



# MARINE RADAR

# JMA-5300

## Series



*Japan Radio Co., Ltd.*





# **State-of-the-art Radar technology "Real-Time Radar"**

## **Relax operation and quick indication.**

**a new Radar series from JRC incorporating the latest technology and user features.**

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JRC JMA-5300 series Marine Radar is developed to enhance the radar performance, user-friendly operation and visibility, which meet radar & ATA/ARPA performance standards specified by IMO.

The X and S-Band radar utilizing software-based digital signal processing with high performance computer-based technologies, offers the unique "Constaview™" feature, providing radar of images in Real-Time Head-Up mode that rotates a radar echo image simultaneous to ship turning, "Target Enhancement Function (TEF)™", and target acquisition and tracking up to 100 using ATA/ARPA function.

# JMA-5300 series - performance features

## Unique features

The JMA-5300 series represents a major advance in Radar technology. The newly developed processing system gives users a range of new features not previously found on this class of radar.

### Chart Overlay

Chart information can be combined with the radar image to present a complete overview of activity around the vessel. The radar image is combined with information from electronic charts. Own and other ship's tracks and AIS targets can be plotted and waypoints entered. This is a significant contribution to safe navigation.

### Target enhancement function(TEF)<sup>TM</sup>

Developed exclusively by JRC, TEF<sup>TM</sup> allows better identification of small and / or weak echoes. Equally, coastlines appear with improved definition.

TEF<sup>TM</sup> works by adding pixels to targets displayed on the radar image and allows a vastly improved degree of distinguishing between targets.

Sophisticated processing results in a proportional enhancement where the relative enhancement of smaller targets is greater than that applied to larger targets.

The TEF<sup>TM</sup> is available in three levels-5x, 9x and 17x.

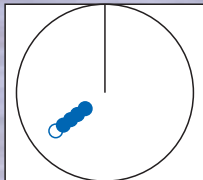
### Constaview<sup>TM</sup>

All the information gathered by the radar is stored in the system, therefore switching from one view, i.e. North-up to Head-up or Range changes, instantly produces a new, complete radar image, reflecting the new selection.

Targets that need to be closely followed can easily be re-identified on the new image. The Constaview<sup>TM</sup> represents a major contribution to safety and operational flexibility.

### Real-time Head-up mode

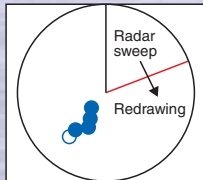
#### Constaview<sup>TM</sup>



#### True Trails

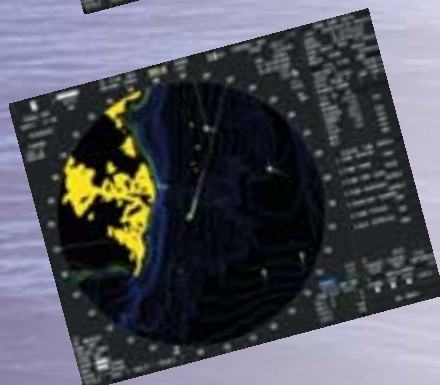
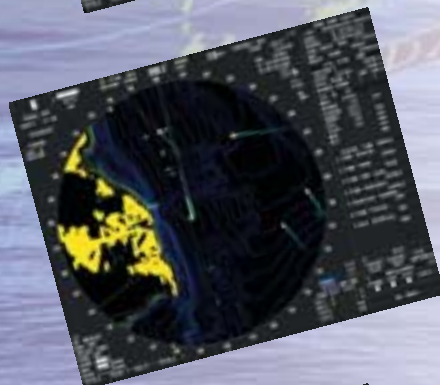
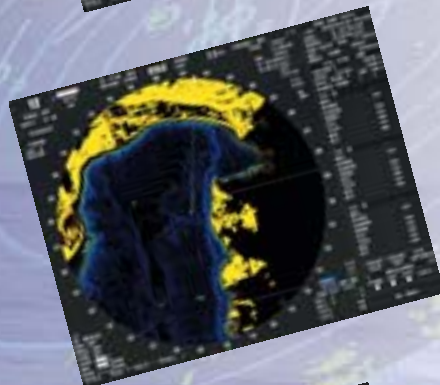
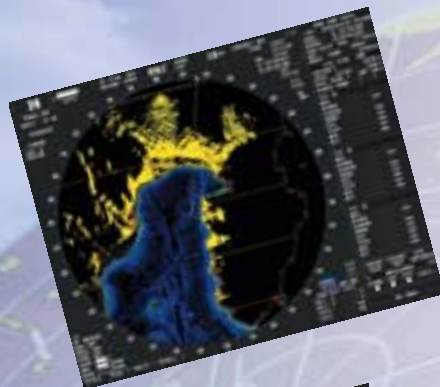
Constaview<sup>TM</sup> refreshes the image every 16mS. Despite heading changes trails are always re-ordered, displayed by memory.

