



ALPHATRON  
Marine



Black box radar

# JMA-5300Mk2 series

High performance in a simple design

[jrc.am](http://jrc.am) | [alphatronmarine.com](http://alphatronmarine.com)

# Features

JRC/Alphatron Marine proudly presents the reintroduced 5300Mk2 radar series. Now fully adapted to the latest IMO rules and optionally available with a high-quality 19" display. The latest leading technologies are integrated with a set of advanced features to deliver continues high performance and are designed to seamlessly run radar images faster and more efficiently than ever before. The JMA-5300Mk2 radar series are type approved according to IMO rules for vessels up to 10.000 GT.



- Reintroduced series
- Black box design
- High-quality AlphaScreen
- Constaview digital signal processing
- TEF multi-level target enhancement
- High speed version available
- Brushless antenna motors for extended lifetime
- X-band and S-band
- IMO approved
- Part of the ProLine package

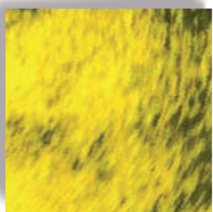
Processor unit G-004496 for JMA-5300Mk2 series



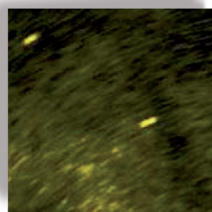
## Black box design

The radar processor is the heart of the JMA-5300Mk2 series including simple configuration enhancing easy installation and operation. Optional TT (Target Tracking), AIS and plotter functionalities can be build in. Additionally, both radars are able to present wind and echosounder information at a dedicated segment on the screen.

## Wide dynamic range receiver



• Saturation of noises on receiver

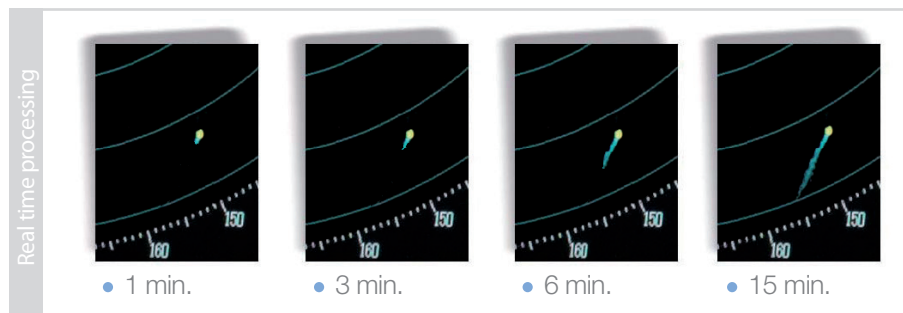


• Wide dynamic range

The radar contains an integrated wide dynamic range receiver that, compared to conventional models, significantly improves the differentiation of noise and targets under sea clutter. The radar system overcomes different sources of unwanted signals, maintaining a constant level of overall visible clutter.

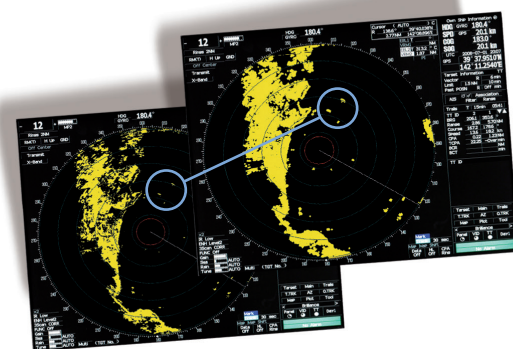
# Radar trails

Other ship's movement and speed can be monitored from length and direction of their trails, primary serving for collision avoidance. The JMA-5300Mk2 series integrate four different trail length modes, that will show a ship's course instantly, a unique operational feature that allows for more flexibility.



# Clearly identifies targets

With our in-house developed radar core, we can guarantee, even in bad weather, a clear radar image with clear targets. Developed exclusively by JRC, TEF, allows target enhancement relative to the target size. The smaller echoes are far more enlarged than bigger echoes, giving a better on-screen separation and identification.



