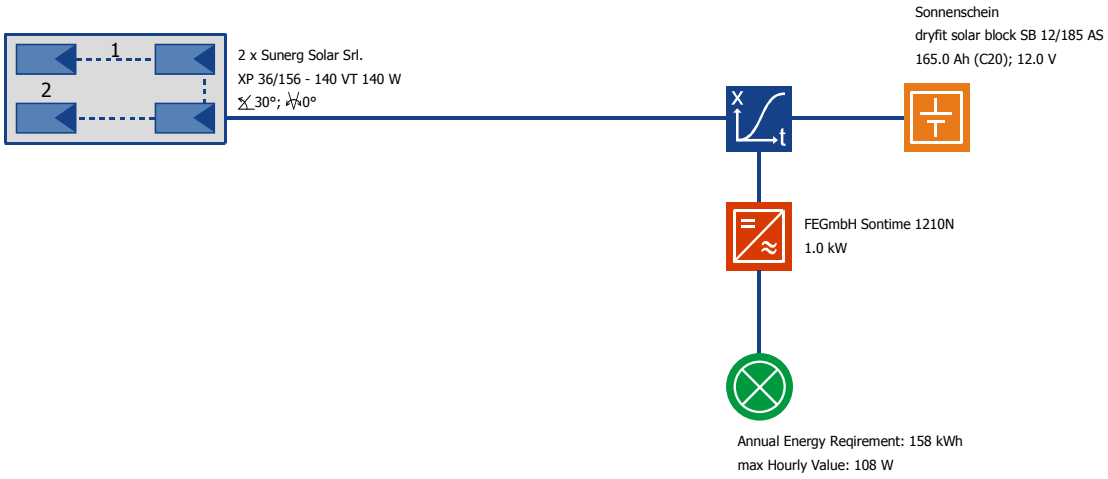
Project Name:	kit ECO iluminat ieftin	04-02-2016
Variant Reference:	System Variant	



Location:	BUCHAREST/OTOPENI	
Climate Data Record:	BUCHAREST/OTOPENI (1986-2005)	
PV Output:	280.0	Wp
Gross/Active PV Surface Area:	2.47 / 2.46	m²

PV Array Irradiation:	4,028.3	kWh
Energy Produced by PV Array:	295.25	kWh
Consumption Requirement:	157.68	kWh
Consumption Covered by Solar Energy:	136.08	kWh
Consumption Not Covered by System:	21.6	kWh

Solar Fraction:	86.3	%
Performance Ratio:	29.7	%
Specific Annual Yield:	486.0	kWh/kWp
CO2 Emissions Avoided:	84	kg/a
System Efficiency:	3.4	%
PV Array Efficiency:	7.3	%

The results are determined by a mathematical model calculation. The actual yields of the photovoltaic system can deviate from these values due to fluctuations in the weather, the efficiency of modules and inverters, and other factors. The System Diagram above does not represent and cannot replace a full technical drawing of the solar system.

System in Stand-Alone Operation

Location:	BUCHAREST/OTOPENI	PV Output:	280.0 Wp
Climate Data Record:	BUCHAREST/OTOPENI	Gross/Active PV Surface Area:	2.5 m² / 2.5 m²
Number of Arrays:	1		

Array 1: Array Name

Output:	0.28 kW	Ground Reflection:	20.0 %
Gross/Active Solar Surface Area:	2.5 m² / 2.5 m²	Output Losses due to...	
PV Module	2 x	deviation from AM 1.5:	1.0 %
Manufacturer:	Sunerg Solar Srl.	deviation from Manufacturer's Specification:	2.0 %
Model:	XP 36/156 - 140 VT	in Diodes:	0.5 %
Nominal Output:	140 W	due to Pollution:	0.0 %
Power Rating Deviation:	0 %		
Efficiency (STC):	11.3 %		
No. of Modules in Series:	1		
MPP Voltage (STC):	18 V		
Orientation:	0.0 °		
Inclination:	30.0 °		
Mount:	with Ventilation		
Shade:	No		

Battery

Manufacturer:	Sonnenschein	Mean Charge Efficiency:	85.0 %
Model:	dryfit solar block SB 12/185 AS	Mean Discharge Efficiency:	99.0 %
Nominal Voltage:	12.0 V	Charge Controller	
C20 Capacity:	165.0 Ah	Lower Battery Discharge Threshold:	30.0 %
Self Discharge:	0.1 %/Tag		

Stand-Alone System Inverter

Manufacturer:	FEGmbH	Nom. DC Voltage:	12.0 V
Model:	Sontime 1210N	Stand-by Consumption:	0.0 W
AC Power Rating:	1.0 kW	Efficiency at Nominal Output:	91.0 %
Nom. AC Voltage:	230.0 V		

Individual Appliances Total Consumption: 158 kWh

TV (occasional use)		Model: User-Dependent Appl.	117 kWh
New		Model: Light	41 kWh

Simulation Results for Total System

Irradiation onto Horizontal:	3,511 kWh	Battery Losses:	29 kWh
PV Array Irradiation:	4,028 kWh	Charge Condition at Simulattion Start:	30.0 %
Irradiation minus Reflection:	3,854 kWh	Charge Condition at Simulattion End:	30.0 %
Energy Produced by PV Array:	295 kWh	Solar Fraction:	86.3 %
Consumption Requirement:	158 kWh	Performance Ratio:	29.7 %
Direct Use of PV Energy:	38 kWh	Final Yield:	1.3 h/d
Consumption Not Covered by System:	22 kWh	Specific Annual Yield:	486 kWh/kWp
PV Array Surplus:	76 kWh	System Efficiency:	3.4 %
Consumption Covered by Solar Energy:	136 kWh	Array Efficiency:	7.3 %
Battery Discharge:	152 kWh	Inverter Efficiency:	71.7 %
Battery Charge:	181 kWh	Battery Efficiency:	83.9 %

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