



# MARINE PRODUCTS

## 2017 *Simply the Best.*

EUROPE EDITION







# VHF Handheld Transceivers



Metallic Gray Pearl White



Marine Blue

### Supplied Accessories

- USB charger, BC-217SE\*
- Belt clip, MB-133
- Antenna, FA-SC59V
- Hand strap
- Battery cell is built-in
- \* May differ or not supplied, depending on version.



### Supplied Accessories

- Battery pack, BP-252
- Battery case, BP-251\*
- Battery charger, BC-173
- AC adapter, BC-147SE\*
- Belt clip, MB-109
- Antenna, FA-SC58V
- Hand strap
- \* May differ or not supplied, depending on version.

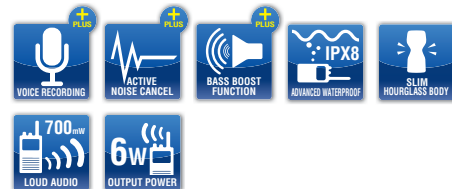


### Supplied Accessories

- Battery pack, BP-245H
- Battery charger, BC-210
- AC adapter, BC-123SE\*
- Belt clip, MB-103
- Antenna, FA-S64V\*
- Cigarette lighter cable, CP-25H\*
- Hand strap
- \* May differ or not supplied, depending on version.

## Slim, Stylish, Powerful VHF with Professional Features

VHF MARINE TRANSCEIVERS  
**IC-M73EURO PLUS**  
**IC-M73EURO**



### FEATURES

- Last call voice recording\*
- Active noise canceling\* reduces background noise by up to 90%
- Bass Boost Function\*
- IPX8 advanced waterproofing
- 6 W RF output, 700 mW loud audio
- 17 hours of long lasting operating time with BP-245H
- \*available in IC-M73EURO PLUS version only.

• Dual watch and Tri-watch functions\* • Instant access to Ch 16 and call channel • AquaQuake™ draining function • Auto power save • Priority and normal scan • Tag scan and favorite channel function • Optional speaker-microphones, HM-167/HM-202  
\*Not available in the HOL version.



# VHF Handheld Transceivers



### Supplied Accessories

- Battery pack, BP-285
- Battery charger, BC-220
- AC adapter, BC-123SE/SUK\*
- Belt clip, MB-133
- Antenna, FA-SC59V
- Hand strap
- \* May differ depending on version.

## World's Slimmest Buoyant DSC Radio

VHF MARINE TRANSCEIVER with DSC  
**IC-M93DEURO**



### FEATURES

- 2.3" large high visibility LCD
- Slimmest\* buoyant DSC radio
- Intuitive user interface
- Built-in class D DSC with a CH70 receiver
- Float'n flash and MOB auto set function
- Integrated GNSS receiver
- Active noise canceling
- \*As of September 2016, researched by Icom.

• IPX7 waterproof • Navigation function • 50 waypoint memories • Dual watch and Tri-watch functions\* • Favorite channel function • AquaQuake™ draining function • Supports new 4-digit channels effective from January 1st, 2017  
\*Not available in the HOL version.



### Supplied Accessories

- Battery pack, BP-252
- Battery charger, BC-173
- AC adapter, BC-147SE
- Belt clip, MB-103Y
- Neck strap

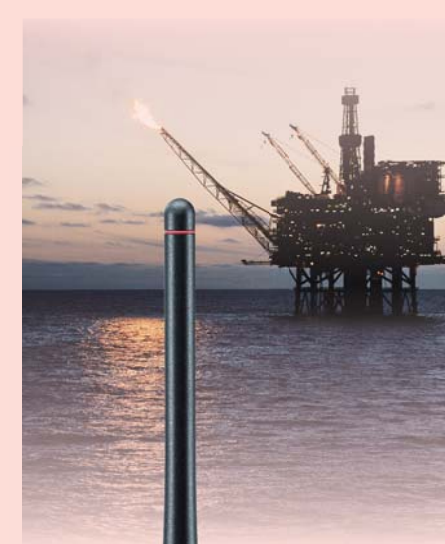
## GMDSS Portable for Survival Craft

SURVIVAL CRAFT 2-WAY RADIO  
**IC-GM1600E**



### FEATURES

- Meets strict environmental requirements for GMDSS
- 2 W output power for long lasting battery
- Primary (non-rechargeable) lithium battery pack, BP-234
- Highly visible yellow-coloured body
- Instant access to Ch 16 and call channel • Auto power save • 4-step battery indicator



### Supplied Accessories

- Battery pack, BP-227AX
- Battery charger, BC-152N
- AC adapter, BC-147SE\*
- Belt clip, MB-86
- Antenna, FA-S59V
- Hand strap
- \* Not supplied depending on version.

