifikasi Komponen

### 1. Turbin Angin Bergey




**Tornado-Tuff**  
Designed, Built, and Proven  
in America's Tornado Alley

**Exclusive**  
**5 YEAR**  
**Warranty**

# BWC EXCEL


## 10kW CLASS WIND TURBINE




The Bergey BWC Excel is a rugged and reliable small wind turbine that has been proven in hundreds of installations around the world. It comes from the world's leading manufacturer of small wind turbines and is backed by the longest warranty in the industry. Whether you want to reduce the electric bills at your home or power a critical load far from the power grid, the BWC Excel will deliver years of "worry-free" power.

Excel-S: Grid-Intertie Applications (10kW)  
Excel-R: Battery Charging Applications (7.5kW)  
Excel-PD: Pumping Applications (10kW)


- 5-YEAR WARRANTY
- AMERICA'S BEST SELLING RESIDENTIAL SYSTEM
- CERTIFIED BY CALIFORNIA ENERGY COMMISSION
- SIMPLE DESIGN - 3 MOVING PARTS
- PATENTED POWERFLEX® ROTOR SYSTEM
- AUTOFURL® AUTOMATIC STORM PROTECTION
- DIRECT-DRIVE PM ALTERNATOR
- NO SCHEDULED MAINTENANCE REQUIRED
- HEAVY-DUTY CONSTRUCTION
- DESIGNED FOR 30+ YEARS
- POLYURETHANE AIRCRAFT-QUALITY PAINT
- PROVEN, OVER 50 MILLION OPERATIONAL HOURS



Excel-S GrdTek 10  
Power Processor  
(AC output)



Excel-R OptiCharge  
Voltage Regulator  
(DC output)



23 ft (7 meter)  
Rotor Diameter

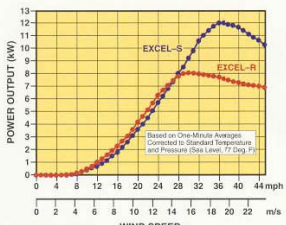
Net Weight: 1,050 lbs  
Shipping Weight: 1,200 lbs

**THE ONLY MOVING PARTS ARE THE PARTS YOU SEE MOVING**

#### PERFORMANCE

Start-up Wind Speed...7.5 mph  
Cut-in Wind Speed...8 mph  
Rated Wind Speed...31 mph  
Rated Rotor Speed...310 RPM  
Furling Wind Speed...36 mph  
Max. Design Wind Speed...125 mph  
(with Extra-Stiff Blades...150 mph)

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ANALYZE & BUY WISELY!  
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POWER OUTPUT (kW)

WIND SPEED (m/s)

EXCEL-S  
EXCEL-R

Based on One-Minute Averages  
Corrected to Standard Temperature  
and Pressure (Sea Level, 77 Deg. F)

#### Predicted Monthly Energy Production


Wind Speeds Taken at Top of Tower


Average Wind Speed	8 mph	9 mph	10 mph	11 mph	12 mph	13 mph	14 mph
Excel-S (AC kWh)	249	370	520	700	900	1,130	1,370
Excel-R (DC kWh)	340	500	680	880	1,090	1,320	1,550

Wind Speeds Taken at 10 meters (per standard wind resource maps)

Average Wind Speed	8 mph	9 mph	10 mph	11 mph	12 mph	13 mph	14 mph
60 ft. Tower	Excel-S 330	Excel-S 480	Excel-S 670	Excel-S 870	Excel-S 1,110	Excel-S 1,350	Excel-S 1,610
60 ft. Tower	Excel-R 440	Excel-R 620	Excel-R 830	Excel-R 1,050	Excel-R 1,280	Excel-R 1,510	Excel-R 1,740
80 ft. Tower	Excel-S 430	Excel-S 620	Excel-S 840	Excel-S 1,100	Excel-S 1,370	Excel-S 1,670	Excel-S 1,960
80 ft. Tower	Excel-R 560	Excel-R 780	Excel-R 1,050	Excel-R 1,280	Excel-R 1,550	Excel-R 1,820	Excel-R 2,060
100 ft. Tower	Excel-S 490	Excel-S 700	Excel-S 950	Excel-S 1,220	Excel-S 1,510	Excel-S 1,820	Excel-S 2,130
100 ft. Tower	Excel-R 630	Excel-R 870	Excel-R 1,140	Excel-R 1,410	Excel-R 1,680	Excel-R 1,950	Excel-R 2,200
120 ft. Tower	Excel-S 550	Excel-S 780	Excel-S 1,050	Excel-S 1,340	Excel-S 1,650	Excel-S 1,970	Excel-S 2,280
120 ft. Tower	Excel-R 700	Excel-R 960	Excel-R 1,240	Excel-R 1,530	Excel-R 1,800	Excel-R 2,070	Excel-R 2,320

Assumptions: Inland Site, Rayleigh Distribution, Shear Exponent = 0.18, Altitude = 1,000 ft.  
Note: Battery charge regulation (batteries full) will reduce actual Excel-R performance.  
Your Performance May Vary.





