

LS IS

PHOTOVOLTAIC SYSTEMS



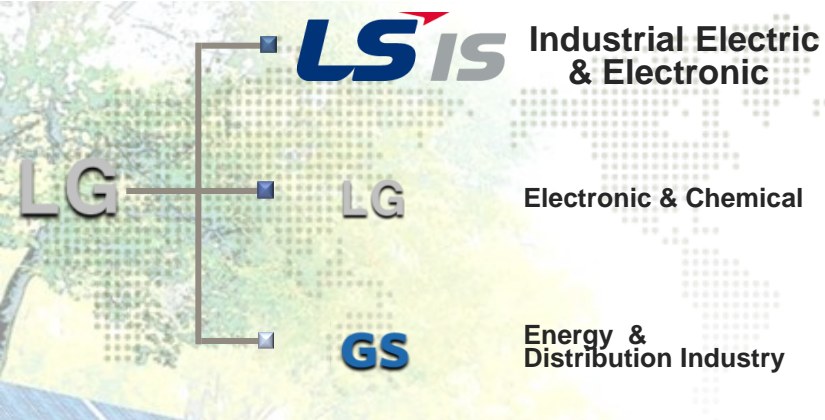
LS IS

LEADING INNOVATION, CREATING TOMORROW



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Meaning

Industrial Systems
Innovative Solution
Infra Solution
Intelligent Solution

CI

LSIS LSIS

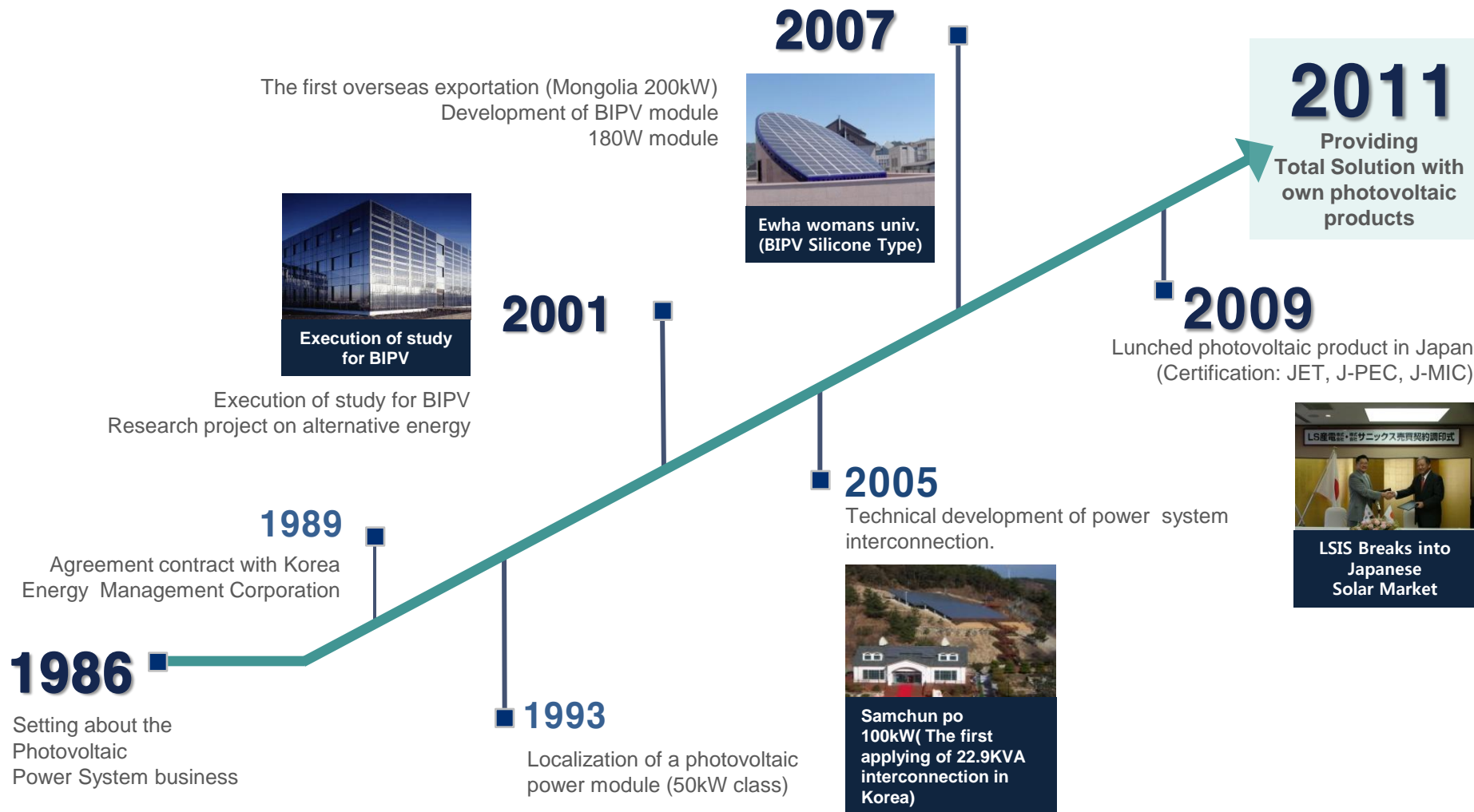
Signature

LSIS





History / Achievements





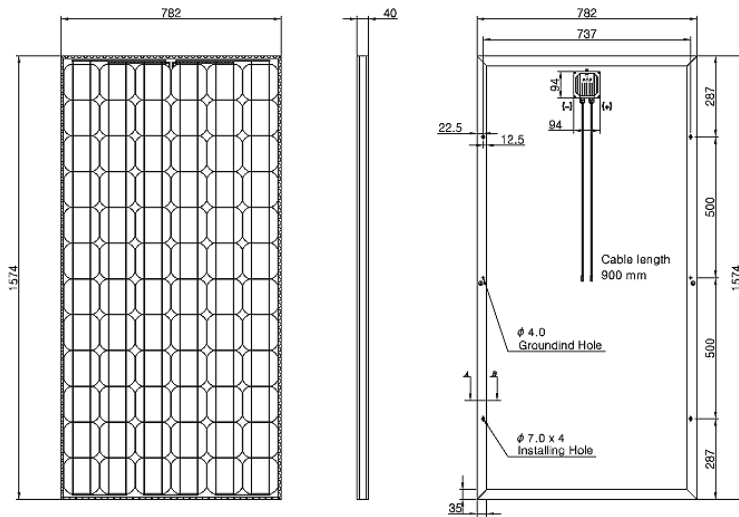
PART 1

General Information of LSIS Solar Product

- 1. Photovoltaic module**
- 2. Photovoltaic inverter**
- 3. Photovoltaic module / inverter certification**

