

Selesmar Raddars



When Safety Matters

Selesmar Selux ST ARPA
Reaching all the corners



Consilium Selesmar's experience in designing and manufacturing Marine Radar Systems goes back to the last 30 years and is distinguished by innovative radar solutions.

Moving ahead

Consilium Selesmar is extremely proud to introduce a new series of improved X-band radars which provide mariners with even better detection capability. Consilium's commitment to continual development also ensures that the equipment fully conforms to the new IEC 62388 standard.

The new configuration is characterized by reduced weight, small dimensions and compact electronics thereby offering the proper solution for installation even on small High Speed Crafts.

Main features:

- Designed for new Navigation Radar Standard IEC 62388
- Pedestal with built-in 12 kW or 25 kW transceiver supports 6' / 9' / 12' antennas
- Modular and solid state construction
- Electronic Modulator based on MOSFET technology
- Long life 3rd generation magnetron (12 kW and 25 kW)
- Low Noise Amplifier providing a reduced overall Noise Figure
- Microcomputer controlled operations
- Serial link with telemetry and remote control for adjustments
- Built-in test facilities for power supply and modulator parameters
- PRF jittering removing any possible ambiguity due to multiple-time-around echoes
- Two different Sectors Blanking to be set at time of installation
- Performance Monitor
- Rotation: 20 or 40 RPM
- Easy installation

Easy to install, easy to use

The compact up-mast arrangement of the new Consilium x-band radar allows a direct coupling between Transceiver and rotary joint. This simplifies the installation work and significantly reduces the RF losses normally accepted when the Transceiver is installed into a separate cabinet in "down-mast" position. The interface with the radar console is through a single connector and it is not necessary to open the transceiver casting during installation. Every analogue adjustment is made remotely from the Selux ST console.

The Selux ST Console also features built-in inter-switch.

Feed-back from users has consistently stated that Consilium Selesmar Selux ST has a very efficient and user-friendly interface. The high reso-

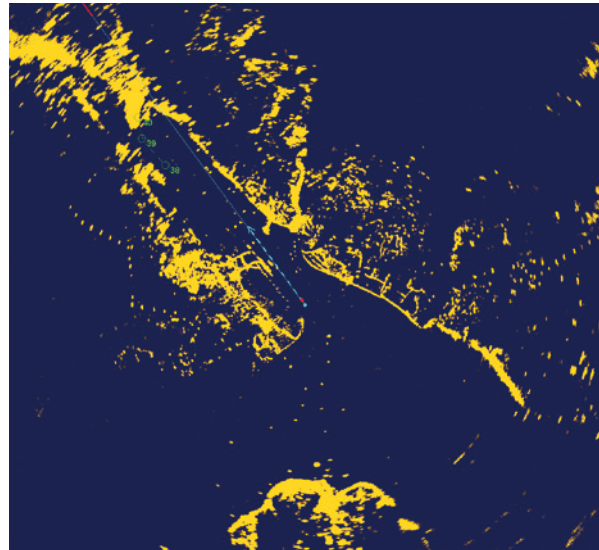


lution LCD TFT color monitor (19" or 23") provides the operator with a clear picture of the situation. For the most frequently used ARPA functions well defined menus and simple point-and-click virtual keys are complemented by dedicated push-buttons for the most frequently used ARPA functions. There are also operator defined quick-keys for optimal personalized operation. The dials for EBL and VRM allows easy fine adjustments. The updated Selux ST also features improved manual STC with automatic selection of correct sea shape, increased flexibility with more RS 232 and RS 422 serial interfaces and the availability of an external USB memory stick. Design, efficient on-line fault localization and easy repair ensure high availability.

Excellent target detection

Sea trials have shown the new generation of the Selux ST x-band radars has even better target detection capability. This applies to target resolution as well as target detection. The superior detection and resolution of small targets in the vicinity of the ship dramatically improves safety.

The Selux ST x-band radars provide the operator with the functionality to detect small targets even in heavy sea- or rain clutter and also ensures that land contours are clearly visible.



Guard Zones for ARPA and AIS targets

The Selesmar Selux ST has excellent functionality for both ARPA and AIS target identification. With an activated Guard Zone around own ship all targets are selected and checked automatically.

- North stabilized and Heading Stabilized guard zones
- All AIS targets, also unselected, are checked against the minimum safe parameters and automatically activated when dangerous.
- Up to 200 AIS targets can be tracked
- AIS names or call signs can be displayed over the PPI area
- AIS presentation can be switched on/off
- The AIS list, an easy method to select AIS targets is included. The AIS list contains all displayed AIS targets including their progressive ID number, name and range.