## ATEX Intrinsically Safe Marine Radio

VHF MARINE TRANSCEIVER  
**IC-M87ATEX**



### FEATURES

- ATEX intrinsically safe type approval (Approved classes: II2G Ex ib IIA T3 Gb)
- Tough and compact body
- Marine and land channel groups
- 22 programmable land channels
- Built-in voice scrambler
- Dual watch and Tri-watch functions • Instant access to Ch 16 and call channel • Auto power save • Auto scan function • Tag scan function • Optional speaker-microphone, HM-138

DO NOT use the transceiver with any other equipment not specified in the option list (Pages 3). Please ask your dealer to ensure the ATEX rating is acceptable for the intended place of use.



# Options

MODEL NAME	BATTERY CASE	BATTERY PACKS						DESKTOP CHARGERS		
	BP-251*1 LR03 (AAA)×5 cells	BP-227AX (Li-ion) 7.4 V/1850 mAh (min.) 1950 mAh (typ.) <i>For Intrinsically Safety</i>	BP-245H (Li-ion) 7.2 V/2100 mAh (min.) 2200 mAh (typ.)	BP-285 (Li-ion) 7.2 V/1485 mAh (min.) 1570 mAh (typ.)	BP-252 (Li-ion) 7.4 V/940 mAh (min.) 980 mAh (typ.)	BP-234 (Lithium) 9.0 V/3300 mAh (non-rechargeable)	BC-210 Rapid charger	BC-220 Rapid charger	BC-162 Rapid charger	
IC-M25EURO*2										
IC-M73EURO			✓				✓			
IC-M93D EURO				✓				✓		
IC-M35	✓				✓				✓	
IC-GM1600E					(On-board use only)					
IC-M87ATEX		✓			(For survival craft)					

\*1 The IC-M35 floats when used with most common brand AAA batteries. Battery weight varies by manufacturer. Please check your IC-M35 for buoyancy in a shallow area first when using AAA batteries.  
\*2 As the Lithium-ion battery cell (3.7 V 1500 mAh) is built-in to the IC-M25EURO, the user cannot replace the battery cell.

MODEL NAME	DESKTOP CHARGERS			MULTI-CHARGERS			AC ADAPTERS		
	BC-173 Regular charger	BC-119N Rapid charger	BC-152N Regular charger	BC-197 Rapid charger	BC-214 Rapid charger	BC-121N Rapid charger	BC-123SE/SUK 12 V/1 A	BC-145SE/SUK 16 V/0.93 A	BC-147SE 12 V/250 mA
IC-M25EURO									
IC-M73EURO									
IC-M93D EURO									
IC-M35	✓								
IC-GM1600E	(On-board use only)								
IC-M87ATEX		✓*3	✓*3						

\*3 The battery charger must not be used in an explosive atmosphere.

MODEL NAME	AC ADAPTERS	USB CHARGER	CHARGER ADAPTERS	CIGARETTE LIGHTER CABLE	DC POWER CABLES		SPEAKER MICROPHONES		
	BC-157S 12 V/7.5 A	BC-217SE 5 V/1 A	AD-100 AD-129*4 AD-133*5	CP-25H	OPC-515L	OPC-656	HM-213 Waterproof	HM-202 Waterproof	HM-167 Waterproof
IC-M25EURO									
IC-M73EURO									
IC-M93D EURO									
IC-M35									
IC-GM1600E									
IC-M87ATEX									

\*4 AD-129 is supplied with BC-197, depending on version.  
\*5 AD-133 is supplied with BC-214, depending on version.

MODEL NAME	SPEAKER MICROPHONES			BELT CLIPS		LEATHER BELT HANGERS			ANTENNAS
	HM-228 Waterproof	HM-165 Waterproof	HM-138 Waterproof	MB-86 Swivel type	MB-98 MB-103/103Y MB-109 MB-133 Alligator	MB-96N Swivel type	MB-96F Fixed type	MB-96FL Long type	FA-S59V FA-S64V FA-SC58V FA-SC59V
IC-M25EURO									
IC-M73EURO									
IC-M93D EURO	✓	✓							
IC-M35		✓							
IC-GM1600E									
IC-M87ATEX									

✓ : Applicable □ : Not applicable

The IC-M87 ATEX Intrinsically Safe model should only be used with the specified Intrinsically Safe approved options. Some options may not be available in some countries. Please ask your dealer for details.

