R/V Clione - 12V: four banks, converters, shunts, DIN load distribution

48V feed - Lynx Power In, distribution side

BREAKER 15 A 14 AWG → DC-DC #1 Orion-Tr Smart 48/12-30A 8.6 A in / 30 A out, 360 W → BREAKER 40 A 8 AWG / 10 mm2 → Forward 12V AGM bow thruster + windlasses → SmartShunt #1 VE.Direct

BREAKER 15 A 14 AWG → DC-DC #2 Orion-Tr Smart 48/12-30A 8.6 A in / 30 A out, 360 W → BREAKER 40 A 8 AWG / 10 mm2 → Engine start 12V AGM Deutz starter → SmartShunt #2 VE.Direct → BREAKER bank main

BREAKER 15 A 14 AWG → DC-DC #3 Orion-Tr Smart 48/12-30A 8.6 A in / 30 A out, 360 W → BREAKER 40 A 8 AWG / 10 mm2 → Generator start 12V AGM Kubota starter → SmartShunt #3 VE.Direct → BREAKER bank main

BREAKER 15 A 14 AWG → DC-DC #4 Orion-Tr Smart 48/12-30A 8.6 A in / 30 A out, 360 W → BREAKER 40 A 8 AWG / 10 mm2 → 12V house bank lithium upgrade wanted → SmartShunt #4 VE.Direct → BREAKER bank main

Forward bank distribution - the big-current circuits

- BREAKER 300 - 400 A 3/0 AWG / 95 mm2 → **Vetus BOW PRO 57 kgf** 3.1 kW at 12V, 93 percent efficient = about 290 A on demand, battery sits right at the thruster
- BREAKER 150 A 2 AWG / 35 mm2 → **Lofrans windlass x2** about 125 A each

- **Deutz starter circuit** cable per the engine builder, typically 50 - 70 mm2
- **Kubota starter circuit** cable per the engine builder
- **Diversion / dump load** resistive bank or a water heating element, sized to full turbine output

Wind generator 600 W, 12V existing; make and model still needed → BREAKER 80 A 6 AWG / 16 mm2 → **Wind charge controller - TO BE PICKED** must be wind-rated with a diversion / dump load. A solar MPPT is not a substitute: it open-circuits the turbine when the battery is full and lets it overspeed. MidNite Classic with the Clipper is the usual answer. → BREAKER 80 A 6 AWG / 16 mm2

100 A main / 4 AWG

12 V HOUSE DIN DISTRIBUTION BUSBAR

DIN BREAKER	→
15 A 14 AWG	**Nav instruments** plotters, H5000, autopilot
15 A 14 AWG	**Navigation lights** plus deck and steaming
20 A 12 AWG	**Interior lighting**
20 A 12 AWG	**VHF, HF, Iridium** comms rack
60 A 6 AWG	**JL Audio amplifiers** check JL's own fusing spec
15 A 14 AWG	**Fusion MS-RA800** head unit
20 A 12 AWG	**Bilge pumps** each pump on its own way
30 A 10 AWG	**2 fridges + freezer**
15 A 14 AWG	**Fresh water pump** the quiet one
20 A 12 AWG	**Network and Pis** switch, Dream Machine, Pis
15 A 14 AWG	**Accessories**
spare 2-3 ways	**Spare ways**