The list can be organized either in distance or alphabetical order for names; up to four elements can be selected.

- Sleeping AIS targets can easily be obtained through this list by selecting the appropriate name.
- A similar list for ARPA targets is also available, but it is organized with range and dangerousness (low CPA and TCPA on top of the list).
- All tracking associated features like past positions, auto-tracking/guard zones and trial manoeuvre are available at the same time for both AIS and ARPA targets.
- AIS and ARPA targets can be combined automatically with user set of parameters to reduce the graphical "clutter" on the PPI.



Seesmar Selux ST – the perfect tool for ships in arctic waters

The advantages are many:

- High gain and higher sensibility (12 feet x-band array)
- Possibility to capture lower reflection echoes from the ice
- Environmentally adapted outdoor equipment
- Better resolution in azimuth angle
- Better definition of echoes
- Special STC shape for optimal suppression of iced sea clutter
- Possibility to detect small objects/echoes over ice
- Capacity of displaying raw video without automatic video processing
- Easy understanding of the differences between ice reflections
- The Consilium Seesmar Selux ST exceeds IMO radar performance requirements

The result is that new ice pathways or rough areas in the ice banks are clearly visible because they reflect more than standard ice and water channels in the ice can easily be detected.



Navy and Special Applications

Whether you are navigating through the arctic ice, crossing open sea or in high speed pursuit through shallow dangerous waters you'll find Consilium Seesmar radars.

Consilium Seesmar has a long tradition of providing high performance navigation radars for the most demanding customers who require special solutions. Supplying low weight/high performance solutions for fast patrol crafts to solutions that are designed for special operation in extreme climate conditions.

The functionality, reliability and usability of Consilium Seesmar solutions make them the preferred choice by a number of Navies all over the world.



The Selux ST ARPA display is produced in three different configurations

The deck configuration provides an optional display deck stand which can also house the electronic cabinet.

The modular configuration with monitor, keyboard and ARPA electronic cabinet supplied as three separate modules which can be flush mounted into the bridge console to the customers' preference.

The table top configuration where the monitor and key-

board are housed into an ergonomic console while the ARPA electronics are contained in a separate bulkhead mounted cabinet.

x-band antenna group including 6, 9 or 12 feet antenna and pedestal with 12/25 kW transceiver up-mast.

s-band antenna group including 12 feet antenna and pedestal with 30 kW transceiver up-mast.



Deck configuration



Console mounting configuration



Table top configuration



Selux ST model summary

X-Band Radar

Model	Output Power (kW)	Scanner (feet)	Mast config (Up/Down)	Display version
Selux ST 340/250 ARPA SRT 12U/6X	12	6	Up	Deck/Console/Table
Selux ST 340/250 ARPA SRT 12U/9X	12	9	Up	Deck/Console/Table
Selux ST 340/250 ARPA SRT 12U/12X	12	12	Up	Deck/Console/Table
Selux ST 340/250 ARPA SRT 25U/6X	25	6	Up	Deck/Console/Table
Selux ST 340/250 ARPA SRT 25U/9X	25	9	Up	Deck/Console/Table
Selux ST 340/250 ARPA SRT 25U/12X	25	12	Up	Deck/Console/Table
Selux ST 340/250 ARPA SRT 25D/6X	25	6	Down	Deck/Console/Table
Selux ST 340/250 ARPA SRT 25D/9X	25	9	Down	Deck/Console/Table
Selux ST 340/250 ARPA SRT 25D/12X	25	12	Down	Deck/Console/Table

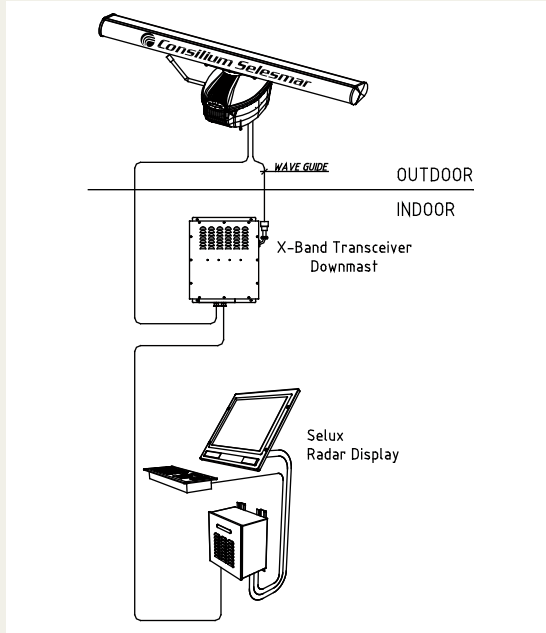
S-Band Radar

Model	Output Power (kW)	Scanner (feet)	Mast config (Up/Down)	Display version
Selux ST 340/250 ARPA 30U/12S	30	12	Up	Deck/Console/Table
Selux ST 340/250 ARPA 30D/12S	30	12	Down	Deck/Console/Table