1. Photovoltaic Module Specification (180W ~ 240W)

5 inch Module Specification



※ Condition : 1000W/m², 25 °C, AM1.5

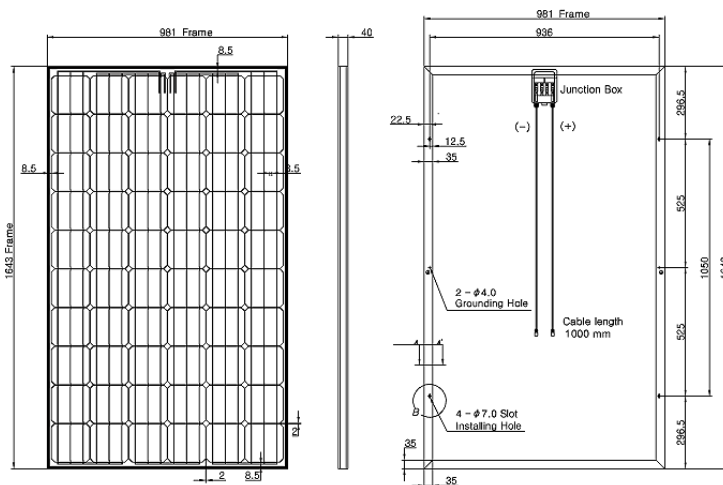
• PVM S190 | PVM S192

DESCRIPTION	190W	192W	
1. MECHANICAL DATA			
1.1 Cell Type	MONO-CRYSTALLINE		
1.2 Cell Dimensions	125mm×125mm±0.5mm		
1.3 Cell Quntity per Module	72ea		
1.4 Number of Busbar	2		
1.5 Dimensions [L x W x T]	1574 x 782 x 40 mm		
1.6 Weight	15.5 kg		
1.7 Bypass Diodes	3		
1.8 Connection Type	MC 4		
1.9 Length of Cable	900 mm		
1.10 Maximum Load[Pa]	2400		
2. ELECTRICAL DATA			
2.1 Norminal Power (Pmax)	[Wp]	190	192
2.2 Performance tolerance	[%]	0 ~ +3	0 ~ +3
2.3 Efficiency	[%]	15.36	15.59
2.4 Open-Circuit Voltage	[V]	45.23	45.286
2.5 Short-Circuit Current	[A]	5.7	5.7
2.6 Voltage at Maximum-Power Point	[V]	35.31	35.47
2.7 Current at Maximum-Power Point	[A]	5.38	5.41
2.8 Temperature Coefficient of Isc	[A/k]	0.0017385	
2.9 Temperature Coefficient of Isc	[%/k]	0.0305	
2.10 Temperature Coefficient of Voc	[v/k]	-0.149	
2.11 Temperature Coefficient of Voc	[%/k]	-0.3297	
2.12 Temperature Coefficient of Pmax	[W/k]	-0.84379	-0.852672
2.13 Temperature Coefficient of Pmax	[%/k]	-0.4441	
2.14 Maximum System Voltage	[V]	1000V	
2.15 Series Fuse Rating	[A]	10	

Due to continuous product improvement the specifications in this Product Sheet are subject to change without notice. Specifications can vary slightly.

1. Photovoltaic Module Specification (180W ~ 245W)

6inch Module Specification



※Condition : 1000W/m², 25 °C, AM1.5

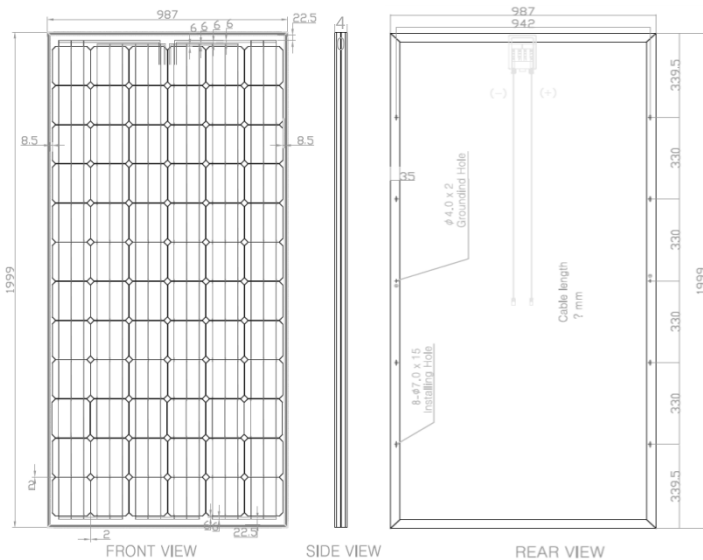
• PVM S240 R1 | PVM S242 R1 | PVM S245 R1

DESCRIPTION	240W	242W	245W	
1. MECHANICAL DATA	6 Inch Cell Modules			
1.1 Cell Type	Mono-Crystalline			
1.2 Cell Dimensions [mm]	156 X 156			
1.3 Cell Quntity per Module	60ea			
1.4 Number of Busbar	3			
1.5 Dimensions [L x W x T]	1643 x 981 x 40 mm			
1.5 Weight	22.5 kg			
1.6 Bypass Diodes	3			
1.7 Connection Type	MC4 compatible			
1.8 Length of Cable	1000mm			
1.9 Maximum Load[Pa]	5400pa			
2. ELECTRICAL DATA				
2.1 Norminal Power (Pmax)	[Wp]	240	242	245
2.2 Performance tolerance	[%]	0 ~ +3	0 ~ +3	0 ~ +3
2.3 EFFICIENCY	[%]	14.58+	14.70+	15.20+
2.4 Open-Circuit Voltage	[V]	37.90	37.87	37.61
2.5 Short-Circuit Current	[A]	8.61	8.75	8.77
2.6 Vøltage at Maximum-Power Point	[V]	29.80	29.62	30.36
2.7 Current at Maximum-Power Point	[A]	8.18	8.18	8.04
2.8 Temperature Coefficient of Isc	[A/k]	0.001722	0.00175	0.00175
2.9 Temperature Coefficient of Isc	[%/k]	0.02	0.02	0.02
2.10 Temperature Coefficient of Voc	[v/k]	-0.114	-0.114	-0.1128
2.11 Temperature Coefficient of Voc	[%/k]	-0.3	-0.3	-0.3
2.12 Temperature Coefficient of Pmax	[W/k]	-1.032	-1.0406	-1.0535
2.13 Temperature Coefficient of Pmax	[%/k]	-0.43	-0.43	-0.43
2.14 Maximum System Voltage	[V]	1000V(TUV),600V(UL)		
2.15 Series Fuse Rating	[A]	20		

