

**W913FT-11-R-0020**  
**MIDNIGHT EXPRESS NAVIGATION EQUIPMENT**  
**PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
1	<p><b>Antenna RD424 – Raytamarine or Equivalent</b></p> <p>Type: Patch Array, Beam Width (nominal): 3.9° horizontal, 25° vertical, Polarization: Horizontal, Rotation Rate: 24 rpm (nominal). CE Approval: Conforms to 1999/5/EC, FCC Approval: Conforms to 47CFR Part 2 and Part 80, Dimensions: 652 x 247 mm (25.67 x 9.7 in), Weight: 10 kg (22 lbs), Input Voltage: 12 - 24 V DC, Power Consumption: 60 W (25 W Standby), Waterproof: IPX6, Temperature Range: -10° to +55°C, Humidity Limit: Up to 95% at 35°C, Maximum operating wind speed: 100 kts, Maximum range Scale: 48 nm.</p> <p>Receiver: IF Frequency: 70 MHz (nominal), Receiver Characteristic: Linear, Receiver Noise Figure: Less than 5 dB (including Low Noise Converter/Limiter &amp; If Receiver), Receiver Bandwidth: Matched digital filter for each pulse length, Transmitter: Transmitting Frequency: 9405 +/- 25 MHz, Peak Power Output: 4.0 kW (nominal), Transmitter: Solid-state modulator driving Magnetron, Standby Mode: Magnetron heater and control left on, all other services off, Duplexer: Circulator.</p>	26 EA		
2	<p><b>Display Radar C120W – Raytamarine or Equivalent</b></p> <p>Data Display Capabilities: GPS, Chart plotter, Fish finder, Radar, External Video, CDI (Course Deviation Indicator), and customizable Data Bar display. Dimensions: C120W: 14.98" x 9.66" x 6.14" (380.4 x 245.4 x 155.9), Depth measurement includes power cable, Display (LCD) Size: C120W: 12.1", Display Colors: 16.7M, Display Resolution: C120W: 1280 x 800 pixels (wide XGA), Display Type: Sunlight viewable color TFT LCD, Mounting Methods: Console mounting hardware included. Trunnion mounting kit sold separately, Operating Temperature Limits: 14°F to 122°F (-10°C to 50°C) ambient air at 95% RH, Power Consumption: 32 Watts (typical), Voltage Range: 10.7–32 volts (12/24v nominal), Waterproofing: CFR46/IPX6 standards, Weight: C120W:10.5lbs (4.76kg), Approvals CE - Conforms to FCC - Compliant with: Essential requirements of 1995/5/EC, 1989/336/EC. CFR47 Parts 2 &amp; 80, Humidity Limit: up to 95% at 35°C non-condensing, Display Windows: Chart, Radar, Fish finder, CDI, Video, Data, Weather and Engine Monitor, Screen Function: the units internal memory, Additional storage available on Compact Flash cards, Smart Route to create a route from track history, Track History: 15 tracks with up to 3000 points in each can be stored in the units internal memory, Track optimization reduces</p>	26 EA		

**W913FT-11-R-0020**  
**MIDNIGHT EXPRESS NAVIGATION EQUIPMENT**  
**PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p><b>Interfaces:</b> Network Configurations: Single or dual display configurations, Sea Talks Network: 2 ports, Supports 8 devices, Optional network switch required, NMEA interface: 3 inputs (configurable baud rate), 2 outputs, NMEA 0183 Input: GLL, GGA, GLC, GTD, VTG, BWC, BWR, RMA, RMB, RMC, XTE, VHW, HDG, HDM, HDT, DBT, DPT, APB, VLW, MWV, WPL, RTE, DSC and ZDA. Selectable to 4800, 4800 Navtex, 9600 Navtex or 38,400 AIS, NMEA Output - User selectable: APB, BWC, BWR, DBT, DPT, GGA, GLL, MTW, RMA, RMB, RMC, RSD, TTM, VLW, VHW, VTG, WPL, VHF/DSC and ZDA, Sea talk Interface: 1 port, Sea Talk Input: Depth, SOG, COG, Position, Waypoint Number, Range/ Bearing, TTG, Boat Speed, Time, XTE, Heading, Wind, Data, Log/Trip, Pilot Status, Temperature, MOB and Cursor Position, Sea Talk Output: Cursor Data, Guard Zone and Navigational Data bridged from NMEA, SeaTalk2/NMEA2000: 1 port, Video Input: Composite Video (NTSC or PAL) Input (BNC connector).</p> <p><b>GPS:</b> Type Internal High Sensitivity Receiver, Channels: 12, Frequency: 1.575GHz (L1), Sensitivity: -159dBm (tracking), -142dBm (acquisition), SBAS Support: WAAS / EGNOS Compatible, Horizontal Position Accuracy: &lt;=15 meters 95% typical (without SA), &lt;= 5metres 95% with WAAS/EGNOS, Speed Accuracy: &lt;=0.3kts, Antenna: Helical antenna for even sensitivity across all orientations.</p>			

