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# JMA-5300 series Black Box Radar

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Complies with SOLAS  
carriage requirements for  
vessels under 10,000 GT.

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

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**Constaview™ digital signal processing**  
**TEF™ multi-level target enhancement**  
**Optional chart overlay and ARPA functionality**  
**Complete series of X and S-band scanners and  
display size options**

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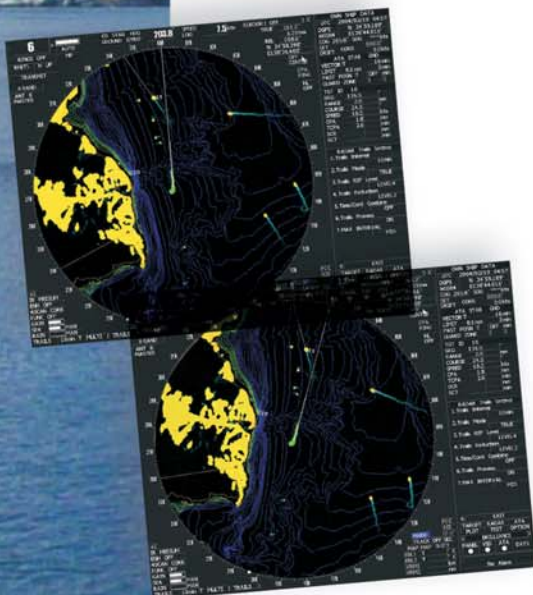
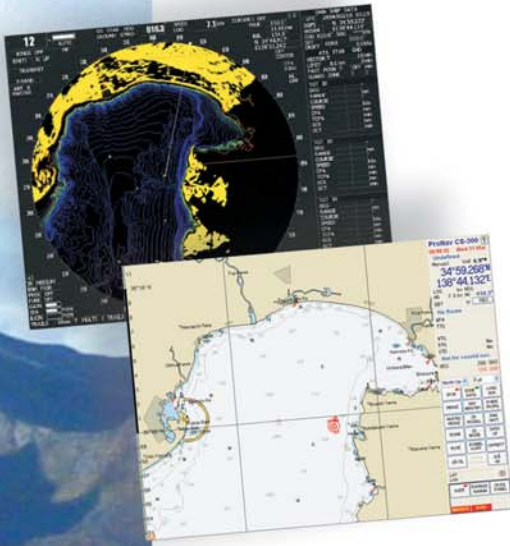


*Japan Radio Co., Ltd.*

# JMA-5300 series – performance features

## Unique features

- 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.



## Sector Adaptive Sea Clutter

Conventional marine radars use a single Sea Clutter level for the complete radar picture. The highly advanced processor of the JMA-5300 series has the capability to simultaneously use different levels of Sea Clutter in various sectors of the radar image.

This capability is very useful when navigating in coastal waters with land on one side of the vessel.

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 / 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 discrimination between targets.

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

TEF<sup>TM</sup> is available in three levels - x5, x9 and x17.

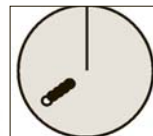
## Constaview<sup>TM</sup>

All the information gathered by the radar is stored in the system, therefore switching from one view, i.e North-up to Head-up, scrolling or Off-centering instantly produces a new, complete radar image, reflecting the new selection. During Range changes the picture is reproduced after only one scan.

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

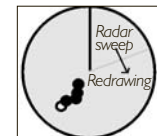
## Real-time Head-up mode

Constaview<sup>TM</sup>



*True Trails*  
Constaview<sup>TM</sup> refreshes the image every 1/60s.  
Despite heading changes trails are always True.