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1. Photovoltaic Module Specification (180W ~ 245W)

6inch Module Specification



※Condition : 1000W/m², 25 °C, AM1.5

• PVM S300

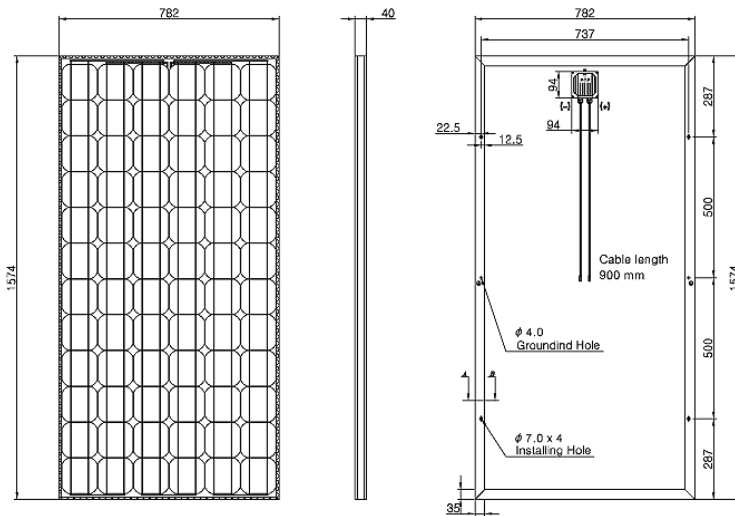
DESCRIPTION		300W
1. MECHANICAL DATA		6 Inch Cell Modules
1.1 Cell Type		Mono-Crystalline
1.2 Cell Dimensions [mm]		156 X 156
1.3 Cell Quntity per Module		72ea
1.4 Number of Busbar		3
1.5 Dimensions [L x W x T]		1999 x 987 x 40 mm
1.6 Weight		27.8 kg
1.7 Bypass Diodes		3
1.8 Connection Type		MC4 compatible
1.9 Length of Cable		1000mm
1.10 Maximum Load[Pa]		5400pa
2. ELECTRICAL DATA		
2.1 Norminal Power (Pmax)	[Wp]	300
2.2 Performance tolerance	[%]	0 ~ +3
2.3 EFFICIENCY	[%]	15.30
2.4 Open-Circuit Voltage	[V]	45.00
2.5 Short-Circuit Current	[A]	8.77
2.6 Voltage at Maximum-Power Point	[V]	36.40
2.7 Current at Maximum-Power Point	[A]	8.28
2.8 Temperature Coefficient of Isc	[A/k]	0.0018
2.9 Temperature Coefficient of Isc	[%/k]	0.02
2.10 Temperature Coefficient of Voc	[v/k]	-0.1350
2.11 Temperature Coefficient of Voc	[%/k]	-0.3
2.12 Temperature Coefficient of Pmax	[W/k]	-1.2900
2.13 Temperature Coefficient of Pmax	[%/k]	-0.43
2.14 Maximum System Voltage	[V]	1000V
2.15 Series Fuse Rating	[A]	20

Due to continuous product improvement the specifications in this Product Sheet are subject to change without notice. Specifications can vary slightly.

1. Photovoltaic Module Specification (180W ~ 240W)

5 inch Module Specification

Black-Back Sheet Module



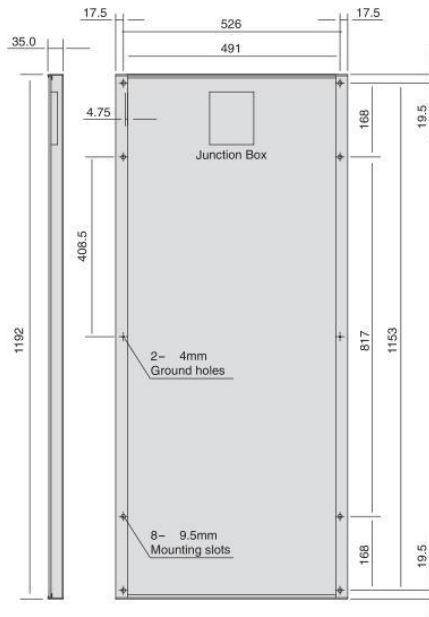
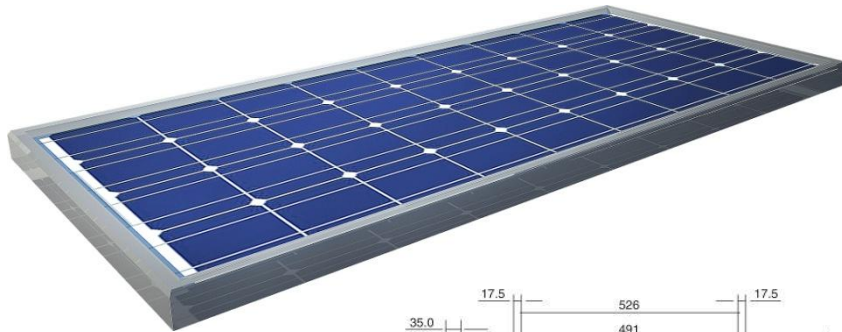
※ Condition : 1000W/m², 25 °C, AM1.5

• PVM S188 R1 | PVM S190 R1

DESCRIPTION	188W	190W	
1. MECHANICAL DATA			
1.1 Cell Type	MONO-CRYSTALLINE		
1.2 Cell Dimensions	125mm×125mm±0.5mm		
1.3 Cell Quntity per Module	72ea		
1.4 Number of Busbar	2		
1.5 Dimensions [L x W x T]	1574 x 782 x 40 mm		
1.6 Weight	15.5 kg		
1.7 Bypass Diodes	3		
1.8 Connection Type	MC 4		
1.9 Length of Cable	900 mm		
1.10 Maximum Load[Pa]	2400		
2. ELECTRICAL DATA			
2.1 Norminal Power (Pmax)	[Wp]	188	190
2.2 Performance tolerance	[%]	0 ~ +3	0 ~ +3
2.3 Efficiency	[%]	15.27	15.36
2.4 Open-Circuit Voltage	[V]	45.2	45.45
2.5 Short-Circuit Current	[A]	5.46	5.62
2.6 Voltage at Maximum-Power Point	[V]	36.1	35.54
2.7 Current at Maximum-Power Point	[A]	5.25	5.35
2.8 Temperature Coefficient of Isc	[A/k]	0.0017	
2.9 Temperature Coefficient of Isc	[%/k]	0.0305	
2.10 Temperature Coefficient of Voc	[v/k]	-0.1490	-0.1499
2.11 Temperature Coefficient of Voc	[%/k]	-0.3297	
2.12 Temperature Coefficient of Pmax	[W/k]	-0.8349	-0.8438
2.13 Temperature Coefficient of Pmax	[%/k]	-0.4441	
2.14 Maximum System Voltage	[V]	1000V	
2.15 Series Fuse Rating	[A]	10	

Due to continuous product improvement the specifications in this Product Sheet are subject to change without notice. Specifications can vary slightly.