**W913FT-11-R-0020  
MIDNIGHT EXPRESS NAVIGATION EQUIPMENT  
PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p><b>Chart plotter:</b> Cartography: Embedded Navionics Cartography: Latin America, Asia, Oceania; Compatible with Navionics Charts on Compact Flash cards, Cartography: Embedded Navionics Cartography: Latin America, Asia, Oceania; Compatible with Navionics Charts on CompactFlash cards, Waypoints: 3000 waypoints entered via cursor, lat/lon, range and bearing from present position or at boat's position, 16 character name can be assigned, Waypoint symbols and groups, Additional storage available on Compact Flash cards, Waypoint Transfer: Waypoints database via NMEA and Compact Flash cards. Software also available to convert waypoints to Excel file, Man Overboard (MOB Mode): Mark placed with course line; readout shows range, bearing, lat/lon of MOB and time elapsed since MOB, Presentation Modes: Head up, Course up or North up (selectable True or Magnetic) Relative, Auto range or True Motion Screen offset Radar or 3D synchronization, Routes: A route plan may contain up to 50 waypoints, Up to 150 routes can be stored in the units internal memory, Additional storage available on Compact Flash cards, Smart Route to create a route from track history, Track History: 15 tracks with up to 3000 points in each can be stored in the units internal memory, Track optimization reduces number of points</p> <p><b>Fishfinder:</b> Transducer: Transom-mount, in-hull or thru-hull options, Digital Sounder Modules: Compatible with the DSM30 and DSM300, Receiver Type: Patented Raymarine HD Digital receiver technology, Power Output: Dependant on Digital Sounder Module, Frequency: Dependant on Digital Sounder Module, Alarms: Fish Alarm, Fish Depth Alarm, Shallow and Deep Fish Limit,A-Scope Display: Displays Sonar Returns in real time, Bottom Coverage Display: Shows the diameter of the transducer beam where it meets the bottom, Bottom Lock: Displays echoes directly above the bottom, Range Markers: Easily see how far the boat is from a target on the echo sounder screen, Target Detection: Sonar fish echo with target depth readout, Zoom: 2, 3, 4x and user programmable Zoom Scales.</p> <p><b>Radar:</b> Radar Support: Support for all Digital, HD Digital &amp; Super HD Digital Radars, and Image Type: Color Radar Support (HD &amp; SHD Radars Only), Range Scales (Range Rings): 1/8 (1/16) nm to 72 (12) nm dependant on scanner. Performance limited by scanner type and position, Range Ring Accuracy: Better than +/- 1.5% of the max. Range scale in use, or 22m (72 ft.), whichever is the greatest, Bearing Accuracy: +/- 1°, Variable Range Markers: 2 x VRM's, readout nm, sm, km.</p>			