#### Conventional



#### Relative Trails

Traditional technology relies on several sweeps of the scanner to redraw the image. Trails are presented as relative.





# JMA-5300 series - developed for maximum ease of use

**Full control - all radar operations can be carried out using the keyboard or on screen using a PS trackball.**

- Compact and ultra flat keyboard.
- Dedicated buttons for major functions.
- Large, easy to use analog controls for EBL, VRM, GAIN, SEA and RAIN.
- Integrated trackball with connection to a PS/2 trackball. (option)



The combination of push button and analog controls of the keyboard ensure a logical, precise operation. The newly developed processor technology ensures that selections are instantly displayed on the screen. The new JMA 5300 series radar also gives the user full control via the screen. An optional PS/2 trackball can be installed allowing the operator to use the on-screen menus for all radar operations.

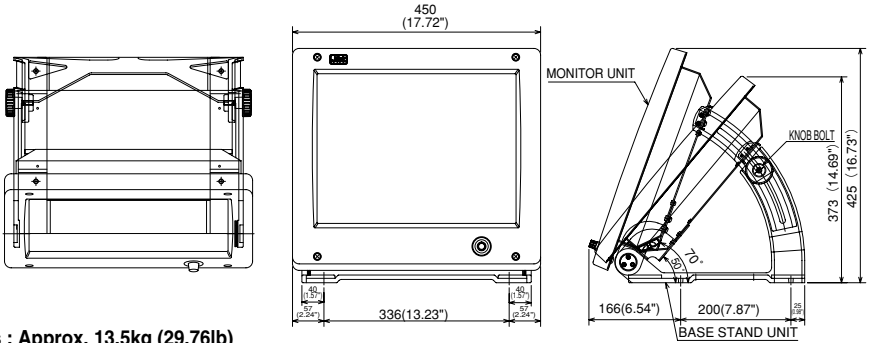


## Clear on-screen information

Menu selections, via the Keyboard or Trackball are clearly shown on the display - allowing 'at a glance' interpretation of the radar image. A wide-screen option allows the entire display screen to be used for radar image presentation, whilst important information remains visible.

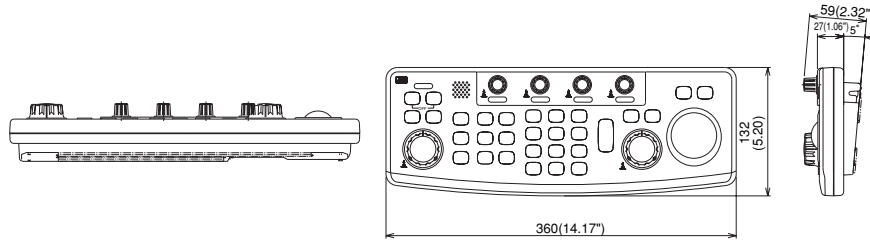
# DIMENSIONS

## Display NWZ-147



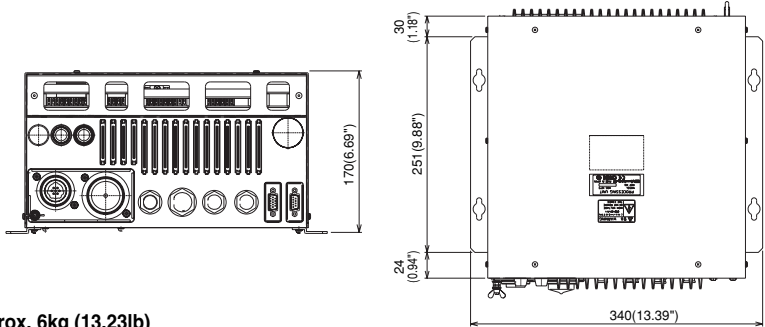
Mass : Approx. 13.5kg (29.76lb)