5 inch Module Specification



• GMG 01800

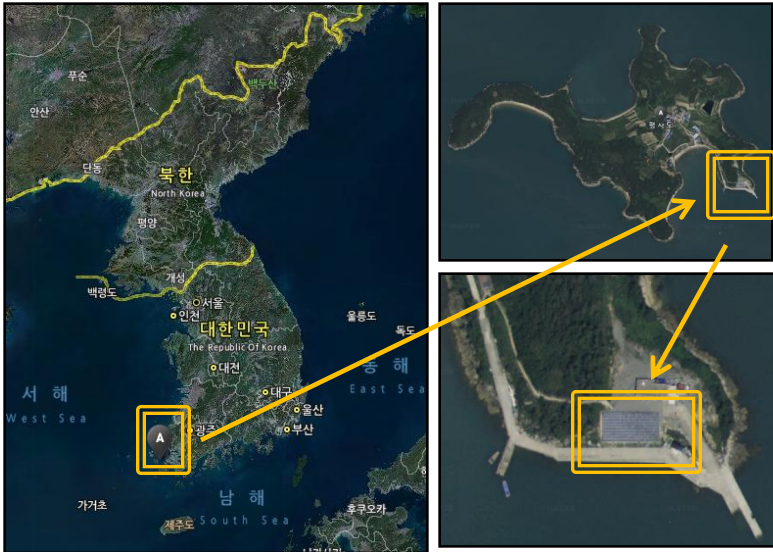
DESCRIPTION		80W
1. MECHANICAL DATA		5 Inch Cell Modules
1.1 Cell Type		Mono-Crystalline
1.2 Cell Dimensions [mm]		125 X 125
1.3 Cell Quntity per Module		36ea
1.4 Number of Busbar		3
1.5 Dimensions [L x W x T]		1192 x 526 x 35 mm
1.6 Weight		7.5 kg
1.7 Bypass Diodes		2
1.8 Connection Type		MC4 compatible
2. ELECTRICAL DATA		
2.1 Norminal Power (Pmax)	[Wp]	80
2.2 Performance tolerance	[%]	0 ~ +3
2.3 EFFICIENCY	[%]	12.70
2.4 Open-Circuit Voltage	[V]	21.81
2.5 Short-Circuit Current	[A]	4.75
2.6 Voltage at Maximum-Power Point	[V]	17.30
2.7 Current at Maximum-Power Point	[A]	4.35
2.8 Operating Temperature	[°C]	-40 ~ 85
2.9 Storage Temperature	[°C]	-40 ~ 85

※Condition : 1000W/m², 25 °C, AM1.5

Due to continuous product improvement the specifications in this Product Sheet are subject to change without notice. Specifications can vary slightly.

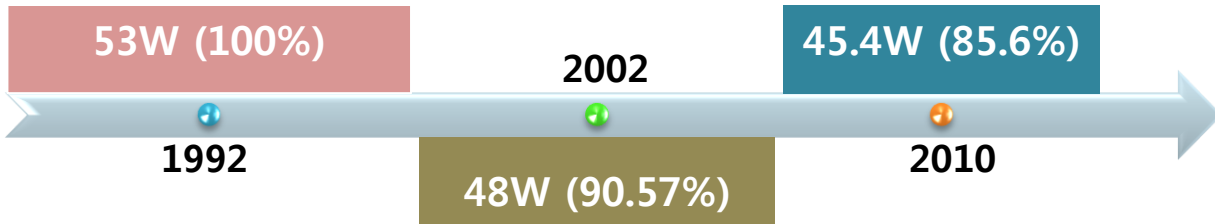
Why LS IS's Module(1)?

Pyongyangsado 45kW, South Korea, 1992



- 90kW PV modules in Hodo, Korea in 1992
- 45kW at Pyeongsado, 45kW at Oebyeongdo.
- The PV System is operating until now.

Variation of PV Module Power

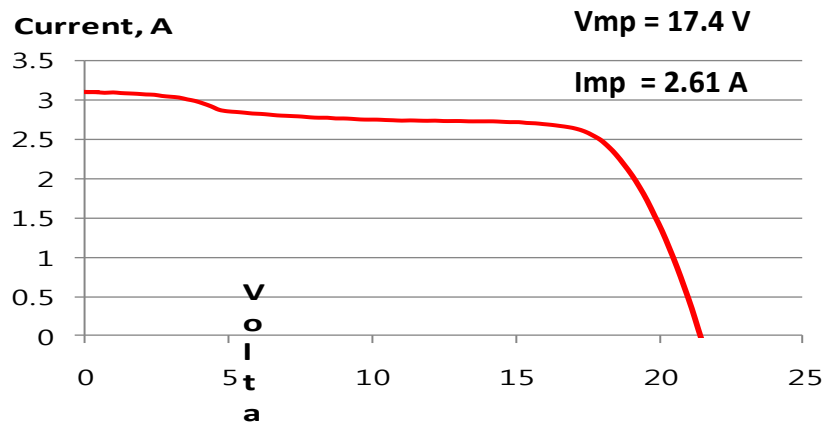


Pyongyangsado 45kW, South Korea, 1992

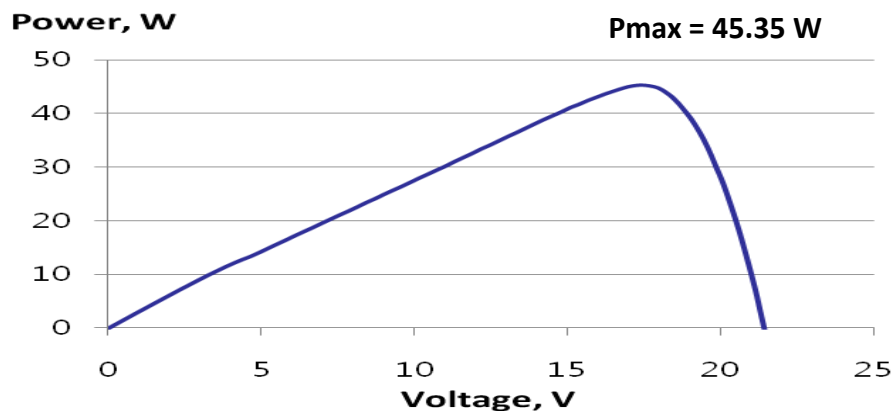


Spec.	In 1992	In 2002	In 2010
Pmax (Wp)	53	48	45.35
Voc (V)	21.7	21.7	21.4
Isc (A)	3.40	3	3.15
Vmp (V)	17.4	17.4	17.4
Imp (A)	3.05	2.76	2.61
Eff. (%)	12.5	11.3	10.7
FF (%)	71.9	73.77	67.1