**W913FT-11-R-0020**  
**MIDNIGHT EXPRESS NAVIGATION EQUIPMENT**  
**PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p>Electronic Bearing Lines: 2 x EBL's, floating if required, resolution 1°, Bearing Scale: 360° graduated at 10° intervals 2° small ticks 10° large ticks, Minimum Range: 23m (25 yds), Range Discrimination: 23m (25 yds), Presentation Modes: Head up, Course up or North up (selectable True or Mag-netic) Relative or True Motion, Scanner Control: Interference rejection, standby/transmit modes, pulse selection, Tune, Rain, FTC and Sea controls, with selection of manual or automatic control of gain, sea clutter and tune (Auto GST), Compass Input: NMEA 0183 (required for fast heading data, suitable for MARPA), or SeaTalk, Waypoint Display: Create waypoints and target waypoint displayed with User control of symbols and groups, MARPA: Manual acquisition of up to 25 targets (dependent upon scanner type), automatic tracking, dangerous target alarms, safe zone, target history, true or relative vectors, CPA graphics and indication of target speed/ course, bearing/ range, CPA and TCPA, Guard Zone Alarm: 2 guard zones, selectable sensitivity level, audible alarm, Automatic Tuning: Auto control of gain, sea clutter and tune, Off Center Function: In Relative Motion, 1/3 or 2/3, Wakes: 10s, 30s, 1 min, 5 min &amp; 10 min options, Target Expansion: Operator selectable with 2 levels available, Timed TX: Rotation periods: 10,</p> <p><b>Instrument and Engine Data:</b> Data Pages: 5 pages available. Pre-defined (Navigation, Waypoint, Route, Fishing or Sailing) or user-configured, Data Available: Vessel position, active waypoint, TTG, VMG - Waypoint, depth, COG, SOG, heading, speed, set/drift, trip, log, ground log, ground trip, rudder, local time and date, sea temperature, app wind, true wind, VMG wind, ground wind XTE, compass, locked heading, Engine Pages: 5 pages available, Pre-defined (engine, engine and fuel, fuel resources, engine and resources, twin engines or triple engine support) or user configured, Engine Data: Tacho, boost pressure, alternator, oil pressure, coolant temperature, engine hours, fuel level (tanks 1 &amp; 2), fuel rate, total fuel, load.</p> <p><b>AIS:</b> AIS Support: For class B AIS, Supports silent mode, Target Symbols: Sleeping, activated, selected, dangerous and lost, Target Information: AIS vectors, buddy tracking, safety critical data and full AIS data, Collision Avoidance: Safe zones and safety messages, Alarms: Local alarm messages, lost targets.</p> <p><b>NAVTEX:</b> Alerts: Incoming message (selectable categories), Message List: Sorting.</p>			

**W913FT-11-R-0020**  
**MIDNIGHT EXPRESS NAVIGATION EQUIPMENT**  
**PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p><b>Weather:</b> Type: SIRIUS Marine Weather, Weather Elements: Storm cast, waves, Canadian radar, lightning, wind, sea surface temperature, observations stations, city weather, NOWRad, storm tracks, surface pressure, Animated Weather Graphics: Weather forecast, weather radar history, Weather Reports: Tropical statements, marine warnings, marine zone forecasts, marine matchbox.</p> <p><b>General:</b> Storage Temperature: -4°F to 149°F (-20°C to +65°C) ambient air at 95% RH.</p>			
3	<p><b>Seaflir III – Flir or Equivalent</b></p> <p><b>Thermal Imager:</b> Sensor type: 320 x 240 InSb focal plane array (640x480 option), Wavelength: 3-5 µm response, FOVs: 21.7° to 1.2° (w/1.8x optical extender) Zoom range: 25 mm to 450 mm (w/1.8x optical extender).</p> <p><b>Color CCD-TV Camera:</b> Format: NTSC or PAL, Type: Super HAD CCD, ¼” Format, FOVs: 48° to 1.2°, Sensitivity: 0.7 Lux @ F1.4.</p> <p><b>Laser Payloads:</b> Rangefinder Type Erbium-glass, 1.54 µm, Max. range 20 km +/-5 m, Classification Class 1 (eyesafe), Pointer: Wavelength 830 nm, Power 135 mW, Classification Class IIIb.</p> <p><b>Stabilized Gimbal Assembly (SGA):</b> System type: 2-axis stabilization, Az. Coverage: 360° continuous, El. Coverage: 360° continuous, Slew Rate: 0° to 140°/sec.</p> <p><b>System Interfaces:</b> Analog video: NTSC or PAL, Digital video: Yes, Control: Ergonomic Laptop or Hand-held, Data: RS-232, RS-422.</p> <p><b>Environmental:</b> Standards: MIL-STD-810 &amp; RTCA DO-160D, Operating temperature: -40°C to +55°C.</p> <p><b>Power Requirements:</b> Voltage: 18-32 VDC.</p> <p><b>Dimensions &amp; Weight:</b> SGA Size: 9.0” x 13.8” (22.9 cm x 35.0 cm), Weight: 32 lbs (14.5 kg).</p> <p><b>Other Options &amp; Accessories:</b> Target Geo-Location, Navigation/Radar/Moving Map/Searchlight Interfaces, Mounts, Monitors, Recorders, Power Supplies, Training and Installation Support.</p>	26 EA		
4	<b>GPS – Raytamarine or Equivalent</b>	24 EA		