**SIMPLICITY • RELIABILITY • PERFORMANCE**

**2001 PRIESTLEY AVE.  
NORMAN, OK 73069  
T: 405-364-4212  
F: 405-364-2078  
SALES@BERGEY.COM  
WWW.BERGEY.COM**

## Spesifikasi BWC Excel-R 7,5 kW

### Specifications

Wind Generator Specifications	
Rated Power Output	7,500 watts at 29 mph (13.0 m/s)
Cut-in Wind Speed	7.0 mph (3.1 m/s)
Start-up Wind Speed	7.5 mph (3.4 m/s)
Cut-out wind Speed	none
Furling Wind Speed	35 mph (15.6 m/s)
Maximum Design Wind Speed	120 mph (53.6 m/s)
Type	3 Blade Upwind
Rotor Diameter	23.0 ft (7.0 m)
Weight	1050 lbs (477 kg)
Gearbox/Belts	none, direct drive
Temperature Range	-40C to +60C
Generator	Permanent Magnet Alternator
Turbine Output Form	3 phase AC, variable frequency
System Output Form	120VDC, 240VDC, 48VDC nominal (with included battery charge controller)



## 2. Baterai Rolls-Surrette 4KS25P



### 4 KS 25P

4 VOLTS



CONTAINER: (INNER)	Polypropylene	WEIGHT DRY:	100 kg	220 Lbs.
COVER: (INNER)	Polypropylene - heat sealed to inner container	WEIGHT WET:	143 kg	315 Lbs.
CONTAINER: (OUTER)	High Density Polyethylene	LENGTH:	400 mm	15 3/4 Inches
COVER: (OUTER)	High Density Polyethylene snap fit to outer container	WIDTH:	270 mm	10 5/8 Inches
TERMINALS:	Flag with stainless steel nuts & bolts	HEIGHT:	629 mm	24 3/4 Inches
HANDLES:	Molded			

PLATE HEIGHT:	432 mm	17.000 Inches
PLATE WIDTH:	143 mm	5.625 Inches
THICKNESS (POSITIVE):	6.99 mm	0.275 Inches
THICKNESS (NEGATIVE):	4.57 mm	0.180 Inches
POSITIVE PLATE DOUBLE WRAPPED WITH SLYVER		
ENVELOPED WITH HEAVY DUTY SEPARATOR		

COLD CRANK AMPS (CCA):	0°F / -17.8°C	3714
MARINE CRANK AMPS (MCA):	32°F / 0°C	4643
RESERVE CAPACITY (RC @ 25A):		4290 Minutes

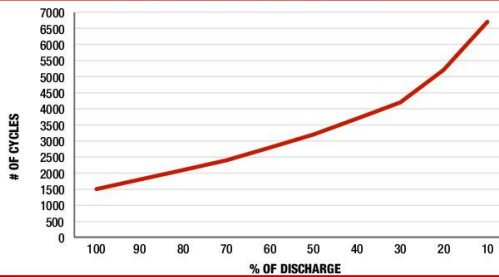
#### CAPACITY 1350 AH

HOUR RATE:	SPECIFIC GRAVITY	CAPACITY / AMP HOUR	CURRENT / AMPS
@ 100 HOUR RATE	1.280	1904	19.04
@ 72 HOUR RATE	1.280	1796	24.94
@ 50 HOUR RATE	1.280	1661	33.21
@ 24 HOUR RATE	1.280	1404	58.50
@ 20 HOUR RATE	1.280	<b>1350</b>	<b>67.50</b>
@ 15 HOUR RATE	1.280	1256	83.70
@ 12 HOUR RATE	1.280	1175	97.88
@ 10 HOUR RATE	1.280	1121	112.05
@ 8 HOUR RATE	1.280	1053	131.63
@ 6 HOUR RATE	1.280	959	159.75
@ 5 HOUR RATE	1.280	905	180.90
@ 4 HOUR RATE	1.280	837	209.25
@ 3 HOUR RATE	1.280	756	252.00
@ 2 HOUR RATE	1.280	648	324.00
@ 1 HOUR RATE	1.280	459	459.00

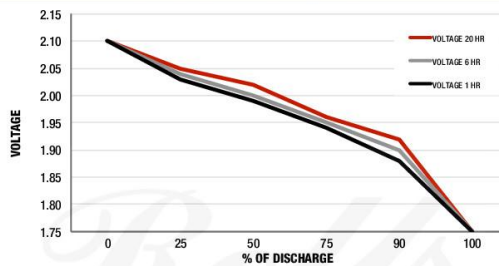


CELLS:	25 Plates/Cell	2 Cell
SEPARATOR THICKNESS:	3 mm	0.105 Inches
GLASS MAT INSULATION:	1 mm	0.020 Inches
ELECTROLYTE RESERVE: ABOVE PLATES	95 mm	3.75 Inches