Configuration drawings X-Band

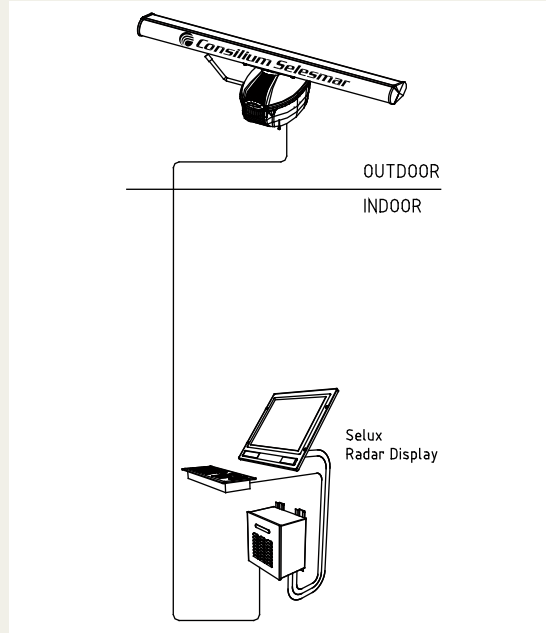
DOWN MAST INSTALLATION

X-Band Antenna Group including Antenna and Pedestal
 25 kW X-band Transceiver (Down-mast)
 6/9/12 ft Antenna



UP MAST INSTALLATION

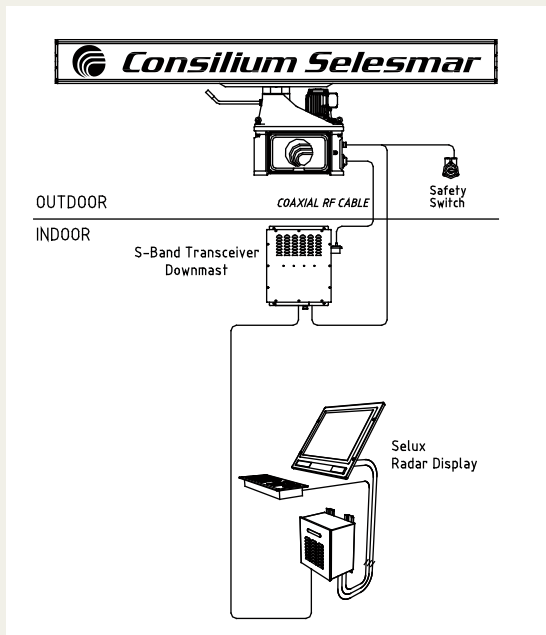
X-Band Antenna Group including Antenna and Pedestal
 12 or 25 kW X-band Transceiver (Up-mast)
 6/9/12 ft Antenna



Configuration drawings S-Band

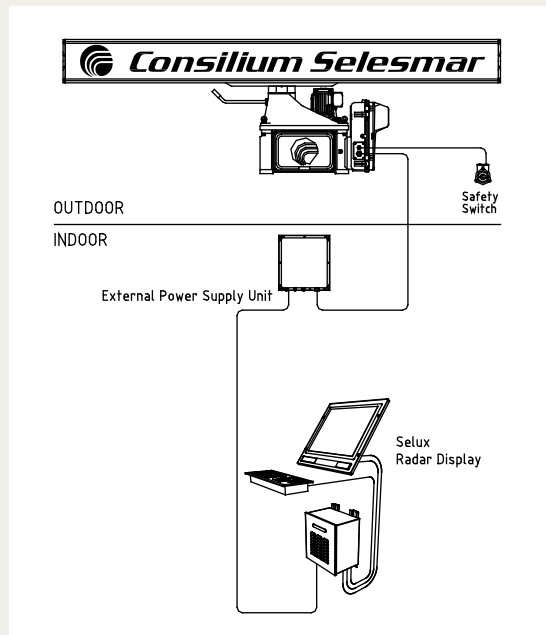
DOWN MAST INSTALLATION

S-Band Antenna Group including Antenna and Pedestal
 30 kW S-band Transceiver (Down-mast)
 12 ft Antenna