- Standby
- Rotates EBL azimuth
- Acknowledge alarm
- Allocate function
- North-up, head-up and course-up
- Shrink/expand observation range
- Change VRM distance
- Trackball

# Keyboard

The keyboard allows you to carry out all radar operations simply by using the keyboard or on-screen by use of the trackball. The responsive feel keys allow logical and precise operation and integrates function keys for one-touch access to EBL, VRM, GAIN, SEA and RAIN. This makes it easy to navigate through all common used tasks.

# Choose your scanner

A wide range of X-band and S-band scanners are available depending on installation space and required performance, all with exceptionally reliable target detection capabilities. The JMA-5300Mk2 radar series are type approved according to IMO rules for vessels up to 10.000 GT. The latest leading technologies are integrated with a set of advanced features that allow running images faster and more efficient than ever before. Also, the brushless antenna motors in the scanner guarantee for extended lifetime.

Choose your scanner	Width	TX power	HS	Band	
				X-band	S-band
NKE-2103	4 ft	10 kW	-	V	V
	4 ft	10 kW	v		
NKE-2103	6 ft	10 kW	-	V	V
	6 ft	10 kW	v		
NKE-2254	6 ft	25 kW	v	V	V
	7 ft	25 kW	-		
	9 ft	25 kW	-		
NKE-1130	12 ft	30 kW	-	V	V

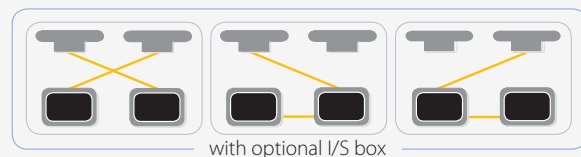
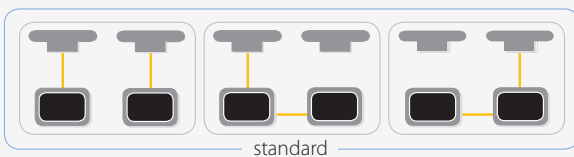
V SOLAS/IMO approved 

## Display

Optionally the radar can be connected to either the high resolution 19-inch NWZ-173-DT color LCD monitor, supported by advanced signal processing technology, or a high-quality 19-inch AlphaScreen which feature high brightness and astonishing 590 candelas, providing excellent visibility. The NWZ-173-DT includes a stand while the AlphaScreen is available as flush mount.

Size	Description	Pixels	Resolution	Aspect ratio	IMO category	Vessel size
19-inch	AlphaScreen 19"	1280 by 1024	SXGA	5:4	CAT2 radar 250 mm	300-9,999 GT
19-inch	NWZ-173-DT	1280 by 1024	SXGA	5:4	CAT2 radar 250 mm	300-9,999 GT

Optional interswitching up to 8 displays is possible.