#### CYCLE LIFE VS. DEPTH OF DISCHARGE



#### VOLTAGE VS. DEPTH OF DISCHARGE



Ampere Hour capacity ratings based on specific gravities of 1.280. Reduce capacities 5% for 1.265 specific gravity and 10% for specific gravities of 1.250

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SPEC 01

SURRETTE BATTERY COMPANY 1 STATION RD SPRINGHILL, NS CANADA B0M 1X0  
1/1/2014 REV. 1

### 3. Converter Solectria SGI 266 kW

**YASKAWA**  
**SOLECTRIA SOLAR**



**SGI 225**  
**SGI 250**  
**SGI 266**  
**SGI 300**  
**SGI 500 & SGI 500PE**

COMMERCIAL INVERTERS

#### FEATURES

- Compliant with NEC 2014 690.11 & 690.12 arc fault and rapid shutdown requirements when coupled with ARCCOM combiner
- 97.5% CEC efficiency
- Parallel power stages
- Fuse and breaker subcombiner options
- Modbus communications
- User-interactive LCD
- Real power curtailment

#### OPTIONS

- Uptime guarantee
- Stainless steel enclosure
- Web-based monitoring
- Built-in cellular connectivity

#### COMMERCIAL INVERTERS

Yaskawa - Solectria Solar's SMARTGRID 225-500PE series of inverters is compliant with NEC 2014 690.11 & 690.12 arc fault and rapid shutdown requirements. This series boasts an industry leading 97.5% CEC weighted efficiency which translates into significantly greater energy production and cost savings over the lifetime of the system. The SGI line has been deployed in a large number of commercial and utility-scale PV systems across North America ranging from 200kW to multi-MW. Our customers find these to be the most cost-effective, reliable, and efficient inverters in the market. This product family offers utility options such as voltage and frequency ride through, controlled ramp rates, reactive power control, and real power curtailment. Such critical utility options, combined with unsurpassed efficiencies and the lowest nighttime tare losses in the industry, earmark the SGI series as the premier inverter for next generation large commercial systems.



SOLECTRIA.COM



SPECIFICATIONS	SGL 225	SGL 250	SGL 266	SGL 300	SGL 500	SGL 500PE
<b>DC Input</b>						
Absolute Maximum Input Voltage	600 VDC					
Max Power Input Voltage Range (MPPT)*	300-500 VDC					
Maximum Operating Input Current	768 A	853 A	908 A	1026 A	1721 A	1712 A
Maximum PV Power	331.5 kW	325 kW	345.8 kW	390 kW	650 kW	
Strike Voltage	390 V					
<b>AC Output</b>						
Nominal Output Voltage	480 VAC, 3ø+/PE					
AC Voltage Range	-12%/+10%					
Continuous Output Power	225 kW	250 kW	266 kW	300 kW	500 kW	
Continuous Output Current	480 VAC 271 A	301 A	320 A	360 A	602 A	
Continuous Output Current	600 VAC —	240 A	—	—	—	—
Maximum Backfeed Current	0 A					
Nominal Output Frequency	60 Hz					
Output Frequency Range	57-60.5 Hz					
Power Factor	Adjustable 0.9 leading / 0.9 lagging, factory set at 1					
Fault Current Contribution (1 Cycle RMS)	325.2 A	361.2 A	384 A	432 A	722 A	
Total Harmonic Distortion (THD) @ Rated Load	≤3%					
<b>Performance</b>						
Peak Efficiency	98.0%					
CEC Efficiency (480 VAC)	97.5%					
Tare Loss	28 W					
Ambient Temperature Range (full power)	-40°F to +122°F (-40°C to +50°C)					
Storage Temperature Range	-40°F to +158°F (-40°C to +70°C)					
Relative Humidity (non-condensing)	5-95%					
Audible Noise	≤60 dBA @ 5 m					
Safety Listings & Certifications	UL 1741 / IEEE 1547, CSA C22.2#107.1, FCC part 15 B					
Maintenance Outage Factor	0.1					
Testing Agency	ETL					
<b>Mechanical</b>						
Transformer	Standard, fully-integrated					
AC Breaker/DC Disconnect	Fully-integrated					
Dimensions (H x W x D)	79 in. x 109 in. x 41 in. (2007 mm x 2769 mm x 1042 mm)					
Shading Set Back	137 in. (3480 mm) at 30° solar elevation					
Weight	5170 lbs (2346 kg)	5650 lbs (2563 kg)	5650 lbs (2563 kg)	6980 lbs (3167 kg)	6980 lbs (3167 kg)	7107 lbs (3224 kg)
Enclosure Rating	Type 3R					
Enclosure Finish	Polyester powder coated steel; optional 316 stainless steel					
<b>Subcombiner Options</b>						
Fuses or Breakers	6 positions, 225-400 A				8 positions, 225-400 A	
	12 positions, 110-200 A				16 positions, 110-200 A	
Fuses Only	24 positions, 70-100 A				32 positions, 70-100 A	
<b>Communication</b>						
Data Logger Hardware	Standard, Integrated					
SolrenView™ Monitoring Service	Optional					
Optional Revenue Grade Monitoring (Integrated)	400 A				800 A	
Optional SolZone™ Sub-Array Monitoring (DC Current)	6 zones				8 zones	
Optional Cellular Communication	SolrenView AIR					
Communication Interface	RS-485 SunSpec Modbus RTU					
<b>Warranty</b>						
Standard	5 year					
Optional	10, 15, 20 year; extended service agreement; uptime guarantee					