# Specifications

	IC-M25EURO	IC-M73EURO	IC-M93D EURO	IC-M35	IC-GM1600E	IC-M87ATEX
Frequency range (Unit: MHz)	Tx: 156.000–161.450 Rx: 156.000–163.425	Tx: 156.000–161.450 Rx: 156.000–163.425	Tx: 156.000–161.450, 156.000–161.600* Rx: 156.000–163.425 CH70: 156.525 (* For only HOL version)	Tx: 156.000–161.450 Rx: 156.000–163.425	Tx/Rx: 156.300–156.875	Tx: 156.000–161.450 Rx: 156.000–163.425 Tx/RX: 146–174 (PMR)
Dimensions (projections not included; W x H x D)	56.6 x 134.2 x 30.5 mm	52.5 x 125 x 30 mm	57.0 x 144.6 x 38.5 mm	62 x 139.5 x 43 mm	65 x 145 x 44 mm	62 x 97 x 39 mm
Weight (approx.)	220 g (With MB-133 and FA-SC59V)	320 g (With BP-245H, MB-103 and FA-S64V)	300 g (With BP-285, FA-SC59V and MB-133)	295 g (With BP-252, MB-109 and FA-SC58V)	385 g (With BP-234)	280 g (With BP-227AX)
Current drain	Transmit (High)	2.3 A (at 3.7 V DC)	1.5 A typical	1.5 A	1.5 A typical	1.0 A/0.7 A (2 w/1 w)
	Max. audio	300 mA typ. (External SP) 200 mA typ. (Internal SP)	250 mA typ. (External SP) 450 mA typ. (Internal SP)	250 mA typ. (External SP) 450 mA typ. (Internal SP)	200 mA typ. (External SP) 300 mA typ. (Internal SP)	200 mA typical
Sensitivity (at 20 dB SINAD; emf)	-6 dBμ typical	-4 dBμ typical	-6 dBμ typical	-2 dBμ typical	-2 dBμ typical	-2 dBμ typical (Marine) -4 dBμ typical (PMR)
Intermodulation rejection	68 dB	68 dB	68 dB	68 dB	68 dB	68 dB (Marine) 65 dB (PMR)
Audio output power (10% distortion)	External SP	200 mW typ. (4 Ω load)	200 mW (8 Ω load)	200 mW (8 Ω load)	200 mW (8 Ω load)	200 mW (8 Ω load)
	Internal SP @ 1 kHz	550 mW typ. (12 Ω load)	700 mW typ. (8 Ω load)	900 mW typ. (12 Ω load)	700 mW typ. (16 Ω load)	350 mW typ. (8 Ω load)
RF output power	5 W/1 W/0.5 W* (* For only FRG version)	6 W/3 W/1 W/0.5 W* (* For only FRG version)	5 W/1 W/0.5 W* (* For only FRG version)	6 W/1 W/0.5 W* (* For only FRG version)	2 W/1 W	1 W
Operating time (approx.)*	11 hours (with built-in battery)	Plus version 17 hours Basic version 20 hours (with BP-245H)	9 hours (with BP-285)	8 hours (with BP-252)	Specified as IMO Res. MSC.149(77)	19 hours (with BP-227AX)
Waterproof protection	IPX7 (1 m depth/30 min.)	IPX8 (1.5 m depth/30 min.)	IPX7 (1 m depth/30 min.)	IPX7 (1 m depth/30 min.)	Specified as IMO Res. MSC.149(77)	IPX7 (1 m depth/30 min.)

Measurements made in accordance with EN 301 178. EN 300 086 for IC-M87ATEX PMR. IEC61097-12 for IC-GM1600E.  
\* Typical operation, Tx:Rx:Stand-by=5:5:90

## ATEX Intrinsically Safe versions Approved classes

The approved rating is IICG Ex ib IIA T3 Gb.  
Special conditions for use: • Must be used with BP-227AX  
Approved accessories: • Speaker-microphone HM-138  
Either the jack cover or HM-138 must be attached to the connector.  
EN 60079-0: 2012 + A11: 2013, EN 60079-11: 2012

**Please Note:** The optional chargers are not approved as intrinsically safe.  
The battery should only be charged in non hazardous areas.  
The battery should only be changed in non hazardous areas.  
Ambient operating temperature: -20°C to +55°C  
DO NOT use the transceiver with any other equipment not specified in the option list (Pages 3).

## Applicable gas and vapor types

Temp.	T1	T2	T3
Class	Acetone, Ethane, Ethylacetate, Ammonia, Benzene, Acetic acid, Carbon monoxide, Methanol, Propane, Toluene	Ethyl alcohol, i-amyl acetate, n-butan, n-butyl alcohol	Benzene, Diesel-fuel, Aviation-fuel, Heating-oils, n-hexane

\* Please ensure the IC-M87 ATEX rating is acceptable for the intended place of use.