Conventional



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

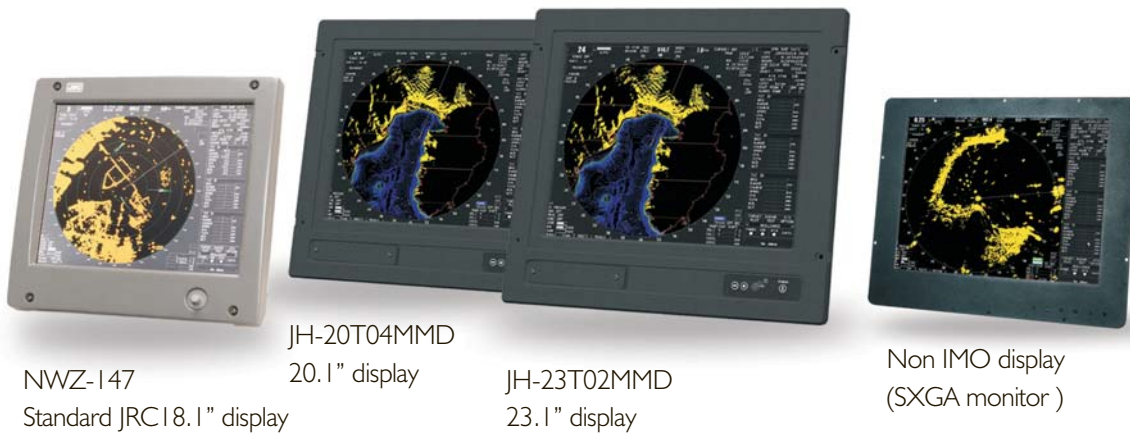


# JMA - 5300 series – system flexibility

## Custom display configuration

JMA-5300 can be combined with a range of display units. The units have been selected as a result of their proven reliability and sharp image presentation. Selectable day/night background color.

Interpretation of the radar image is enhanced by the use of individual colors for marks, symbols etc. Uniquely, a user selected display unit can be added to the system, for non IMO use.



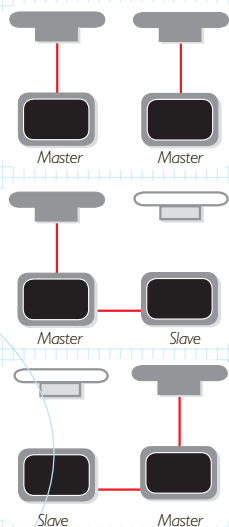
## Flexible Black Box configuration and interswitch option

The processor unit is the heart of the JMA-5300. A range of system configurations can be specified. Optional ARPA function module with 30 or 100 targets, and/or AIS interface can be built-in.