Pyongyangsado Module I-V data in 2010



Pyongyangsado Module Pwr. data in 2010



2. LS Photovoltaic Inverter – On Grid Type (1)

PRODUCT IMAGE / MODEL		LSP-S003L	LSP-S004L[JP]	LSP-T030LT	LSP-T050LT	
						
Electric Feature	Phase	1 Phase		3 Phase		
	Type	Transformerless		Transformer		
	Input [DC]	Max. Power [kW]	3	4	30	50
		MPPT Range [Vdc]	150~600	100~370	370~800	
		Max. Voltage [Vdc]	600	370	900	
		Max. Current [A]	15	20	80	133
	Output [AC]	Rated Power [kW]	3	4	30	50
		Rated Voltage [Vac]	193~242	190~214	380	
		Rated Current [A]	15	20	46	76
		Frequency [Hz]	60	50/60	60	
		Current distortion	3% less			
		Control Method	PWM			
		Power Factor	99% more			
	Max. Efficiency [Euro. Efficiency]	94.5% [92.5%]	95.5% [JIS C 8961 94.5%]	96% more [94% more]		
System Feature	Size [W X H x D] (Weight [kg])	340 x 458 x 217 (18.7)	470 x 280 x 137 (14.1)	750 x 1700 x 800 (530)	750 x 1700 x 800 (670)	
	Cooling	Air Cooling	Natural Convection	Air Cooling		
	Enclosure [Option]	IP54	IP20	IP21		
	Communication	RS-485				
	Temperature	-20 °C ~50 °C	-10 °C ~40 °C	-10 °C ~50 °C		
Protection		Input under/over voltage, Grid under/over voltage, Input/output over current, Grid frequency fault, System overheat, etc.				

2. LS Photovoltaic Inverter – On Grid Type (2)

PRODUCT IMAGE / MODEL		 LSRP-S004L LSRP-S005L LSRP-S006L	 LSRP-T013L LSRP-T017L LSRP-T010L LSRP-T020L	 LSRP-T100LT LSRP-T160LT	 LSRP-T500L LSRP-T630L	 LSRP-T10HL LSRP-T13HL	
Electric Feature	Phase	1 Phase	3 Phase				
	Type	Transformerless	Transformerless	Transformer	Transformerless	Transformerless	
	Input [DC]	Max. Power [kW]	4.9 / 5.4 / 6	11 / 13.6 / 18.1 / 21.2	115 / 184	575 / 725	2 x 575 / 2 x 725
		MPPT Range [Vdc]	351~710 / 348~710 / 349~710	380~850 / 420~850 / 460~850 / 480~850	460~800	460~850	
		Max. Voltage [Vdc]	880	1000	850	950	
		Max. Current [A]	13 / 14.5 / 16A	29 / 30 / 37 / 41A	240 / 375A	1000 / 1300A	2 X 1000 / 2 X 1300
		Rated Power [kW]	3.75 / 4.2 / 4.6	10 / 12.4 / 16.5 / 19.2	100 / 160	500 / 630	1000 / 1300
	Output [DC]	Rated Voltage	210~250Vac	400Vac +N	400Vac +N	315Vac	315Vac +N
		Rated Current [A]	17.9 / 20 / 22	18 / 18 / 29 / 29	158 / 232	920/1220	2 x 920 / 2 x 1220
		Frequency [Hz]	47.5~52.5	50~60			
		Current distortion	t.b.d	2.5% less	3% less		
		Control Method	PWM				
		Power Factor	100%	95% more	90% more		
		Max. Efficiency [Euro. Efficiency]	97.3% [96.8%] 97.4% [96.9%] 97.4% [96.8%]	98.0% [97.4%] 98.0% [97.5%] 98.0% [97.8%] 98.2% [97.8%]	96% more [95% more]	98.1% more [97.6% more]	98.1% more [97.6% more]
System Feature	Size [W X H x D] (Weight [kg])	320 X 720 X 250 (27 / 28 / 28)	535 X 601 X 277 (39)	1200 X 2000 X 600 (860 / 920)	2800 X 2900 X 600 (1800) 2800 X 2190 X 600 (1800)	3020 X 3560 X 5400 (3600)	
	Cooling	Natural Convection		Air Cooling	Liquid Cooling		
	Enclosure [Option]	IP66	IP65	IP21 [IP54] / IP21	IP43 [IP54] / IP54	IP54	
	Communication	RS485	RS-485, EtherNet, USB				
	Temperature	-20 °C ~60 °C	-25 °C ~55°C	-10 °C ~45 °C / -10 °C ~40 °C	-10 °C ~50 °C / -10 °C ~45 °C	-10 °C ~50 °C	
Protection	Input under/over voltage, Grid under/over voltage, Input/output over current, Grid frequency fault, System overheat, etc.						

3. LS Module / LS Inverter Certification & Standards

MODULE	TUV	J-PEC	JET	UL
5 inch : 180/188/190/192Wp	O	O		
6 inch : 240/242/245/247Wp	O		O The First Korean Company got JET	O

INVERTER	CE	DK5940	RD1663	RD661	VDE0126	EN50438	EN61000 EN60529	UL-CSA
LSRP-S series (SERI004L~06L)	O	O					O	<u>1st Q 2011</u>
LSRP-T0 series (10L~20L)	O	O	O	O	O	O	O	
LSRP-T1 series (00LT~160LT)	O	O	O				O	
LSRP-T series (500L~630L)	O						O	
LSRP-T**HL series (10HL~13HL)	O						O	