**W913FT-11-R-0020**  
**MIDNIGHT EXPRESS NAVIGATION EQUIPMENT**  
**PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p><b>Power:</b> Nominal voltage (volts DC): 12V, 24V systems, Absolute voltage range (volts DC): 9 - 32 volts (NMEA configuration) 9 - 18 volts (SeaTalk configuration), Power consumption (typical) watts: 1.2W.</p> <p><b>Physical:</b> Overall dimensions (DxH) mm: diameter 95x30, Product weight kg (lbs): 0.13 (0.29), Mounting methods: flush/pole/rail, Pole mount thread: 1" x 14 TPI, This is the standard thread found on VHF radio antenna mounts and extension poles, Cable length: 10m (33').</p> <p><b>Data Interfacing:</b> Protocols supported: Either NMEA 0183 or SeaTalk, User configured during installation.</p> <p><b>Approvals:</b> EMC Approved: Yes, Europe and FCC, CE Marked: Yes.</p> <p><b>Environmental:</b> Operating temperature range: -10°C to +70°C, Non-operating temperature range: -20°C to +70°C, Humidity: up to 95%, Waterproofing standard: CFR46.</p> <p><b>Features:</b> Type: Active antenna, Signal acquisition: 12ch. parallel (C/A code), Satellite differential type: WAAS/EGNOS/MSAS, Differential acquisition: automatic (satellite), Beacon differential ready: with RTCM input, Position accuracy (RMS): &lt;15m., Position accuracy with SDGPS (RMS): &lt;5m, Speed accuracy (RMS): &lt;0.3kts, Time to first fix from cold start (typical) : &lt;2.5min (&lt;45sec), Time to first fix (after initial cold start): typically &lt;8 seconds, Geodetic datum: WGS84 (190 programmable alternatives).</p> <p><b>NMEA Sentences Supported:</b> Input Sentences: PRAYI, PRAYE, PRAYA, Output Sentences: GPGGA, GPGSA, GPGSV, GPGLL, GPRMC, GPDTM, GPGNS, GPVTG, PRAYA, Version: NMEA 0183 Version 2.3.</p>			
5	<p><b>Digital Sounder Module DSM300G – Raytamarine or Equivalent.</b></p> <p><b>Power:</b> Nominal voltage (volts DC): 12V and 24V systems, Absolute voltage range (volts DC): 10.7 – 32 volts, Power consumption (typical) watts: 30W.</p> <p><b>Physical:</b> Dimensions (WxHxD) mm: 273x62x187, Product weight kg (lbs): 1.0 (2.2), Mounting methods: 4 keyhole mounting tabs.</p>	24 EA		

**W913FT-11-R-0020  
MIDNIGHT EXPRESS NAVIGATION EQUIPMENT  
PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p><b>Connections:</b> Power: Yes, twist-lock 3-pin, Transducer: Yes, twist lock multi-pin for depth, speed, water temperature, SeaTalk hs: RJ45 for E-Series and G-Series. hsb2: 4-pin for C-Series and Pathfinder Plus.</p> <p><b>Environmental:</b> Operating temperature range: -10°C to +50°C, Non-operating temperature range: -20°C to +70°C, Humidity: up to 95% at 35°C non-condensing, Waterproofing standard: CFR46 and IPX6.</p> <p><b>Key Features:</b> Nominal output power: 1000 or 600 watts (depends on transducer type), High Performance Transducer Required for 1Kw output, The DSM300 automatically adjusts output power for 600 watt and 1Kw transducers, Frequency: dual 50kHz/200kHz, Pulse length: 100 µsec to 4 msec, Max. transmit rate: 1580 pulses/min @ 15m (50') range, Gain: auto/manual, Range scales: 26 scales (2 to 1700m), Range control: auto/manual/range with shift, Zoom size: auto/manual x2, x3, x4, xR (user selectable), A Scope: 3 modes, Displays sonar returns in real time, Bottom coverage display shows the diameter of the transducer beam where it meets the bottom, Bottom lock: full/split (adjust range), White line: Yes, Background color options: classic/blue, classic/black, classic/white, sunburst, greyscale, inverted greyscale, copper, night vision, Scroll speed: auto/manual (10-100%), Variable range marker: Yes, Alarms: fish/shallow/deep, Depth ID: Yes.</p>			
6	<p><b>Receiver Module AIS 250 – Raytamarine or Equivalent</b></p> <p>AIS Data Rate: 9600 BpS, AIS Receiver Type: Dual Channel (multiplexed), Antenna Impedance: 50 Ohm, Channel Spacing: 25 kHz, Data Format: NMEA 0183, Dimensions: 6.69”H x 9.33”W x 2.16”D (170 mm × 237 mm x 55mm), NMEA 0183 Baud Rate: 38,400/4800 Baud, NMEA 0183 Sentence: VDM, Operating Frequencies: 161.975 and 162.025 MHz (multiplexed), Operating Temperature: 14° to 131° F (-10° to 55° C), Power: DC 10.8~32V @ &lt;200mA (12 or 24 Volt Systems), Sensitivity: &lt;-109dBm (receiver only), Storage Temperature: -4 to 167° F (-20° to 75° C), Warranty: 2 years parts, 2 year labor, Weight: 1.2 lbs (.54Kg).</p>	24 EA		
7	<p><b>Gyroplus II – Raytamarine or Equivalent</b></p>	24 EA		