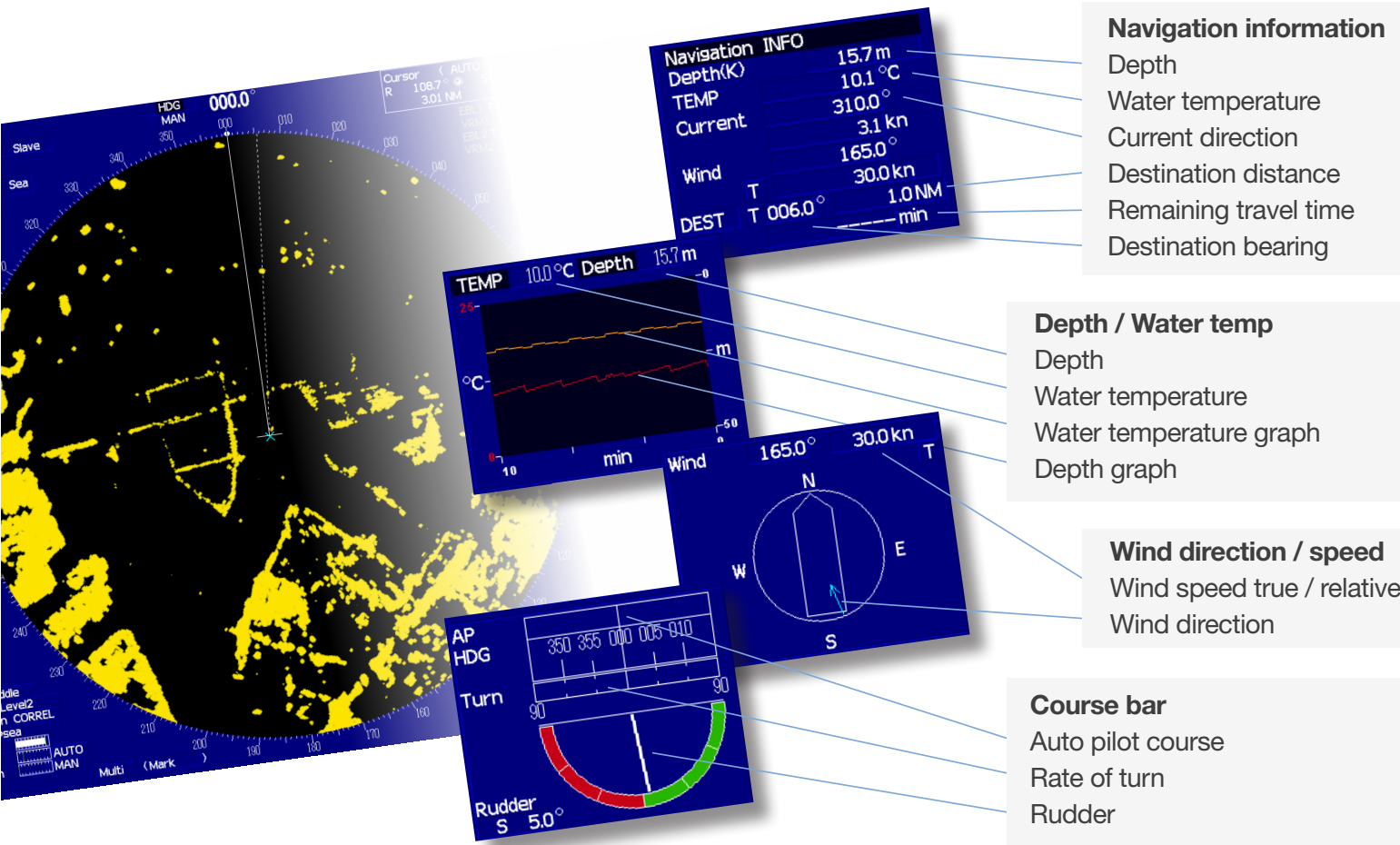


## Clear on-screen info

Menu selections, via the keyboard or trackball are clearly shown on the display - allowing "at a glance" interpretation of the radar image.

You can also select day and night background modes and adjust the brilliance at your own convenience.

- Sensor info
- Cursor/marker info
- Own ship info
- Target tracking & AIS info
- Menu and digital info
- Alarm info
- Signal processing info