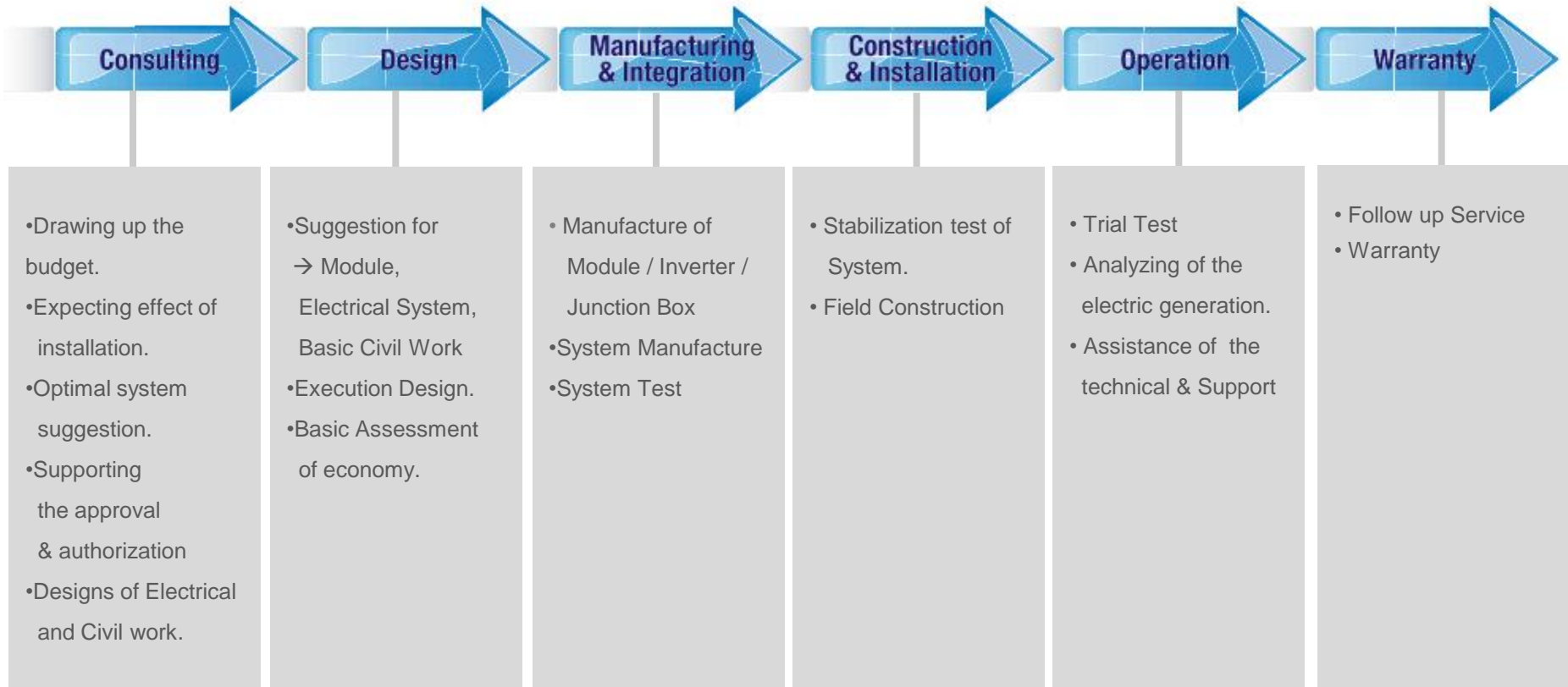


PART 2

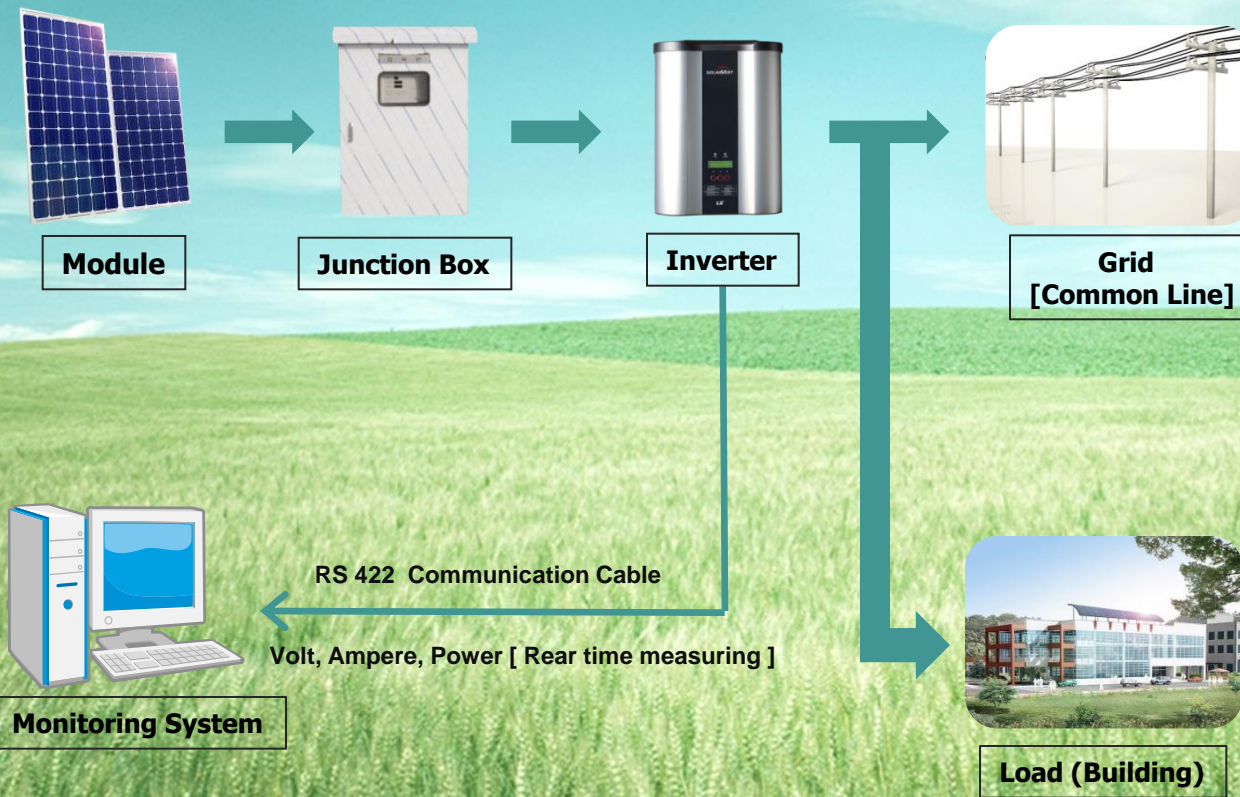
LSIS Solar System

1. Total Solution - **“What we do?”**
2. Grid Solar System for private use
3. Power Plant

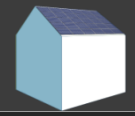
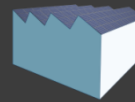
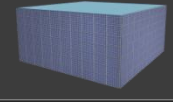
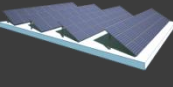
LSIS provides our customers with the highest technical service through whole process from consulting of Photovoltaic System to repairing service.