UP MAST INSTALLATION

S-Band Antenna Group including Antenna and Pedestal
 30 kW S-band Transceiver (Up-mast)
 12 ft Antenna



Technical Specifications

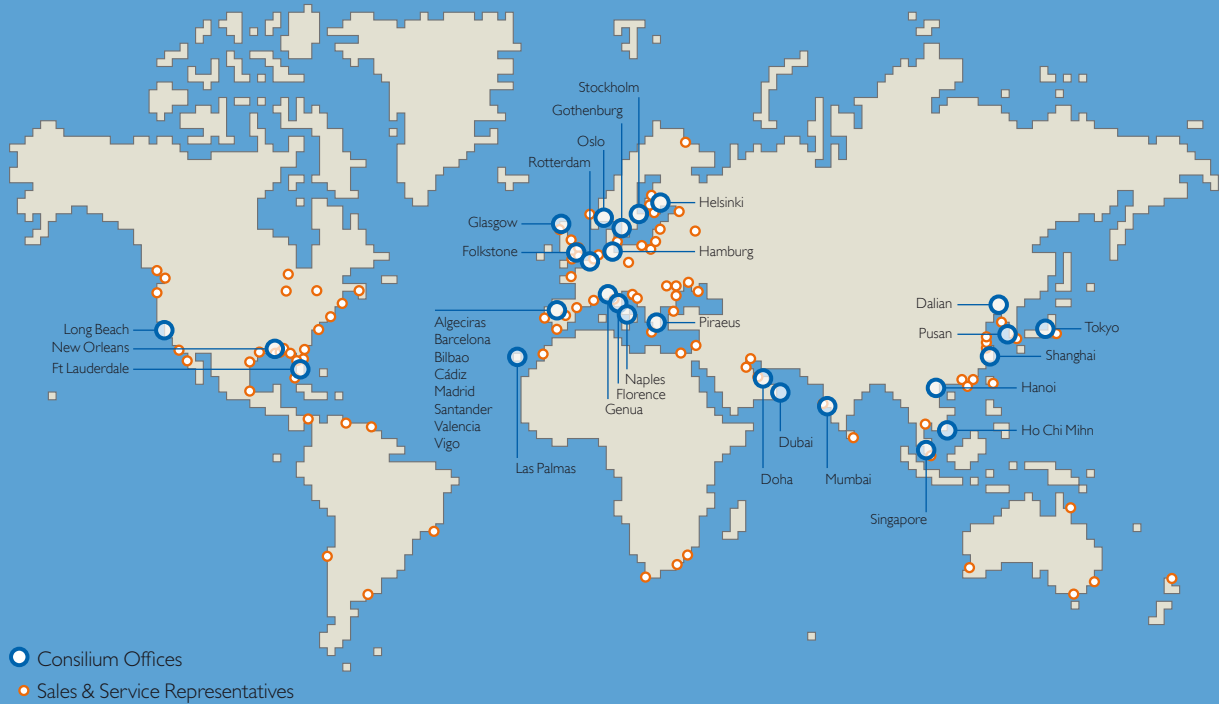
Display Monitor 19" LCD TFT 23" LCD TFT Radar picture >250 mm (12" PPI) >320 mm (16" PPI) Resolution 1280x1024 1600x1200 Presentation Modes Day/Night modes Relative motion (RM) Head, Course and North Up True Motion (TM) Course and North Up Off-centering Up to 50% of range scales in use Range Scales 0.25; 0.5; 0.75; 1.5; 3; 6; 12; 24; 48; 96 nm Range Resolution 3 m on 0.75 nm range scale Azimuth resolution 0.1° Trackball Polar and Geographical coordinates continuously displayed Diagnostic On-line diagnostic programs		Inputs Serial interface NMEA0183 (IEC 61162-1/2) Gyro, Speed log, EPFS, AIS, Wind sensor, Ext. Alarm Interface Outputs Serial interface NMEA0183 (IEC 61162-1/2) RATTM-RAOSD-RARSD-RAALR sentence AIACK for AIS alarm acknowledge, RATTD, RATLB, Dead Man Alarm, Power Fail, Danger-Target, Video output for VDR Other interface Ethernet 10/100Mbit/s USB 2.0 port	
ARPA facilities Acquisition Manual or automatic up to 40 targets Tracking Automatic up to 40 targets Autoacquisition/ Autoacquisition zones stabilised on own-ship heading and North Guard Zones Size/shape configurable. Four sectors with fixed width of 0.5 nm configurable as auto acquisition of guard zone.		Environmental Conditions Operating temperature Display Unit -15° to 55°C (IEC 60945 protected equipment) In-door -15° to 55°C Antenna group Out-door; std -25°C to 55°C Out-door option Down to -40°C (Pedestal with heater) Storage Temperatures -25°C to 70°C (IEC 60945) Relative humidity Up to 93% at 40°C (IEC 60945) IP class IP41 (display) Vibrations As per IEC 60945 Power supply Display Unit 220/115VAC 50/60 Hz (30W) SRT X-Band Radar 220/115VAC 50/60 Hz (300VA) S-Band Radar 220VAC, 380VAC 50 Hz or 255VAC, 440VAC 60 Hz	
AIS facilities Presentation Up to 200 targets chosen as the nearest to own ship Safe checking All 200 targets in sleep or activated stated Autoacquisition/ Guard Zones Same zones as described for ARPA facilities		Type testing in IMO Resolution A.813 (19) accordance with A.694 (17), MSC192 (79), MSC 36 (63), IMO Circ. S/N 217 and specified standards: IEC 60945 (General Requirements) IEC 62388 (Performance Requirements) IEC 61162-1/2 (NMEA Interface)	
Trial Manoeuvres Trial course For ARPA and AIS target. Manually adjustable from 0° to 360° or automatically computed within 135° with reference to present course. Trial speed Adjustable from 0 to 50 knots Trial ROT Adjustable from 1° to 60°/min Trial time Adjustable with 1 min increments		X-Band Radar Up-mast Peak Power (kW) 12 or 25 Pulse length (nsec) 60 – 250 - 800 PRF (Hz) 3000-1500-750 Antenna model 6X 9X 12X Gain (dB) 29 31 32.5 Horizontal beam width at -3 dB (°) 1,3 0,9 0,7 Vertical beam width at -3 dB (°) 22 22 22 Weight of Antenna incl. Pedestal with Transceiver (kg) 40 44 49 Nominal Rotation speed (RPM) 20 or 40 20	
