

# Selesmar Selux



When Safety Matters

**Selesmar Selux Radars**  
*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 console.

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

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



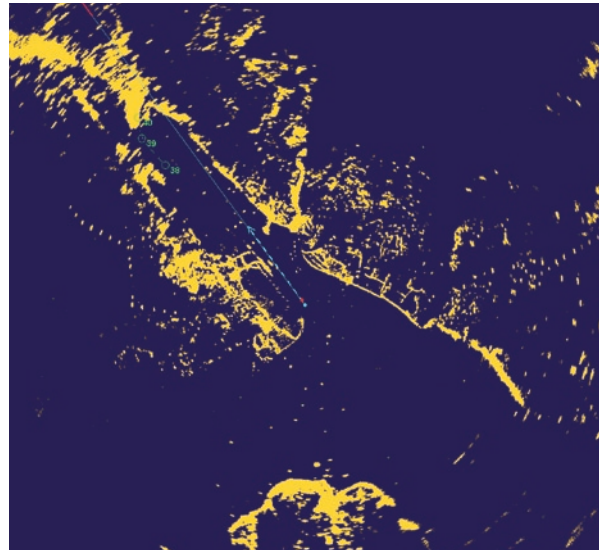
lution LCD TFT color monitor (19" or 23") provides the operator with a clear picture of the situation. For the most frequently used ARPA functions well defined menus and simple point-and-click virtual keys are complemented by dedicated push-buttons for the most frequently used ARPA functions. There are also operator defined quick-keys for optimal personalized operation. The dials for EBL and VRM allows easy fine adjustments. The updated Selux 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 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 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 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.



# Selesmar Selux – 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 src 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 Selesmar Selux 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 Selesmar radars.

Consilium Selesmar 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 Selesmar solutions make them the preferred choice by a number of Navies all over the world.





