

Five-star luxury on the water

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|-------------------|---|
| Your ship: | 40-50 ft motoryacht with all the comforts |
| Use: | Longer trips and extended periods without shore power |
| Details: | Luxurious onboard facilities |

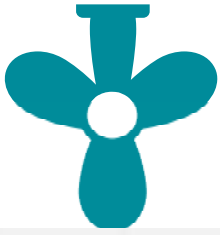
Your sailing profile

You often make long trips and despite the luxury onboard facilities do not want to have to constantly depend on shore power. Ease and comfort are important and you like to have the same conveniences as you do at home while also being able to use a winch when moored in the harbour. Your comprehensive navigation system is spread across various indoors and outdoors screens, and you have a hydraulic, remote controlled passerelle. You also expect the components of the electric system to be seamlessly compatible with each other and provide a carefree system performance. Wherever you are, you also need complete security of service should there be a malfunction.

Your onboard consumers include:

DC consumers:

| description | total x capacity x hour | daily consumption |
|--|--------------------------|-------------------|
| Navigation and deck lighting | 8 x 25 Watt x 8 hour | = 1.60 kWh |
| Navigation and communication equipment | 6 x 40 Watt x 12 hour | = 2.88 kWh |
| Interior lighting | 30 x 20 Watt x 4 hour | = 2.40 kWh |
| Water, shower, toilet and bilge pumps | 8 x 250 Watt x 0.2 hour | = 0.40 kWh |
| Large refrigerator(s) | 2 x 80 Watt x 8 hour | = 1.28 kWh |
| Freezer(s) | 2 x 80 Watt x 8 hour | = 1.28 kWh |
| Water maker | 1 x 400 Watt x 0.4 hour | = 1.60 kWh |
| Mooring winch | 1 x 2000 Watt x 0.1 hour | = 0.20 kWh |
| Automatic passerelle | | |
| Gangway (only on generator, shore power or engine) | 1 x 2000 Watt x 0 hour | = 0 kWh |
| Several small consumers | 20 x 20 Watt x 4 hour | = 1.60 kWh |



FAR-OFF DESTINATIONS

DAY TRIPS • WEEKENDS AWAY • FAR-OFF DESTINATIONS • CIRCUMNAVIGATION



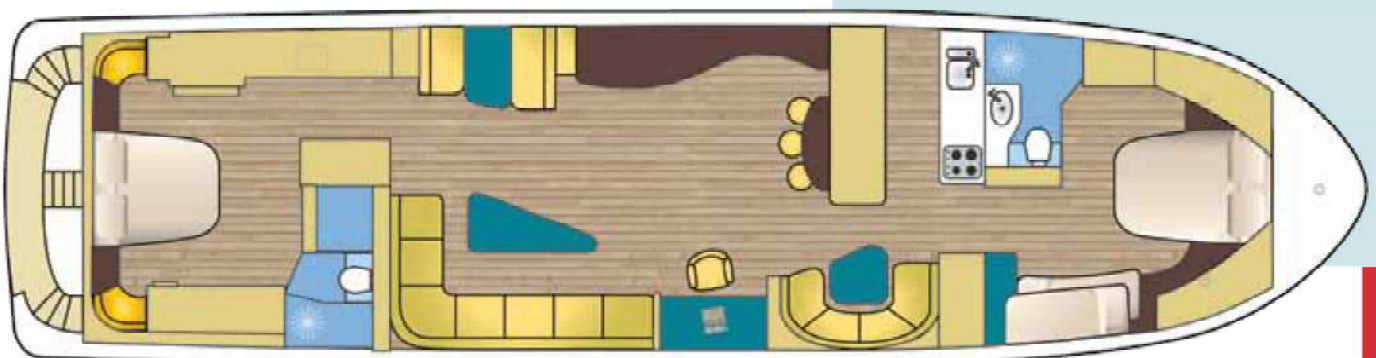
The Basics

- You charge your batteries with heavy alternators on the main engine while sailing so seldom need shore power.
- You use the generator for recharging while you are moored or anchored without having shore power available.
- You do not want to have to think about what to use or when. Everything at the same time is best.
- Your navigation station includes GPS, plotters, speedometer and depth gauge, and there is an onboard marine telephone.
- Your ship has several pumps for water, shower, toilet and bilges.
- You require optimum ease of operation; not only centrally located but also next to your bed or in the engine room.