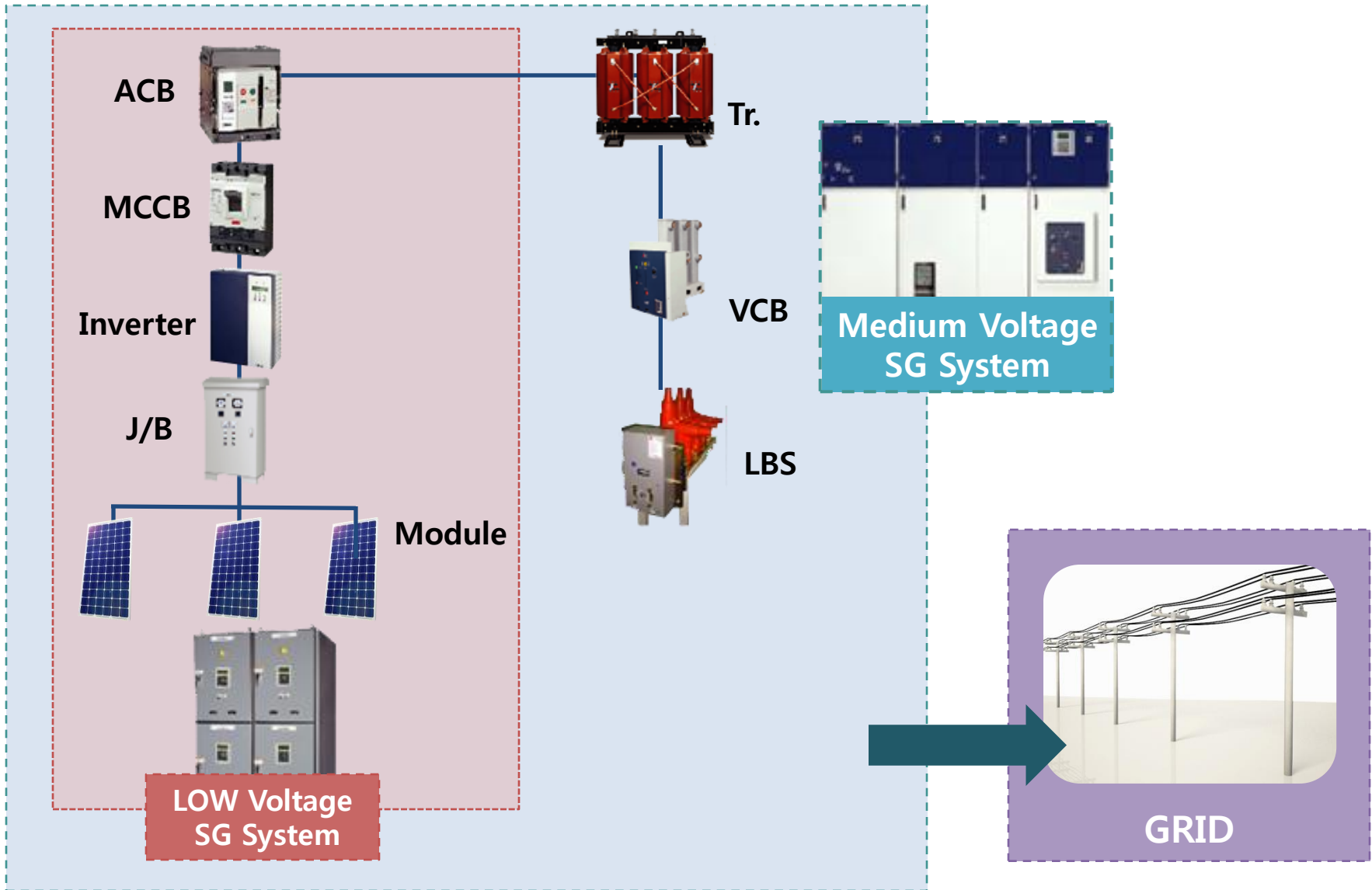
2. Grid Solar System for private use



Applications

-  **IN ROOF AND ROOFTOP ARRAYS ON RESIDENTIAL BUILDINGS**
-  **IN-ROOF/ROOFTOP ARRAYS ON SMALL TO MEDIUM-SIZE COMMERCIAL AND INDUSTRIAL BUILDINGS**
-  **PACADE (BIPV) INSTALLATIONS**
-  **GROUND MOUNTED INSTALLATIONS**

3. Power Plant (1)



3. Power Plant (2)



COMPACT SWITCH GEAR SYS.

- Architecture area decrease up to 76%
- Architecture cost decrease



GIPAM 2200DG

- Electric Relay
- [OCR, OCGR, UVR, OVR, OVGR, DPR, UPR, DQR, UFR, OFR, DOCR, DOCGR]

E-LBS



SM-VCB



GIMAC IV / GIMAC i

- Electric Relay
- Solae generated meter [V,A,W,WH,F,PF,Vo]



AC MCCB / ACB [Susol]

- For the protect grid line, Use the high circuit and high capacity Susol.
- MCCB : 100~800[AF] / 16~800[AT]
 - 2,3,4, [POLE]
- ACB : 630~6300 [AF] / 200~6300[AT]
 - 3, 4, [POLE]



T/R PANEL

- 3P 380-220V / 22.Kva
- Max. Capacity 12.5 MVA



T/R CERTIFICATION by KEMCO

- High efficiency (Up to 3,000KVA)
- Low noise



ON GRID INVERTER / DC MCCB



MONITORING SYSTEM / MODULE



GIPAM 115F1

- Electric Relay
- OCR, OCGR, UVR, OVR, OVGR, SGR, POR

**LSIS TOTAL SOLUTION
ALL PRODUCTS
MANUFACTURED BY LSIS**

Public Institution Type



PV Plant Type



Pergola Type





PART 3

LSIS Know how & Production

1. Know-How & Production Line Information

1. Know-How & Production Line Information

Experience in field

LSIS has **26 years** experience in the field of Photovoltaic Systems.

Various System experience

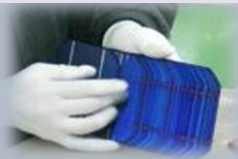
LSIS has various **system experience**.
Grid Connection / Stand-Along / Power Plant.

