



# FURUNO®

## Multi-color High-Performance S-Band Black Box Radar Model FR-2135SBB

- 30kW T/R Up S-Band - 120 n.m. Range (12kW and 25kW X-Band Also Available)
- Select virtually any size non-interlaced, multi-sync PC monitor CRTs, as well as flat panel color LCDs (SXGA – 1280 x 1024)
- Optional ARP26 40-Target Automatic Plotter (ARPA)
- Optional RP26 Radar Chart Plotter Utilizing Furuno's exclusive Chart/Radar Overlay Capability
- Multi-Color Target Detection
- Full Electronic Multi-Radar/Full Function Remote Interswitching
- Furuno's proven Commercial/USCG Grade Antenna Designs
- New microprocessing technology with efficient high-speed, high-density gate array and software
- Easy operation by a combination of discrete keys, rotary controls, and menu operation, all logically arranged and configured
- New cast aluminum scanner gearbox and new series of streamlined antennas
- Unique design allows technicians to install, service or inspect the equipment without disrupting or disassembling the bridge
- True Navigation Radar designed to see through rain and weather conditions where X-Band radars are not able
- Superior long range bird detection useful for fishing
- Blue and Black Background colors
- Shared monitor utilization of Radar and PC systems with standard PC monitor switching system
- "All Glass", balanced and symmetrical bridge layout when multiple equivalent PC monitors are employed
- Radar video distribution to a vessel's television system, or multiple external monitors is possible with standard PC monitor converters and distributors

Furuno is the first marine Radar manufacturer to introduce a system specifically designed to utilize industry standard, high quality, PC monitor technology in a modular, component based system.



# SPECIFICATIONS OF FR-2135SBB

## ANTENNA RADIATOR

- Type** Slotted waveguide array
- Beamwidth**

FR-2135SBB radiator		
Radiator Type	SN5AF	SN7AF
Length	9 ft	12 ft
Beamwidth (H)	2.3°	1.9°
Beamwidth (V)	25°	25°

- Rotation** 24rpm

## RF TRANSCEIVER

- Frequency** 3050 MHz  $\pm$  30 MHz (S-Band)
- Output power** FR-2135SBB: 30kW
- Pulselengths and PRR**

Range scales	P/L ( $\mu$ s)	PRR (Hz)
0.125, 0.25, 0.5	0.08	1900
0.75, 1.5	0.08/0.3	1900/1100
3	2 from 0.15/0.3/0.5/0.6	1900/1100/600
6	2 from 0.3/0.6/1.2	1100/600
12, 16, 24, 32	0.6/1.2	1100/600
48, 96, 120	1.2	600

- IF** 60 MHz, Logarithmic. BW 28/3 MHz
- Noise Figure** 4dB

## DISPLAY REQUIREMENTS

- Non-Interlaced, Multi-sync PC Monitor (Owner supplied)**  
Virtually any size including, 15", 17", 20", 21" and 28" CRTs, as well as Flat Panel color LCDs (SXGA1280 x 1024)
- Minimum range and discrimination**  
Meets 35m HSC requirements
- Range scales**

Range (nm)	0.125	0.25	0.5	0.75	1.5	3	6	12	16	24	32	48	96	120
Rings (nm)	0.025	0.05	0.1	0.25	0.25	0.5	1	2	2	4	4	8	16	16

- Accuracy**  
Range: 1% of range in use or 15m, whichever is greater  
Bearing: Better than 1°
- Presentation**  
Head-up, Head-up TB, North-up, True Motion  
Sea or ground stabilization
- Plotting facilities**  
EPA 10 targets in different symbols (standard)  
ARPA option Automatic Radar Plotting Aid for 40 targets automatically or manually acquired, 2 guard zones 0.7- 32 n.m. complies with A.823(19).
- Radar map (option)**  
Nav lines, coastlines, buoys, etc. produced by operator. 150 points x 10 areas stored in PROM.

## INTERFACE

- Digital in IED 61162-1
- Input: \$- - GGA, \$- - GLL, \$- - RMA, \$- - RMB, \$- - RMC, \$- - BWR, \$- - BWC, \$- - WPL, \$- - RTE, \$- - DPT, \$- - DBT, \$- - DBS, \$- - VDR, \$- - MWV, \$- - VBW, \$- - VHW, \$- - VWT, \$- - VWR, \$- - ZDA, \$- - MTW, \$- - VTG
- Output: \$RAOSD, \$RARSD, \$RATTM

## POWER SUPPLY (Specify when ordering)

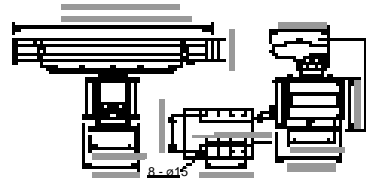
- AC set: 230/440 VAC, Three-phase Required  
520VA  
(Three-phase to single phase converter may be used where three-phase power is not available.)

## EQUIPMENT LIST

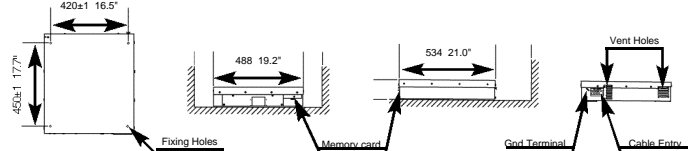
- Standard**
- Antenna Unit 1 Unit
  - Processor and Control Unit 2 Units
  - Installation Materials and spare parts 1 Set
  - Power Supply Unit PSU-004 1 Unit
- Option**
- Non-Interlaced, Multi-sync PC Monitor (SXGA1280 x 1024)
  - Auto Plotter ARP-26 for ARPA
  - Video Plotter RP-26
  - Chart ROM card for RP-26
  - RAM card for RP-26
  - 42 rpm scanner motor for FR-2115BB/2125BB  
30m signal cable assembly
  - Interswitch box RJ-7/8
  - Gyro Interface GC-8
  - Stepdown Transformer for 380/440 VAC

### ANTENNA UNIT FOR FR-2135SBB

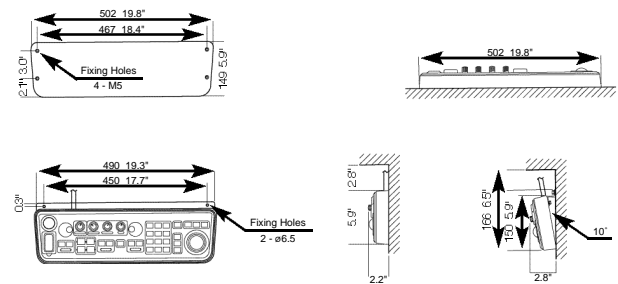
SN5AF: 125 kg 276 lb  
SN7AF: 135 kg 298 lb



### PROCESSOR UNIT



### CONTROL UNIT



### INTERCONNECTION DIAGRAM

