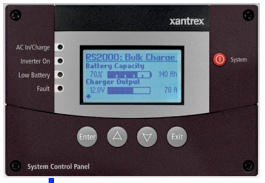
**3000 Watt off-grid Cabin set up:**

- 14 x 6V batteries rated 220 Ah @ 20h discharge (1540 Ah)
- System is wired for 12V
- Copper buss bars offer versatility for future expansion
- Cat5e and AC electrical cables trenched from garage (location of batteries and inverter) to cabin 40 feet away.
- 810W of solar panels

**Victron Energy BMV 600s Battery Monitor**

linked via 100 feet of ethernet cat5e weatherproof shielded cable, buried between cabin and garage.




**Xantrex MS3000 Inverter with optional Control Panel**

linked via 70 feet of ethernet cat5e weatherproof shielded cable, buried between cabin and garage.

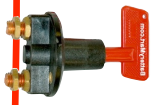
**Copper Plate Specs (other names: bus/ground bar)**

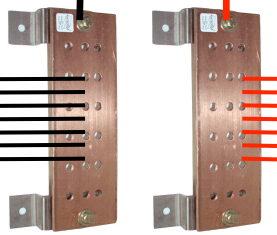
Based on 1000 AMPS Per Square Inch section)

1/4" x 1" = 250 AMPS
1/2" x 1" = 500 AMPS

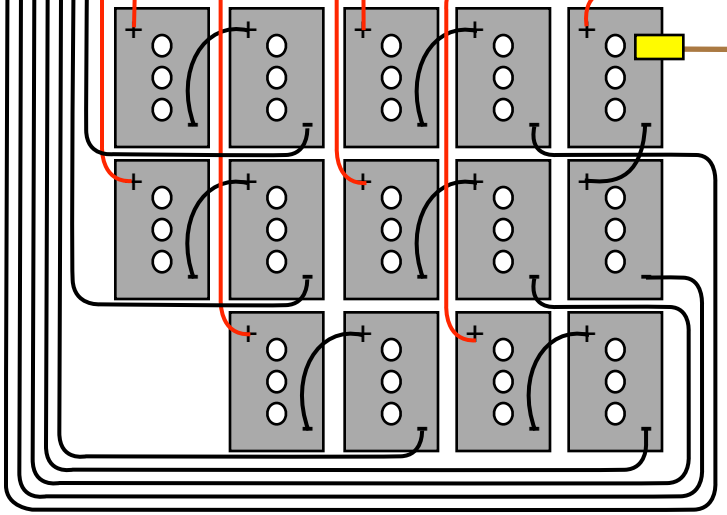
**Class T Fuse Block + Fuse** 350 Amps

**Battery Cut-Off Switch** 500 A






**Garage breaker and distribution panel**



**Temperature Sensor** regulates charge current

**Copper Wire Specs (welding cables for flexibility)**

American Wire Gauge / AMPS @ 75° C insulation

| | |
|---|---|
| OOOO | 230 |
| OOO | 200 |
| OO | 175 |
| O | 150 |
| 1 | 130 |
| 2 | 115 |
| 3 | 100 |
| 4 | 85 |

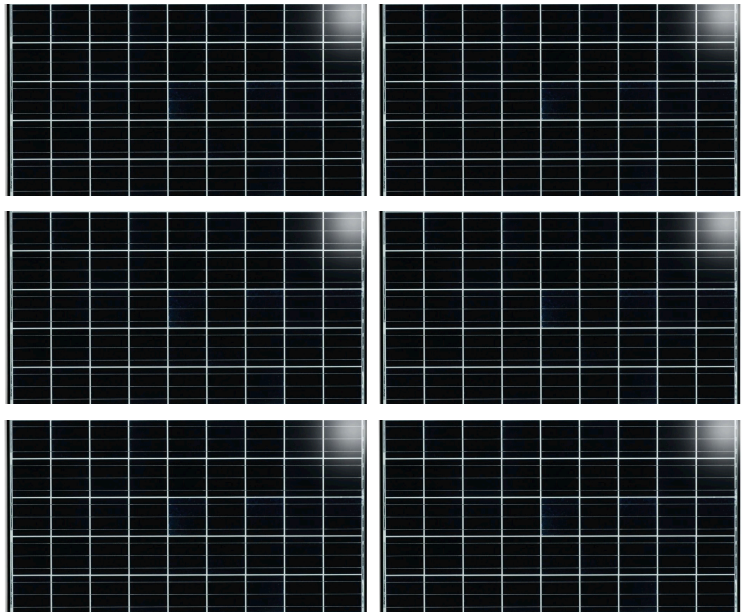

**Honda EU 3000 Generator**

Housed in an enclosure inside the garage, vented to the outside with two 100+ cubit ft / minute AC muffin fans directly plugged into generator

enclosure is completely lined with cement board in case the generator would overheat

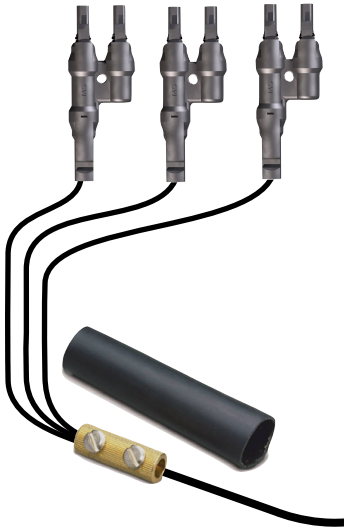
**810 PV Watts for a 12V system**
Mounted on a 6” schedule 40 metal pole
PV rack is grounded via bare copper cable, which is strung through inside of metal pole to a grounding rod pounded 5 feet deeper than the bottom of the concrete foundation.