AC consumers:

| description | total x capacity x hour | daily consumption |
|--|--------------------------|-------------------|
| Audio system | 1 x 250 Watt x 4 hour | = 1.00 kWh |
| Microwave/oven combination | 1 x 3000 Watt x 0.5 hour | = 1.50 kWh |
| Electric cooking | 1 x 2000 Watt x 0.5 hour | = 1.00 kWh |
| Coffee/espresso machine | 1 x 1200 Watt x 0.2 hour | = 1.10 kWh |
| Dishwasher | 1 x 1000 Watt x 0 hour | = 0 kWh |
| Washing machine | 1 x 2500 Watt x 0 hour | = 0 kWh |
| (only on generator, shore power or engine) | | |
| Household appliances | 4 x 200 Watt x 0.5 hour | = 0.40 kWh |
| TV's | 3 x 150 Watt x 2 hour | = 0.12 kWh |
| Laptops | 2 x 30 Watt x 2 hour | = 0.12 kWh |

Total DC and AC consumers: = 18.5 kWh





The best system choice

Batteries: 12 x Mastervolt MVSV 750 Ah (12 x 2 V)

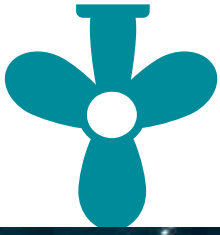
- The total of DC and AC consumers requires around 18.5 kWh. The alternators and batteries recharge during sailing; in this example we assume two engines each with a 24 V 110 A alternator. After two hours of sailing these supply 10.7 kWh power, which means that the daily consumption is 7.8 kWh. Totally discharging the batteries is not advisable so opt for a maximum of 50% discharge, i.e. at least 15.6 kWh.
- Taking all consumers into account we chose a 24 V system.
- The required battery capacity is around 660 Ah.
- Twelve 2 V MVSV gel batteries ensure you 750 Ah onboard.

Generator, battery charger/inverter and alternators

- 8 kW generator 230 V/50 Hz, 3000 rpm.
- The Mass Systemswitch intelligently links all AC sources to the different consumer groups. Limited sources and priorities between the consumers are taken into consideration.
- 1 x Mass Sine 24/5000 inverter supplies 230 V from the battery for the major consumers, independent of generator and shore power.
- 3 x Mass 24/100 battery chargers for charging the main set.
- 2 x Mastervolt Alpha 24 V 110 A alternators.

Other system components

- 1 x Mastervolt shore connection set 2+PE, 32 A/230 V.
- 2 x Mastervolt Mass GI 3.5 kVA/16 A. This lightweight isolation transformer for safely using shore power is vital for steel or aluminium vessels to avoid electrolysis and corrosion.
- 1 x MasterView System touch screen control panel for operating and monitoring your entire system from one central station. Instead of separate panels spread around the boat you have a clear overview with intuitive operation. Also offers features such as an integrated tank level meter.
- You might choose to add a MasterView Easy panel, allowing you for example to place one screen next to your bed and another screen in the engine room for decentralised monitoring and control.
- 6 x Mastervolt Digital DC 10x10A each with 10 outputs for all possible DC consumers.
- 2 x Mastervolt MasterShunt 500 battery monitor.
- 3 x Mastervolt DC Distribution with 4 fuses.
- Mastervolt MasterBus cables.
- Several different input devices are used for local operation of your system, such as the Switch Input 4 PCB and the Digital Input.



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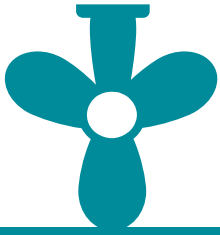
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- 1 MasterView System
- 2 8 kW generator
- 3 Shore power connection
- 4 Mass GI isolation transformer
- 5 Mass Systemswitch 16 kW
- 6 Mass Sine inverter
- 7 Mass battery charger
- 8 Service battery 12 x 2 V gel
- 9 MasterShunt, DC Distribution
- 10 MasterShunt, DC Distribution (2 x), Digital DC
- 11 Digital DC
- 12 Alternators
- 13 DC Distribution, Digital DC
- 14 Switch Input 4 PCB



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- Boiler
- Air conditioning
- Oven
- Microwave
- Washing machine
- Computer
- Sound installation

9



10



- Lighting
- Marine telephone
- Radio
- Refrigerator
- Phone charger
- Laptop charger

11



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12



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