## Keyboard NCE-7699



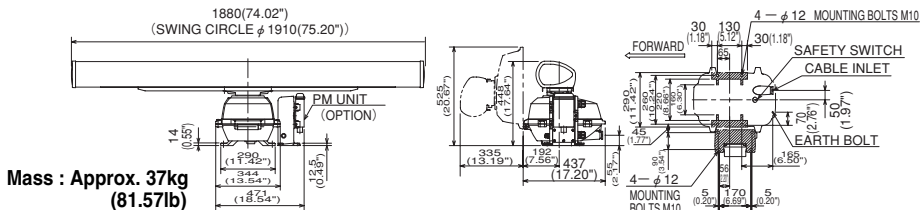
Mass : Approx. 1.3kg (2.87lb)

## Processor NDC-1273



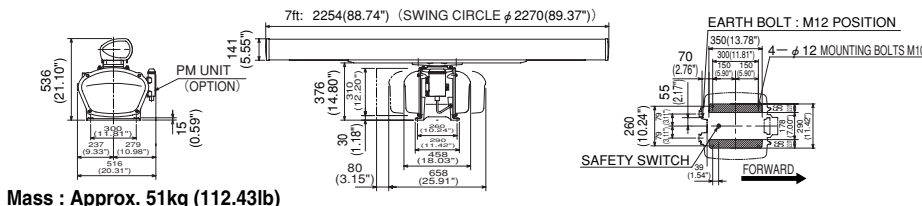
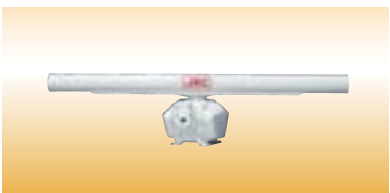
Mass : Approx. 6kg (13.23lb)

## 6ft Scanner NKE-2102-6



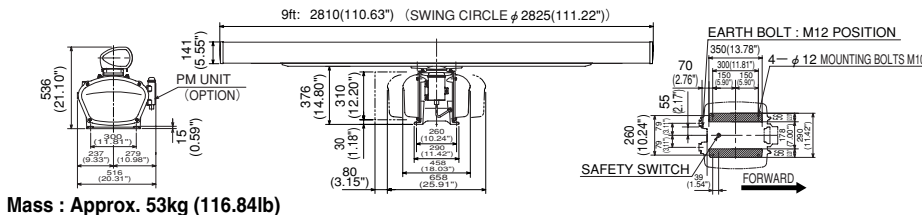
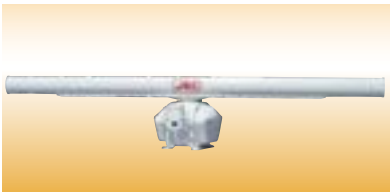
Mass : Approx. 37kg (81.57lb)

## 7ft Scanner NKE-2252-7



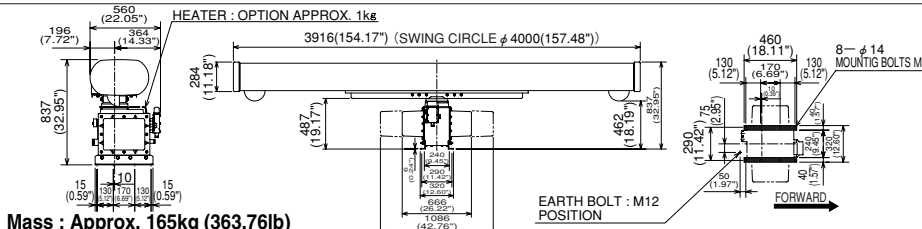
Mass : Approx. 51kg (112.43lb)

## 9ft Scanner NKE-2252-9



Mass : Approx. 53kg (116.84lb)

## 12ft Scanner NKE-1075A



Mass : Approx. 165kg (363.76lb)