Each set of MC4 connectors is plugged into an adapter, then the remaining 3 lines are spliced together at the top of the pole



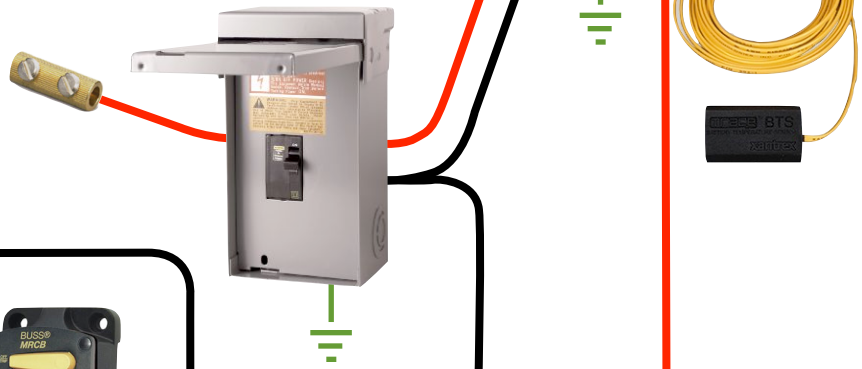
**135 GX-LPU Kyocera 12 V Solar Panels**
maximum power: 17.7 V & 7.63 Amps

72.4” - connect, 29.9” + connect (male)
dimensions: 59.1” x 26.3”
MC4 latching cables



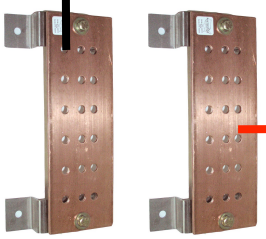
**Xantrex C60 Solar Charger**
with optional Integrated Faceplate DVM for C-Series and Xantrex Battery Temperature Sensor

**Breaker Box for GFP**



**#2 AWG, 90° C insulation wire**

for interior wiring from PVGFP connection to bus bars, cable lug needed



**Cooper Bussmann 70 Amp resettable circuit breaker**

on positive wire for reverse feedback protection

**PV Connections ( x3 panels ) MC4 type**

3x F-M-M connectors


3x M-F-F connectors


80’ cable (#2 AWG, 90° C insulation) to maintain <5 % voltage drop, cut in half to make 2 x 40’ pieces to route into garage

3x 10’ M-F cable for combining panels (cut ea. in half)

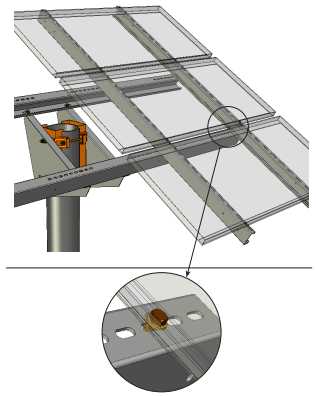
dozens of zip ties

#2 - #8 cable splicer (x2)


**Outback Power 80 Amp single pole PV ground-fault detector interrupter**

customize Square D breaker box for mounting GFP inside

**Iron Ridge Universal Top-of-Pole Mount UNI-TP/08LL**

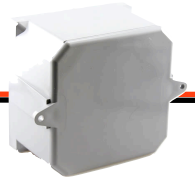


**RAB Weatherproof MR16 fixture**
die cast aluminum with powder finish, “O” ring sealed, brass and stainless steel hardware, 180° pivot, ~ $45 ea

**RAB R14-3B faceplate + B3B rectangular box**
three hole face plate for sensor + spot lights, ~ $5 ea

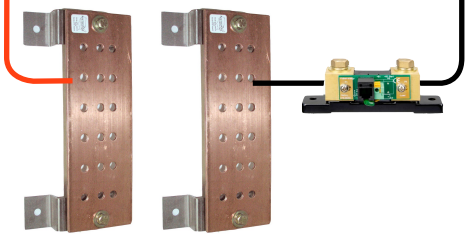
**Light Switch**
standard 110V AC light switch used x3, DC current < 1 Amp for each circuit

**12V DC Junction Box**
mounted in garage attic, from here one line feeds the triple switch in the garage, the other runs underground to the cabin



**RAB Stealth 12V motion sensor**
programable for 5 seconds to 12 minutes time adjustment, 1 watt power consumption, 96 watts max output, ~ $100

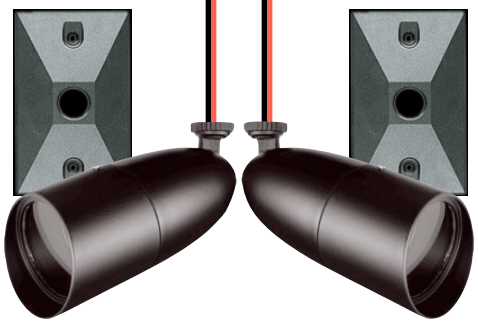
**Inline Maxi Fuse Holder**
use with 5 amp 12 V rated automotive mini-fuses



**Brightest SMD MR16 330 lumen LED**

pure white 4.6 watt, 45 degree spot illumination, -20°C to 120°C operating, ~ $23

**SPT-1 #18/105° wire**
usually in 250 foot spools, ~ $30



**RAB R14-1B**
one hole face plate for spot light over service door aimed at cabin + standard rectangular box

**RAB R14-1B**
one hole face plate for spot light by work bench + standard rectangular box