

Project Name : FVS IREL

Project No. : 56

Location : Europe/Czech Republic/Brno

Grid Voltage : 400V(230V/400V)


System Overview


158 × LONGI LR4-72HIH-450M(Střecha 1)


Azimuth : 0°, Tilt : 35°, Peak Power : 71.1kWp


64 × LONGI LR4-72HIH-450M(Střecha 2)


Azimuth : -90°, Tilt : 35°, Peak Power : 28.8kWp


 1 × SUN2000-36KTL-M3

 80 × SUN2000-450W-P

 1 × SUN2000-36KTL-M3

 78 × SUN2000-450W-P


 1 × SUN2000-36KTL-M3

 64 × SUN2000-450W-P

Technical Specifications			
Total Number of PV Modules:	222	Annual Energy Yield (Approx.):	98.86MWh
Peak Power:	99.9kWp	Number of Inverters:	3
Performance Ratio (Approx.):	84.26%	Rated AC Power:	108.0kW
Specific Energy(Approx.):	989.58kWh/kWp/year	DC/AC:	0.93
Cable Loss (in % of PV Energy):	1.14%	Number of Optimizers:	222

Design evaluation

Group1

1XSUN2000-36KTL-M3		
Peak Power:	36.0kWp	 SUN2000-36KTL-M3
Total Number of PV Modules:	80	
Number of Inverters:	1	
Max. AC active power(cosφ=1):	39.6kW	
Grid Voltage:	400V(230V/400V)	
DC/AC:	1.0	

Input MPPT A : Střecha 1
32 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°
Input MPPT B : Střecha 1
16 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°
Input MPPT C : Střecha 1
16 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°
Input MPPT D : Střecha 1
16 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°

	MPPT A	MPPT B	MPPT C	MPPT D
Number of Optimizers:	32	16	16	16
Number of PV Strings:	2	1	1	1
PV Modules per String:	16	16	16	16
PV String Peak Power (input):	14.4kWp	7.2kWp	7.2kWp	7.2kWp
Normal PV String Voltage:	664.0V	664.0V	664.0V	664.0V
PV String Startup Voltage:	✓ 200.0V	✓ 200.0V	✓ 200.0V	✓ 200.0V
Inverter Startup Voltage:	200.0V	200.0V	200.0V	200.0V
Max. PV String Voltage:	✓ -	✓ -	✓ -	✓ -
Max. DC Voltage:	-	-	-	-
Max. PV String Current:	✓ 16.0A	✓ 8.0A	✓ 8.0A	✓ 8.0A
Max. Inverter DC Current:	26.0A	26.0A	26.0A	26.0A

Group2

1XSUN2000-36KTL-M3

Peak Power:	35.1kWp
Total Number of PV Modules:	78
Number of Inverters:	1
Max. AC active power(cosφ=1):	39.6kW
Grid Voltage:	400V(230V/400V)
DC/AC:	0.97



SUN2000-36KTL-M3

Input MPPT A : Střecha 1

30 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°

Input MPPT B : Střecha 1

16 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°

Input MPPT C : Střecha 1

16 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°

Input MPPT D : Střecha 1

16 × LONGI LR4-72HIH-450M, Azimuth : 0°, Tilt : 35°

	MPPT A	MPPT B	MPPT C	MPPT D
Number of Optimizers:	30	16	16	16
Number of PV Strings:	2	1	1	1
PV Modules per String:	15	16	16	16
PV String Peak Power (input):	13.5kWp	7.2kWp	7.2kWp	7.2kWp
Normal PV String Voltage:	622.5V	664.0V	664.0V	664.0V
PV String Startup Voltage:	✓ 200.0V	✓ 200.0V	✓ 200.0V	✓ 200.0V
Inverter Startup Voltage:	200.0V	200.0V	200.0V	200.0V
Max. PV String Voltage:	✓ -	✓ -	✓ -	✓ -
Max. DC Voltage:	-	-	-	-
Max. PV String Current:	✓ 15.0A	✓ 8.0A	✓ 8.0A	✓ 8.0A
Max. Inverter DC Current:	26.0A	26.0A	26.0A	26.0A

Group3

1XSUN2000-36KTL-M3

Peak Power:	28.8kWp
Total Number of PV Modules:	64
Number of Inverters:	1
Max. AC active power(cosφ=1):	39.6kW
Grid Voltage:	400V(230V/400V)
DC/AC:	0.8