# The Selux 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 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

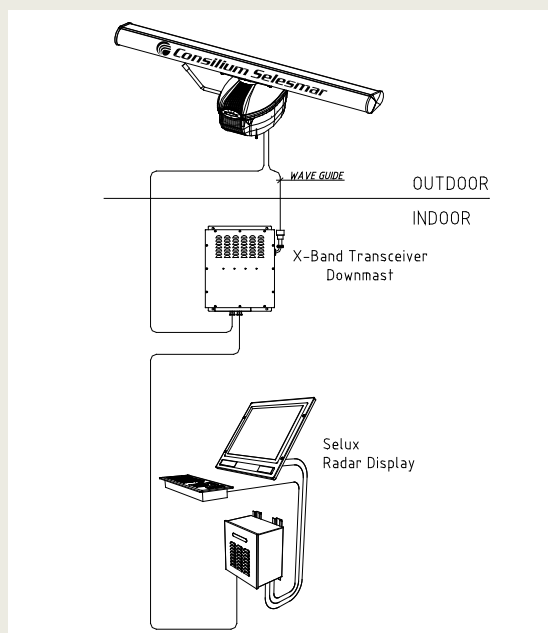
### S-Band Radar

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

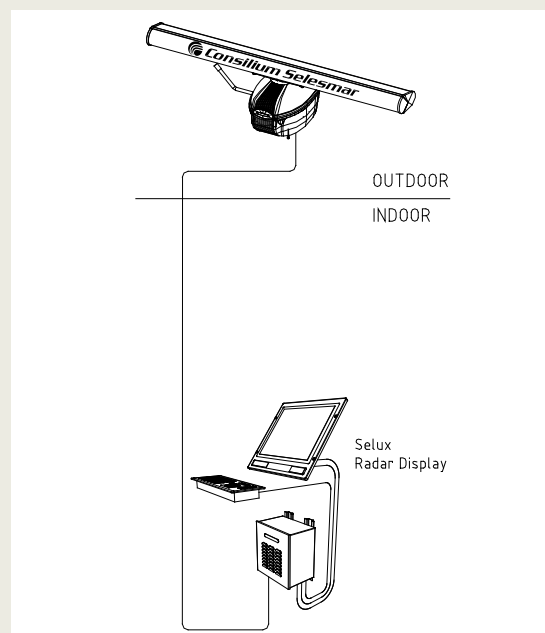
### DOWN MAST INSTALLATION

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



### UP MAST INSTALLATION

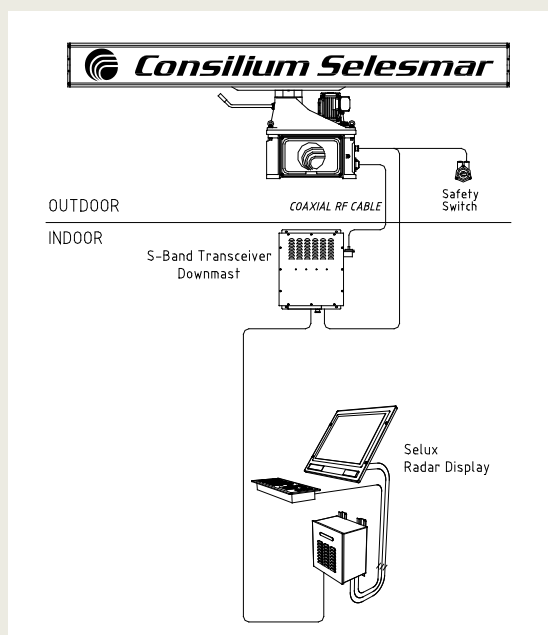
X-Band Antenna Group including Antenna and Pedestal  
12 or 25 kW X-band Transceiver (Up-mast)  
6/9/12 ft Antenna



## Configuration drawings S-Band

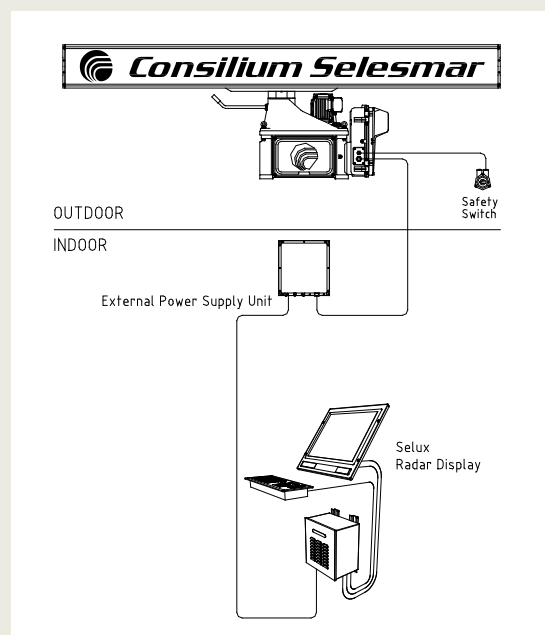
### DOWN MAST INSTALLATION

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 specification

Display		Inputs	Serial interface NMEA0183 (IEC 61162-1/2) Gyro, Speed log, EPFS, AIS, Wind sensor; Ext. Alarm Interface		
Monitor	19"LCDTFT 23"LCDTFT				
Radar picture	>250 mm (12" PPI) >320 mm (16" PPI)	Outputs	Serial interface NMEA 0183 (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		
Resolution	1280x1024 1600x1200		Ethernet 10/100Mbit/s USB 2.0 port		
Presentation Modes	Day/Night modes	Other interface			
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				
<b>ARPA facilities</b>					
Acquisition	Manual or automatic up to 40 targets	Environmental Conditions			
Tracking	Automatic up to 40 targets	Operating temperature	-15° to 55°C (IEC 60945 protected equipment)		
Autoacquisition/	Autoacquisition zones stabilised on own-ship heading and North	Display Unit	In-door -15° to 55°C		
Guard Zones	Size/shape configurable. Four sectors with fixed width of 0.5 nm configurable as auto acquisition of guard zone.	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		
<b>AIS facilities</b>					
Presentation	Up to 200 targets chosen as the nearest to own ship	Type testing in accordance with	IMO Resolution A.813 (19) 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)		
Safe checking	All 200 targets in sleep or activated stated				
Autoacquisition/ Guard Zones	Same zones as described for ARPA facilities				
<b>Trial Manoeuvres</b>					
Trial course	For ARPA and AIS target. Manually adjustable from 0° to 360° or automatically computed within 135° with reference to present course.	<b>X-Band Radar Up-mast</b>			
		Peak Power (kW)	12 or 25		
		Pulse length (nsec)	60 – 250 - 800		
		PRF (Hz)	3000-1500-750		
Trial speed	Adjustable from 0 to 50 knots	Antenna model	<b>6X</b>	<b>9X</b>	<b>12X</b>
Trial ROT	Adjustable from 1° to 60°/min	Gain (dB)	29	31	32,5
Trial time	Adjustable with 1 min increments	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	20
<b>Mapping</b>					
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	<b>X-Band Radar Down-mast</b>			
Map storage	By name, on a built-in non-volatile memory	Peak Power (kW)	25		
Map adjustment	Position and Orientation	Antenna model	<b>6X</b>	<b>9X</b>	<b>12X</b>
Parallel index	Four independent parallel index lines	Weight of Antenna incl. Pedestal (kg)	38	42	47
Data readout	Own ship data ARPA target data AIS target data	<b>S-Band Radar Up-mast</b>			
		Peak Power	30		
		Pulse length (nsec)	60 – 250 - 800		
		PRF (Hz)	3000 - 1500 - 750		
		Antenna model	<b>12S</b>		
		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		
System setting	Safe minimum CPA and TCPA, vector / past position / trial / trials time	<b>S-Band Radar Down-mast</b>			
		Peak Power (kW)	30		
		Weight of Antenna incl. Pedestal (kg)	220		
<b>Others</b>					
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.				