\*At nominal AC voltage

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**YASKAWA**  
SOLECTRIA SOLAR

www.solectria.com | inverters@solectria.com | 978.683.9700





## Lampiran 3. Harga Komponen

### 1. Turbin Angin Bergey

BERGEY WINDPOWER CO. Norman, OK, USA

## Retail Price List

Effective 10-01-13 - All Prices are Subject to Change Without Notice.

### Wind Turbines

#### Battery-Charging Models

			Model No.	Price
1 kW	12 - 48 VDC	BWC Excel 1 turbine, Includes MidNite Solar Classic 250 Charge Controller and MidNite Solar Turbine Control Box.	BWC Excel 1	\$4,595
7.5 kW	48 VDC	BWC Excel-R turbine, Includes VCS-10/48 Charge Controller and Step-Down Transformer.	BWC Excel-R/48	\$26,870
	120 VDC	BWC Excel-R turbine, Includes VCS-10 Charge Controller.	BWC Excel-R/120	\$25,770
	240 VDC		BWC Excel-R/240	\$25,770

#### Grid-Intertie Models

			Model No.	Price
6 kW	240 VAC, 60 Hz	Single-Phase, Includes Powersync II Inverter	BWC Excel-6/60	\$21,995
	208 VAC, 60 Hz	Three-Phase, Includes Powersync II Inverter	BWC Excel-6/208V	\$21,995
	220 VAC, 50 Hz	Single-Phase, Includes Powersync II Inverter	BWC Excel-6/50	\$21,995
10 kW	240 VAC, 60 Hz	Single-Phase, Includes Powersync II Inverter	BWC Excel-10/60	\$31,770
	208 VAC, 60 Hz	Three-Phase, Includes Powersync II Inverter	BWC Excel-10/208V	\$31,770
	220 VAC, 50 Hz	Single-Phase, Includes Powersync II Inverter	BWC Excel-10/50	\$31,770

#### Options

			Price
1 kW	60A Diversion Load, optional dump load	XL.1/DL	\$416
	DC Power Center, (MiniDC by Midrite Solar, includes inverter breaker)	XL.1/MDC	\$235
6 kW, 7.5 kW & 10 kW	Special Paint, complete turbine except tail boom (e.g., light gray)	SPS	\$690
	Black Blades, better performance under icing conditions	BLK	no charge
	Enhanced Turbine Corrosion Protection, now standard	N.A.	no charge
	DC Power Center, 9-circuit fused DC bus for all system inputs and outputs	VPC-9	\$850
	Cumulative Energy Production Meter with Base, for 10kW Excel-S	CEP	\$209
	Export Crating, for wind turbine (tail boom not crated)	Crate	\$975
	Transformer, for connecting 10kW to 480V or 208V service	Xfmr	request

Bergey Windpower Co., 2200 Industrial Blvd., Norman, OK 73069 Tel: 405-364-4212 Fax: 405-364-2078 E-Mail: sales@bergey.com

## 2. Baterai Rolls-Surrette

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### Surrette Rolls 4-KS-25P > 4 volt 1350 Amp Hour Flooded Battery

ELECTRICAL + SAFETY SUPPLIES

LED LIGHTS

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**Our Price: \$1,190.00**

Qty:

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## 3. Converter Solectria SGI

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### 266kW 480Vac Inverter Solectria SGI



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**Your Price: \$94,287.18**

Mfr Part Number SGI-266KW

Solar Inverters

**Availability: SOLD OUT**

Product Code: SGI-266KW

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#### Description

Solectria, SGI 266KW grid tied inverter, 3-Ph, 266kW, 480 VAC, 60Hz, 600VDC, DC/AC Discon, 5 Yr Warr, Neg Gnd, RS485 & Ethernet, SGI266KW Order online or PHONE 888-498-3331

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