

# PV-plant layout with KACO inverters

## Project

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## Solar radiation and estimated yield

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### Solar radiation

Location: Aberdeen  
Radiation: 900 kWh/m²a

### orientation

orientation: 0° (South)  
roof inclination: 30°

### Estimated yield

fed-in power: 3994.90 kWh  
emoluments for infeeds: 0.287 GBP  
annual emoluments: 1148.13 GBP  
specific yield (kWh/kWp): 924.75 kWh/kWp

## PV-modules

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### PV-modules

Schüco MPE 240 PS 04

### PV-module temperature

min. module temperature: -10°C  
max. module temperature: 70°C

### module switching variant

number of modules per string: 18  
number of strings: 1  
Sum of modules: 18

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## Plant layout

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inverter(s)		
KACO Powador 4400 (3600xi)		
Generator power		
max. Generator power across inverter (kWp):	4.40 kW	ok
Power of PV generator (kWp):	4.32 kW	
Power ratio PV-Generator/inverter (AC):	1.20	
min. MPP voltage		
min. MPP voltage of inverter:	350.00 V	ideal
MPP voltage of PV plant (70°C):	412.33 V	
Max. no-load voltage		
max. no-load voltage of inverter:	800.00 V	ideal
max.no-load voltage (PV plant) at -10°C -10°C:	770.89 V	
Generator current		
max. generator current of inverter:	12.00 A	ideal
generator current in MPP:	7.91 A	
System voltage of PV generator (no-load voltage STC)		
System voltage PV generator:	666.00 V	ideal
max. System voltage (modules):	1000 V	

## Dimensioning of cables

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DC cables —————		AC cables —————	
PV-Generator => Generator connection box —————		inverter(s) => meter —————	
single length:	10.00 m	single length:	10.00 m
cross-section:	4.00 mm²	cross-section:	6.00 mm²
Losses:	5.59 W (0.129%)	Losses:	17.95 W (0.434%)
Generator connection box => inverter(s) —————		sub-distribution => meter (3-phase grid-feeding) —————	
single length:	0.00 m	single length:	10.00 m
cross-section:	4.00 mm²	cross-section:	4.00 mm²
Losses:	0.00 W (0.000%)	Losses:	72.13 W (0.451%)

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## Yield per month

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### Monthly distribution

January:	23.74 GBP	July:	172.20 GBP
February:	43.78 GBP	August:	149.99 GBP
March:	88.19 GBP	September:	103.33 GBP
April:	120.89 GBP	Oktober:	59.27 GBP
May:	159.78 GBP	November:	28.90 GBP
June:	180.21 GBP	December:	17.87 GBP
		Total year:	1148.13 GBP

Note: The calculated yields are estimated values only.  
All indicated amounts are excluding taxes.