SUN2000-36KTL-M3

Input MPPT A : Střecha 2

16 × LONGI LR4-72HIH-450M, Azimuth : -90°, Tilt : 35°

Input MPPT B : Střecha 2

16 × LONGI LR4-72HIH-450M, Azimuth : -90°, Tilt : 35°

Input MPPT C : Střecha 2

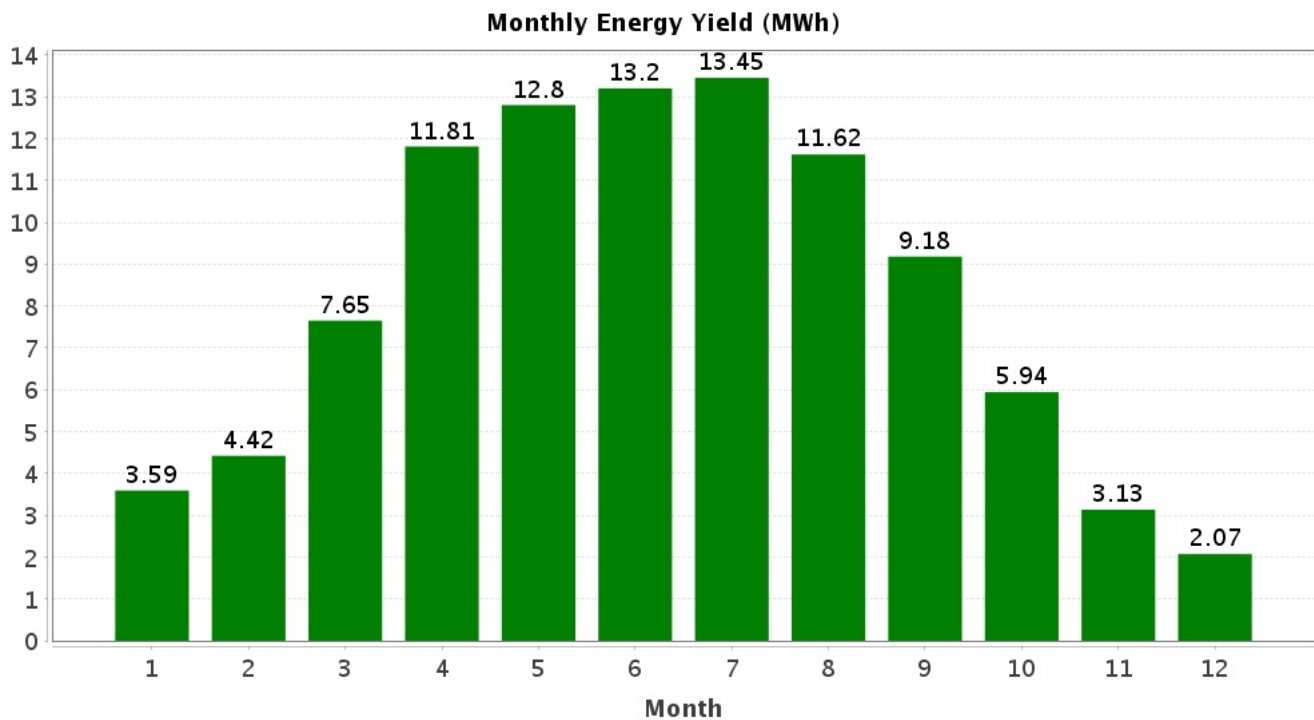
16 × LONGI LR4-72HIH-450M, Azimuth : -90°, Tilt : 35°

Input MPPT D : Střecha 2

16 × LONGI LR4-72HIH-450M, Azimuth : -90°, Tilt : 35°

	MPPT A	MPPT B	MPPT C	MPPT D
Number of Optimizers:	16	16	16	16
Number of PV Strings:	1	1	1	1
PV Modules per String:	16	16	16	16
PV String Peak Power (input):	7.2kWp	7.2kWp	7.2kWp	7.2kWp
Normal PV String Voltage:	664.0V	664.0V	664.0V	664.0V
PV String Startup Voltage:	✓ 200.0V	✓ 200.0V	✓ 200.0V	✓ 200.0V
Inverter Startup Voltage:	200.0V	200.0V	200.0V	200.0V
Max. PV String Voltage:	✓ -	✓ -	✓ -	✓ -
Max. DC Voltage:	-	-	-	-
Max. PV String Current:	✓ 8.0A	✓ 8.0A	✓ 8.0A	✓ 8.0A
Max. Inverter DC Current:	26.0A	26.0A	26.0A	26.0A

Details



	Number of PV Inverters	PV Inverter Rated AC Power	Total Number of PV Modules	Peak Power	Number of Optimizers
FVS IREL	3	108.0 kW	222	99.9 kWp	222
Power Generation Unit	3	108.0 kW	222	99.9 kWp	222
Group1	1	36.0 kW	80	36.0 kWp	80
Group2	1	36.0 kW	78	35.1 kWp	78
Group3	1	36.0 kW	64	28.8 kWp	64

	✓ DC Power Cable	✓ AC Power Cable	Total
Power Loss under Rated Conditions	769.12W	368.57W	1137.69W
Relative Power Loss at Rated Voltage	0.77 %	0.34 %	1.11 %
Cable Cross-sectional Area/Length	6mm ² /960.0 m	25mm ² /65.0 m	

Signature:_____

*Note: The displayed energy yield is an estimated value, and is calculated through a formula. SmartDesign is not liable for any difference between the actual energy yield and the displayed value. The difference depends on various conditions, such as the PV module stains or efficiency fluctuation.