# JMA-5300 SPECIFICATIONS

Model		JMA-5310-6	JMA-5320-7	JMA-5320-9	JMA-5330-12
Display format		Raster scan PPI format			
Range scale		0.125／0.25／0.5／0.75／1.5／3／6／12／24／48／96 (120) NM			
Scanner	Model	NKE-2102-6	NKE-2252-7	NKE-2252-9	NKE-1075A
	Scanner	6ft	7ft	9ft	12ft
	Output	10kW	25kW	25kW	30kW
	Transmitting frequency	9410 ±30MHz			3050±10MHz
	Polarization characteristic (-3dB width)	H: 1.2°, V: 20°	H: 1.0°, V: 20°	H: 0.8°, V: 20°	H: 1.9°, V: 30°
	Rotation speed	Approx 24rpm	Approx 24rpm		Approx 26 / 21rpm(60/50Hz)
	Pulse width	0.08uS / 2250Hz, 0.25uS / 1700Hz, 0.5uS / 1200Hz, 0.8uS / 750Hz, 1.0uS / 650Hz	0.08uS / 2200Hz, 0.20uS / 2200Hz, 0.4uS / 1400Hz, 0.8uS / 750Hz, 1.0uS / 650Hz		0.07uS / 1900Hz, 0.20uS / 1900Hz, 0.3uS / 1900Hz, 0.6uS / 1100Hz, 1.2uS / 570Hz
	Transmitter / receiver switching	Circulator diode			Circulator+TRHPL
	Frequency conversion	Microwave IC (Mic)			
	Tuning	Automatic			
Environment		Temperature: -25～+55°C, Humidity: 93% @40°C			
Display	Processor	Model	NDC-1273		
		Screen display	Head-up / North-up / Course-up		
		Motion mode	Relative motion(RM)with True trail / Relative motion(RM)with Relative trail / True motion		
		EBL	2-line/Bearing: 000.0-359.9° (4-digit)		
		VRM	2-marker/Scale: 0.000-96.0 (or 120.0) NM (4-digit)		
		Course display	off / 15sec / 30sec / 1min / 3min / 6min / 10min / 15min / 30min / 60min / continuous		
	Chart display	C-MAP			
		Model	NWZ-147		
	Display unit	LCD	18.1-inch, color (1280 X 1024 dots (SXGA))		
		Valid diameter	more than 250mm		
		Installation cable	5m (between the processor and the display unit)		
	Operation unit	Model	NCE-7699		
		Installation cable	5m (between the processor and the operation unit)		
	Connection box	Model	_____	_____	_____
Environment		Temperature: -15～+55°C, Humidity: 93% @40°C, water-proof: IPX2			
Installation cable		CFQ-6912-20 (Standard 20m)			CFQ-6912-5 (Standard 5m) 2695110056 (Standard 20m)
Input voltage (Voltage range)		DC24V (DC21.6～31.2V)			DC24V (DC21.6～31.2V) AC230V(±10%)50/60Hz 1φ ※1
Power consumption		Average 150W, Maximum 300W	Average 200W, Maximum 300W		Average 150W+200VA Maximum 150W+3kVA
Option	NSK Unit	NCT-59 (built-in Processor unit)			
	ARPA unit -Professional version- ※2	NCA-877W (built-in Processor unit)			
	ATA unit -Common version- ※2	NCA-877 (built-in Processor unit)			
	Performance monitor ※2	NJU-64			NJU-63
	Inter-switch box	NQE-3141-4 (Max.4 radars)			
	AIS Interface unit	NQA-4250 (built-in Processor unit)			
	Plotting Function unit	NDB-34 (built-in Processor unit)			
AC Rectifier		NBA-3308 (100 / 110 / 115 / 200 /230 Vac)			

※1 : For the scanner of JMA-5330-12, AC power source is needed for the motor of scanner.

※2 : For compliance with IMO requirement, ARPA or ATA unit, and performance monitor are needed.

## CAUTION

- Read the Instruction Manual before your use for safety in operation.
- Do not install this equipment in a place with water, wetness, vapor, dust and oily smoke. Otherwise, a fire, electric shock or failure may result.
- For the installation work for this equipment, request to JRC agents or dealers. The installation work done by any non-specialist personnel may result in an electric shock or failure.
- The specification and appearance of the equipment may be subject to change without notice.

For further information, contact:



Since 1915

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