# Specifications JMA-5300Mk2 series

JMA-5312-4    JMA-5312-6    JMA-5312-4HS    JMA-5312-6HS    JMA-5322-7    JMA-5322-9    JMA-5322-6HS    JMA-5332-12

Model									
IMO compliant	V	V	V	V	V	V	V	V	
Display	colour raster scan PPI								
Range scale	0.125/0.25/0.5/0.75/1.5/3/6/12/24/48/96 NM								
Scanner									
Model	NKE-2103-4	NKE-2103-6	NKE-2103-4HS	NKE-2103-6HS	NKE-2254-7	NKE-2254-9	NKE-2254-6HS	NKE-1130	
Antenna length	4 ft.	6 ft.	4 ft.	6 ft.	7 ft.	9 ft.	6 ft.	12 ft.	
Transmitting power	10 kW				25 kW			30 kW	
Transmitting frequency	9410MHz ± 30MHz							3050MHz±20MHz	
Beam width 3 dB	Hor. 1,8°, Ver. 20°	Hor. 1,2°, Ver. 20°	Hor. 1,8°, Ver. 20°	Hor. 1,2°, Ver. 20°	Hor. 1,0°, Ver. 20°	Hor. 0,8°, Ver. 20°	Hor. 1,2°, Ver. 20°	Hor. 1,9°, Ver. 25°	
Rotation speed	27 rpm		48 rpm		24 rpm			48 rpm	
Pulse width (receive freq.)	0.08 µs/2250 µs 0.25 µs/1700 µs 0.5 µs/1200 µs 0.8 µs/750 µs 1.0 µs/650 µs				0.07 µs & 0.2 µs/2250 µs 0.3 µs/1900 µs, 0.4 µs/1400 µs 0.8 µs/750 µs 1.0 µs/650 µs 1.2 µs/510 µs				
Duplexer	circular + diode limiter								
Tuning	automatic / manual								
Ambient condition	temperature -25 to 55 °C, relative humidity 0 to 93 % non-condensing								
Processor									
Model	NDC-1417								
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° - 359.9°, digital display								
VRM	2 (VRM1/VRM2), 0.000 - 97.7 NM, digital display								
Trail indication	4 stages: short, middle, long, super long (e.g. short: off/0.25/0.5/1/3/6/10/15-min and continuous)								
Keyboard									
Model	NCE-5171								
Connection cable	5 m (processor-keyboard)								
Installation cable	CFQ-6912-30 standard L=30 m (optional up to 65 m)							CFQ-6912-20 (L=20 m) 2695110056 (L=40 m)	
Power supply (voltage)	DC12/24V -10/+30%*2	24 VDC (21.6 to 31.2 VDC) / 100 to 120/220 to 240 VAC (50/60 Hz, 1 φ) <sup>1</sup>						24 VDC (21.6 to 31.2 VDC) 100 to 240 VAC <sup>2</sup>	
Power consumption (at max wind load)	typ.120W / max 600W							240 W+1600 VA	
Ambient condition	temperature -15 to +55 °C, relative humidity 0 to 93 % non-condensing (processor, display, keyboard)								

1. AC power requires rectifier NBA-5111

All specifications are subject to change without notification.

2. 100 to 120/220 to 240 VAC (50/60 Hz, 1φ). AC power is required for JMA-5332-12 antenna motor scanner.

Optional items

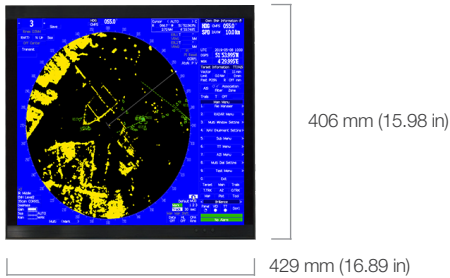
G-002622 AlphaScreen 19" for JRC Radar 100V-230 VAC  
 G-000531 NWZ-173-DT 19" color TFT LCD 24 VDC  
 G-000429 NJU-85 Performance monitor for X-band  
 G-000329 MPBX45005 PM bracket for 10 kW  
 G-000330 MPBX45006 PM bracket for 25 kW  
 G-000467 NQA-2103 AIS interface 30 targets  
 G-000404 NCT-59A NSK board  
 G-000363 NBA-5111 Power supply AC/DC in and 24 VDC out, 20 A  
 G-000374 NCA-877A ATA board 30 targets  
 G-000375 NCA-877WA ARPA board 100 targets  
 G-000107 CFQ-6912-10 Scanner cable 10 m  
 G-000108 CFQ-6912-20 Scanner cable 20 m