**W913FT-11-R-0020  
MIDNIGHT EXPRESS NAVIGATION EQUIPMENT  
PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p>The Gyroplus II external rate gyro processor is the perfect choice for upgrading non-gyro equipped SmartPilot core packs to benefit from Raymarine's exclusive AST technology. Gyroplus II can also be utilized in specialty installations where a "G" type autopilot core pack could not normally be mounted due to vibration or mounting angle constraints. The Gyroplus II module contains the same solid-state rate gyro processor that is built into the S1G, S2G, S3G, 150G and 400G corepacks. A simple connection from Gyroplus II to the SmartPilot corepack is all that is required to unlock features like AutoLearn calibration, AST steering algorithms, and 10 Hz fast heading output.</p>			
8	<p><b>P79 Transducer - Airmar or Equivalent</b></p> <p>The P79 in-hull transducer easily adjusts to hull dead rise angles up to 22 °. This ensures that the beam is vertically oriented to receive echo, resulting in accurate depth readings. Unlike traditional "puck" type transducers, our P79 consists of a base that is bonded to the hull and filled with liquid. The separate transducer then attaches to the base with a twist lock. The sound waves travel more efficiently through the liquid, giving the best possible performance</p>	24 EA		
9	<p><b>High Speed Network Switch E55058 – Raytamarine or Equivalent</b></p> <p>The HS Sea Talk network switch is designed for networking 2 or more devices, with the ability to connect up to 8 instruments. Sea Talk HS is an Ethernet-based network designed for data sharing. Auto-sensing capabilities deliver full duplex network switching at 100 megabits per second, ensuring fast and reliable on-board networking.</p>	24 EA		
10	<p><b>Epirb – ACR Electronics or Equivalent</b></p>	24 EA		

**W913FT-11-R-0020**  
**MIDNIGHT EXPRESS NAVIGATION EQUIPMENT**  
**PRICING SPREADSHEET**

ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
	<p>Product Number 2846.0 Category I Class 2, 2848.0 Category II Class 2, Model Number RLB-36, Size (no antenna) 7.0 X 4.2 X 3.6" (17.7 X 10.7 X 9.1 cm), Weight 20.5 oz (581 g), Battery Class 2 (non-hazmat) lithium batteries, Replacement due six (6) years from date, of manufacture or five (5) years after, beacon is placed into service, whichever, is first, or after emergency use, Material High impact UV resistant polymer, Deployment Category I-Hydrostatic release (auto), Category II-Manual release, Activation Out of bracket and wet, or manually, Waterproof 33 ft (10 m) @ 10 min., Exceeds RTCM standard, Radiated Power 5 W +/-2dB (406.037 MHz), 50 mW +/-3dB (121.5 MHz), Operational Life 48 Hours minimum @ -4°F (-20°C), Typical 65+ hrs. @ -4°F (-20°C), Longer in higher ambient temperature, Operating Temp. -4°F to +131°F (-20°C to +55°C ) (Class 2), Storage Temp. -30°F to + 158°F (-34°C to +70°C), Accessories SeaShelter™3 (P/N 9501), LowPro™3 (P/N 9502), Cat I HydroFix™ HRU (P/N 9490), Approvals Cospas-Sarsat, FCC, Mable sensitivity level, audible alarm, Automatic Tuning: Auto control of gain, sea clutter and tun</p>			