Mapping Operator compiled maps up to 120 segments plus symbols and text strings with selectable colours and line styles. Map stabilisation Relative, true (Dead Reckoning) or geographic Map storage By name, on a built-in non-volatile memory Map adjustment Position and Orientation Parallel index Four independent parallel index lines Data readout Own ship data ARPA target data AIS target data System setting Safe minimum CPA and TCPA, vector / past position / trial / trials time		X-Band Radar Down-mast Peak Power (kW) 25 Antenna model 6X 9X 12X Weight of Antenna incl. Pedestal (kg) 38 42 47	
Others Alarms Acoustic and visual warning for: Dangerous Target, Target in Guard Zone, Lost Target, System Failure and external interface sensors (EPFS and AIS). Other features Anchor watch, echo reference speed (not for AIS enabled systems), EPFS speed.		S-Band Radar Up-mast Peak Power 30 Pulse length (nsec) 60 – 250 - 800 PRF (Hz) 3000 - 1500 - 750 Antenna model 12S Gain (dB) 27.5 Horizontal beam width at -3 dB (°) 2.0 Vertical beam width at -3 dB (°) 22 Weight of Antenna incl. Pedestal with Transceiver (kg) 255 Nominal Rotation speed (RPM) 20	
		S-Band Radar Down-mast Peak Power (kW) 30 Weight of Antenna incl. Pedestal (kg) 220	

Global Service Network
 Consilium Marine & Safety is represented in more than 50 countries and has a presence in the most frequently used ports around the world. Customers are able to obtain spare parts or conduct servicing via the network of subsidiaries and agents. So no matter where they are they are never far from a Consilium expert.

After sales support you can rely on
 Consilium prides itself on providing customers with the benefit of a highly trained and resourceful after sales team. Each member of the team is fully experienced so customers have the added assurance of knowing that when they buy from Consilium complete customer satisfaction is an essential part of the deal.

Training on demand
 To help customer to get the most out of our equipment Consilium offers educational courses and training seminars from their global network of offices. So should a customer have a special requirement Consilium representatives can help arrange and conduct specific seminars where attendees can discover everything there is to know about a particular product and its functions.

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