G-000109 CFQ-6912-30 Scanner cable 30 m  
 G-000110 CFQ-6912-40 Scanner cable 40 m  
 G-000112 CFQ-6912-50 Scanner cable 50 m  
 G-000113 CFQ-6912-65 Scanner cable 65 m  
 G-000153 CHG-216 Neck heater kit for X-band, 25 kW  
 G-000152 CHG-215 Neck heater kit for S-band radars  
 G-000490 NQE-3141-4A Interswitch unit up to 4 displays  
 G-000084 CFQ-5251 Interswitch cable 10 m  
 G-000085 CFQ-5351 ISW & 2<sup>nd</sup> Keyboard interconnection cable  
 G-000115 CFQ-6999 Keyboard extension cable  
 G-006351 Heavy duty bulkhead mounting bracket

# Tech Specs JMA-5300Mk2 series

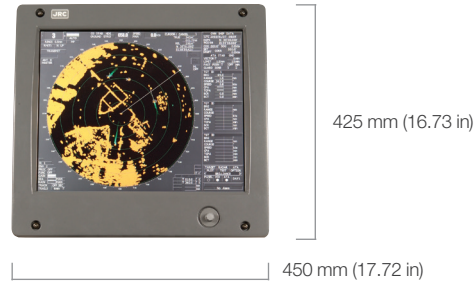
## 19-inch display

G-002622 Weight 5.9 kg (13.01 lbs)



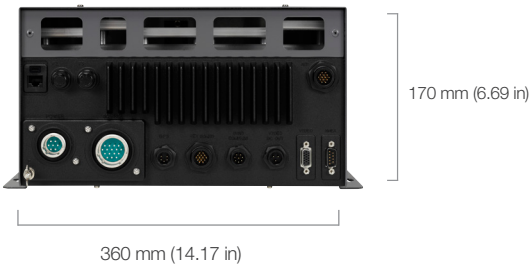
## NWZ-173-DT 19-inch display

G-000531 Weight 13.5 kg (29.76 lbs)



## Processor RoHS

NDC-1417 Weight 6 kg (13.23 lbs)



## Keyboard RoHS

NCE-5171 Weight 1.3 kg (2.87 lbs)



## 4 ft | 27 rpm | 48 rpm HS | IMO

NKE-2103-4/4HS Weight 40 kg (88.19 lbs)

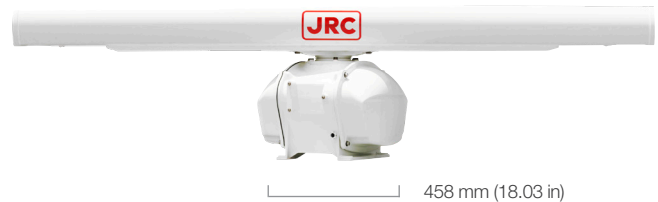
Swing circle 1320 mm (59.97 in)



## 7 ft | 24 rpm | IMO

NKE-2254-7 Weight 58 kg (127.87 lbs)

Swing circle 2270 mm (89.37 in)



## 6 ft | 27rpm | 48 rpm HS | IMO

NKE-2103-6/6HS Weight 40 kg (88.19 lbs)

Swing circle 1910 mm (75.20 in)



## 9 ft | 24 rpm | IMO

NKE-2254-9 Weight 60 kg (132.28 lbs)

Swing circle 2240 mm (88.19 in)



## 6 ft | 48 rpm HS | IMO

NKE-2254-6HS Weight 55 kg (121.25 lbs)

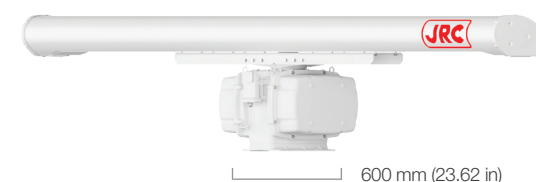
Swing circle 1910 mm (75.20 in)



## 12 ft | 24 rpm | IMO

NKE-1130 Weight 180 kg (396.83 lbs)

Swing circle 4000 mm (157.48 in)



*\*All scanners have a brushless motor and with 40 dB/dec surprious particulars*



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