Module manufacturing (2011) - **140MW** in Cheon An factory, South Korea

Incoming Inspection



Cell Inspection



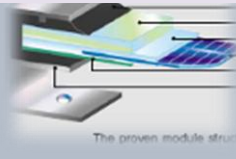
Auto-Tabbing



Layup



Stacking



Voltage Measure



Laminating



Trimming & Tapping



Visual Inspection



Frame Assembly



Final Inspection



Outgoing Inspection





PART 4

LSIS References

LSIS Breaks into Japanese Solar Module Market

LSIS has become **the first Korean firm** delivering more than 20MW PV systems to Japanese market .
LSIS will provide a whole PV Home System - modules, inverters, switch gear systems.



Every Single Month
More than 400 Home system Kit(4kW) in **Japan**

LSIS



Young Gwang (2.5MW)



Young Joo (1.0 MW)



Changwon (Filtration Plant 40kW)



Samcheonpo Power Plant (100kW)



Ulsan Moonsu International Archery Training Center 30kW



Korail Office Building 90kW



Kang Seo Parking Center 55kW



HO Island (90kW)



Nonsan Health Management Center 42kW



N Provincial Office (100kW)



**Gwangju
(Police Station
40kW)**



**G.N
Provincial
Office
(100kW)**



**Kimhae
agriculture
technical
center 20kW**



**Busan Culture
and Ice skating
Center 106.2 kW**



**Worldcup
Pagora
type**



**Kimhae
Jinyoung water
treatment
center 25 kW**



**Seoul Science
Park
(50kW)**



**Seoul Human
Resource
Development
Center 30kW**



**Busan Ducksan
Water
purification
Center 133 kW**



**Daejeon City
Hall 20kW**



**Gwanak Gu
physical training
Center 50kW**



**Busan city
Highway office
35kW**

Reference - Public Institution & PV Home System



Sunbong Children Education Center 30 kW



Ehwa Women's Uni. (10kW)



Korail Railway Museum 60kW



CHOSUN University (53kW)



SeoKyoung Univ. 97kW



PV Home System - Deajeon (3kW)



Hanwoori school



Ulsan Hwa Am middle School 30kW



PV Home System - Deajeon(3kW)



Ulsan Su Am Elementary School 30kW



Northern Seoul Dreaming Forest 70kW



PV Home System - Chongnam 3kW

Mopo Gu Office Center 100kW
 Daegu Seobu technical high school 30kW
 1million Green Home PV System
 Gwanak Gu physical training Center 50kW
 Seoul Human Resource Develop Center 30kW
 Kimhae agriculture technical center 20kW
 Jinyoung Sewage disposal center 25kW
 Busan city Highway office 35kW
 Daejeon City Hall 20kW
 Gyeongnam Development Institute 35kW
 Gyeoje agriculture technical center 25kW
 Seonbong Preschool 30kW
 Yangsan Sewage disposal center 50kW
 Cheongju Sheltered housing 30kW
 Cheongju badminton ground 20kW
 Nonsan Health Management Center 42kW
 Seongbuk Gu young people training ct 10kW
 Daegu Seobu technical high school 30kW
 Okcheon gun 100kW
 Yangpyung old man sheltered housing Ct 10kW
 Yangpyung agricultural market 50kW
 Heoinggan island 45kW (Standalone system)
 Seongbuk Gu office 10kW

Cheongju office of Education 40kW
 Okcheon Gun office 6kW
 Guemcheon Gu Rain Pump center 30kW
 Guemcheon Gu old man Sheltred housing 10kW
 Guemcheon Gu physical training Center 30kW
 Mapo Gu residents convenience center 10kW
 Nowon Gu madule Park 15kW
 Nowon Gu pre-school
 Rural Development administration 70kW
 Jamsil 3-dong residents office 3kW
 Jeongreung welfare center 10kW
 Seodaemoon Gu office 70kW
 Geumbu kind garden 10kW
 Korail Office Building 90kW
 Seodaemoon Gu office 50kW
 Jongro Samchungdong residents office 10kW
 Donghae Police station 26kW
 Seoul Plant biology Center 25kW
 Dream Woods in North Seoul 70kW
 Wando Cheonghae sanitarium 20kW
 Wando Gogeum sanitarium 20kW
 Wando Cheonghae sanitarium 20kW

YoungGwang Private Power Plant 2,500kW
 Hanwha Gapyung Power Pant 163kW
 Youngju Private Power Plant 1,000kW
 Cheonan East Police Station 45kW
 Seoul agricultural techniques 45kW
 Jukjeon library 21kW

Korea the Red Cross central blood bank 20kW
 Busan local offical education institute 20kW
 Gangseogu Garage 55kW
 YangPyung YangDong Filtration Plant PV System
 Ducksan Water Filtration Plant 133kW PV System

LG-Philips PV System 10kW
 Suwon high school for Agricultural Science 20kW
 Seoul C.P 10kW
 Masan Uni. PV System 50kW
 Incheon International Airport PV System 100kW
 Korea National Housing Corp. PV System 150kW
 Korea Electric Power Corp. Yeosu Office 10kW

Yuldo PV System 35kW (Standalone system)
 Rural Development administration 70kW
 Jeongreung welfare center 10kW
 Seongbuk young people training ct 10kW

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Gangwon Land PV System 5kW
 Gyeongbuk Institute for Marine Bio 20kW
 Changwon Filtration Plant 50kW
 Ulsan Grand Park 55kW
 Ehwa Women's Uni. PV System 10kW
 Busan Filtration Plant PV System 108kW

Hwangiedo PV System 60kW
 Suwon high school Agricultural Science 10kW
 Gyeonggido Bio Center 20kW
 Cheonma Mt. 5kW
 Gwangju Police Office 40kW

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GS Institute BIPV System 3kW
 Samcheonpo Power Plant 100kW
 Jeonnam Provincial Office PV System 10kW
 Busan college PV System 30kW
 Guam middle school PV System 30kW
 Seoul Science Park PV System 50kW
 Ehwa Women's Uni. BIPV System 10kW
 KORAIL PV System 60kW
 Ansan Yukdo PV System 35kW
 Deungchon Church PV System 24kW
 Seunggawon PV System 15kW

Chosun Uni. Dormitory PV System 53kW
 Dongwoo Industry College PV System 10kW
 Korea Government Building PV System 10kW
 Myungji Uni. PV System 10kW
 Chungbuk Science Uni. PV System 10kW
 Korea Electric Power Research Institute
 PV System 50kW
 KAIST PV System 30kW
 Korea Institute of Energy Research (KIER)
 PV System 10kW
 Daejun EXPO 12kW

2005

Thank you



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LEADING INNOVATION, CREATING TOMORROW