## Global Service Network

Consilium Navigation 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.

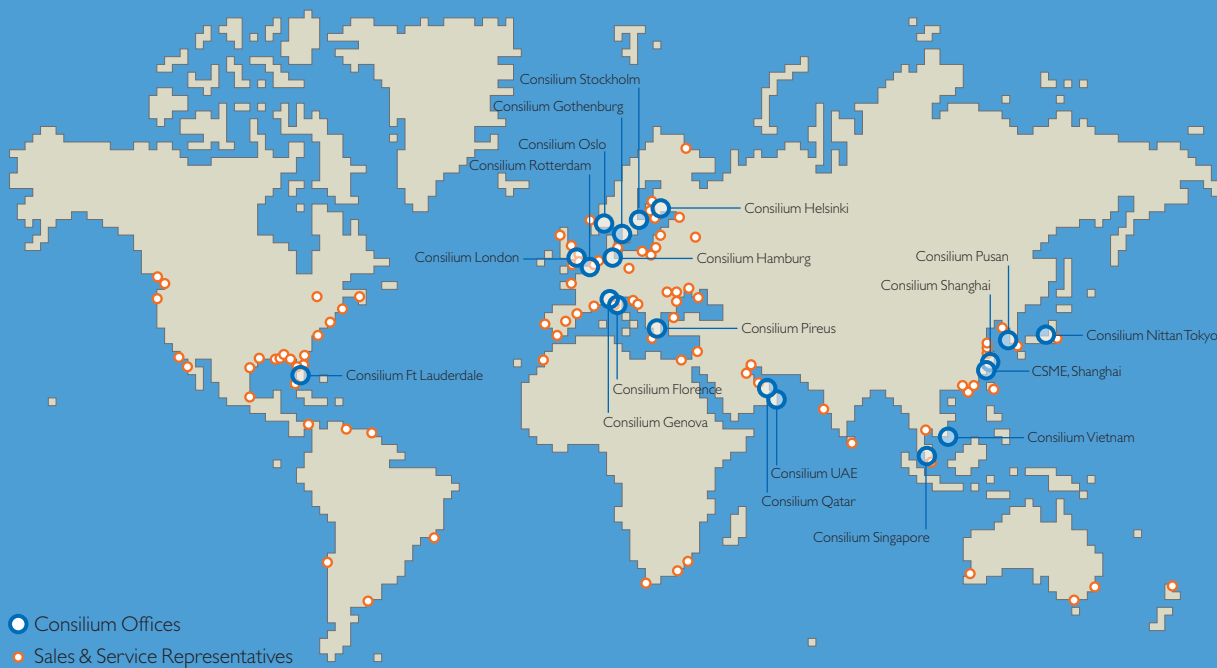
## After sales support you can rely on

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.

# Global Service and Support



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