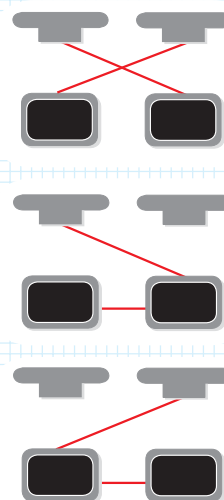
### Standard configurations

Up to two displays per radar



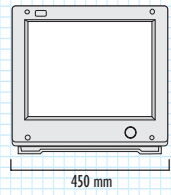
### Optional Interswitch

Up to four radars are fully interswitchable

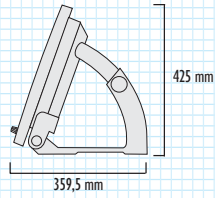


# JMA-5300 series – dimensions and weights

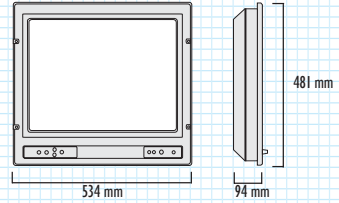
## Dimension drawings - Display



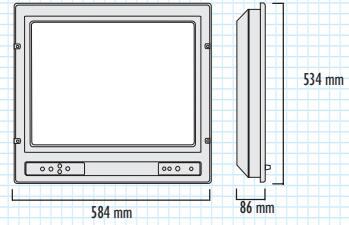
**NWZ-147**  
Weight 13,5 kg



**JH-20T03MMD**  
Weight 14,0 kg

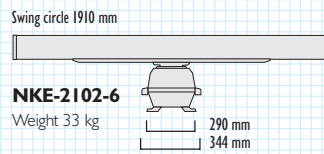


**JH-20T04MMD**  
Weight 15,0 kg

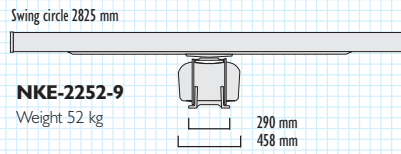


**JH-23T02MMD**  
Weight 17,0 kg

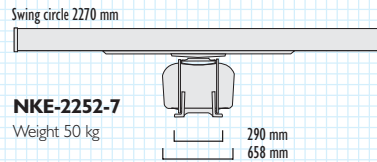
## Dimension drawings - Scanner unit



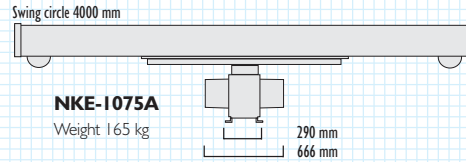
**NKE-2102-6**  
Weight 33 kg



**NKE-2252-9**  
Weight 52 kg

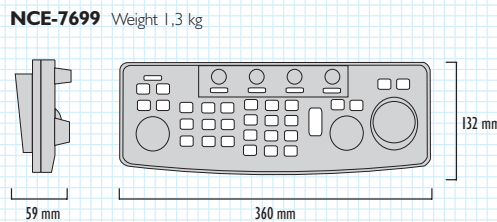


**NKE-2252-7**  
Weight 50 kg

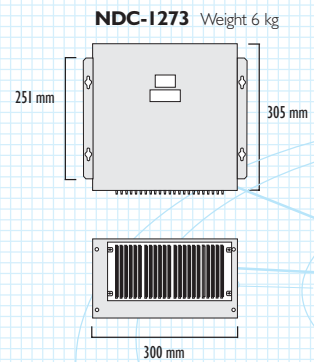


**NKE-1075A**  
Weight 165 kg

## Dimension drawings - Keyboard, Processor unit



**NCE-7699** Weight 1,3 kg



**NDC-1273** Weight 6 kg

# JMA-5300 series

## – specifications

Model	JMA-5310-6	JMA-5320-7	JMA-5320-9	JMA-5330-12
Display Range Scale	Color Raster Scan PPI 0.125/0.25/0.5/0.75/1.5/3/6/12/24/48/96 (120)			
Scanner unit				
Model	NKE-2102-6	NKE-2252-7	NKE-2252-9	NKE-1075A
Antenna length	6ft.	7ft.	9ft.	12ft.
Transmitting power	10 kW	25kW	25kW	30kW
Transmitting frequency	9410MHz +/- 30MHz			3050MHz +/- 10MHz
Beam width 3 db	Hor. 1.2°, Ver. 20°	Hor. 1.0°, Ver. 20°	Hor. 0.8°, Ver. 20°	Hor. 1.9°, Ver.30°
Rotation speed	approx. 27rpm	approx. 24rpm		approx. 26/22rpm (60/50Hz)
Pulse width (Reception freq.)	0.08µs/2250Hz, 0.25µs/1700Hz, 0.5µs/1200Hz, 0.8µs/750Hz, 1.0µs/650Hz	0.07µs/2200Hz, 0.20µs/2200Hz, 0.4µs/1200Hz, 0.8µs/750Hz, 1.0µs/650Hz		0.07µs/1900Hz, 0.20µs/1900Hz, 0.3µs/1900Hz, 0.6µs/1100Hz, 1.2µs/570Hz
Duplexer	Circular + Diode Limiter			Circular + TRHPL
Tuning	Automatic / Manual			
Ambient condition	Temperature: -25°C+55°C, Relative Humidity: 93% @40°C			
Processor unit				
Model	NDC-1273			
Bearing indication	North-Up / Course-up / Head-Up			
Presentation mode	RM display with True trail, RM display with Relative trail, TM display			
EBL	2 (EBL1 / EBL2) (Center/Independent) 000.0 deg - 359.9 deg, Numerical indication in 4 digits			
VRM	2 (VRM1/VRM2), 0.000 - 96.0nm, Numerical indication in 4 digits			
Trail indication	Off/0.25/0.5/1/3/6/10/15/30/60-minutes and continuous			
Monitor				
Model	NWZ-147			
LCD	1280x1024dot (SXGA)			
Effective diameter	more than 250mm			
Connection cable	5m (Processor-Monitor)			
Keyboard				
Model	NCE-7699			
Connection cable	5m (Processor-Keyboard)			
Ambient condition	Temperature: -15°/+55°C, Relative Humidity: 93% @40°C			
Installation cable	CFQ-6912-30 Standard L= 30m			CFQ-6912-30 (Std. L=30m) 2695110056 (Std. L=30m)
Power supply (voltage)	DC24V (DC21.6 - 31.2V)			DC24V (DC21.6 - 31.2V)
Power consumption	Avg. 150W, Max. 300 W	Avg. 200W, Max. 400W		1) AC230V (10% - 50/60Hz 1ph) Avg. 150W + 200VA Max. 150W + 3kVA
Optional items				
NSK unit	NCT-59 built-in NDC-1273			
ATA unit 100 target version	NCA-877W built-in NDC-1273			
ATA unit 30 target version	NCA-877 built-in NDC-1273			
2) Performance monitor	NJU-64			NJU-63
Interswitch box	NQE-3141-4 Max. up to 4 radars			
AIS I/F unit	NQA-4250 built-in NDC-1273			
Plotting function board	NDB-34 built-in NDC-1273			
AC Rectifier	NBA-3308 AC100/110/115/200/220/230V			

- 1) AC power is required for JMA-5330-12 antenna motor.  
2) Performance monitor must be fitted on ships compliant to IMO.

All specifications are subject to change without notification.

For further information please contact:



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