# VHF Fixed Mount Transceivers

## 4.3 inch Colour TFT LCD, Built-in AIS Receiver and Flexible Remote Control Configurations

### VHF MARINE TRANSCEIVER IC-M605EURO



#### FEATURES

- Wide viewing angle, high contrast 4.3 inch colour TFT LCD
- Remote control with up to three command stations/COMMANDMIC™
- Integrated AIS receiver (AIS RX data can be output through NMEA 0183-HS)
- NMEA 2000™ connectivity • Intuitive user interface
- Class leading receiver performance (Selectivity and IMD: 80 dB typ.)
- Active noise canceling • Last call voice recording for two minutes
- Voice scrambler with optional UT-112 • 15 W loud audio and 30 W two-way hailer
- Integrated GNSS receiver (GPS, GLONASS and SBAS)

- NMEA 0183-HS (High Speed) Version 1.01 connectivity (38.4 kbps) • IPX8 advanced waterproof (1m depth water for 60 minutes) • Fog horn • Dual watch and Tri-watch functions • Instant access to Ch 16 and Call channel • Tag scan and favorite channel functions • Aqua-Quake™ draining function • Priority scan function • Display and keypad backlighting • External speaker connection • Supports new 4-digit channels effective from January 1, 2017

### Flexible Remote Control Configurations

The IC-M605EURO can be remotely controlled with up to three command stations/COMMANDMIC™. All functions (including Distress) of the IC-M605EURO can be controlled with the RC-M600. With the RC-M600 and/or HM-229B/W\* connected, the IC-M605EURO provides an intercom system allowing two way private communications.

\* Optional connection cable, OPC-2384 is required.



### Full Remote Control from Optional Command Station

#### REMOTE CONTROLLER RC-M600



### Space-Saving Compact Body with Essential Functions

#### REMOTE-CONTROL MICROPHONES HM-229B/W



- Black and white colour version



\* Photo shows HM-229B.

# VHF Fixed Mount Transceivers

## Fixed Mount VHF and AIS Receiver Combo with NMEA 2000™ Connectivity

### VHF MARINE TRANSCEIVER IC-M506EURO



COMMANDMIC, HM-195 series capable



#### FEATURES

- Integrated AIS Receiver
- NMEA 2000™ connectivity
- 2 minutes last call voice recording
- Intuitive user interface
- Active noise canceling

- 15 W loud audio and 25 W two-way hailer
- Optional COMMANDMIC™, HM-195B/SW
- IPX8 advanced waterproof (1 m depth for 60 minutes)

- Dual watch and Tri-watch functions • Instant access to Ch 16 and Call channel • Tag scan and favorite channel functions • AquaQuake™ draining function • Priority scan function • Display and keypad backlighting • External speaker connection • Option voice scrambler UT-112 • Large dot-matrix display • Rear panel microphone version

## Easy-to-Use and Even Easier to Hear!

### VHF MARINE TRANSCEIVER IC-M423G (With GPS Receiver)



COMMANDMIC, HM-195 series capable

#### FEATURES

- Intuitive user interface and white backlight display
- Active noise canceling reduces background noise by up to 90%
- 10 W loud audio, public address and foghorn
- Optional COMMANDMIC™, HM-195GB/GW
- Integrated GPS receiver simplifies wiring

- IPX7 waterproof • Dual watch and Tri-watch functions • Instant access to Ch 16 and Call channel • Tag scan and favorite channel functions • AquaQuake™ draining function • Priority scan function • Display and keypad backlighting • External speaker connection • RX speaker function • Black and super white colour version • Speaker microphone, HM-205B/SW



# VHF Fixed Mount Transceivers

## Black Box Transceiver When Space is at a Premium

### VHF MARINE TRANSCEIVER IC-M400BB



#### FEATURES

- Space saving, fully functional VHF/DSC
- Controlled by COMMANDMIC™ HM-195B/SW\* • Intuitive user interface
- Active noise canceling reduces background noise by up to 90%
- 10 W loud audio, public address and foghorn • IPX7 waterproof

- Dual watch and Tri-watch functions
- Instant access to Ch 16 and Call channel
- Tag scan and favorite channel functions
- AquaQuake™ draining function
- Display and keypad back-lighting
- External speaker connection
- RX speaker function
- \* HM-195B/SW may be sold separately, depending on version.

### VHF MARINE TRANSCEIVER IC-M323G (With GPS Receiver)



IC-M323G

### VHF MARINE TRANSCEIVER IC-M323 (Without GPS Receiver)



IC-M323



## Top Performance, Great Value

#### FEATURES

- Powerful, compact VHF/DSC with Icom value and reliability
- Intuitive user interface • High definition dot-matrix display
- Class D DSC • Integrated GPS receiver (IC-M323G only)

- IPX7 waterproof
- Dual watch and Tri-watch functions
- Instant access to Ch 16 and Call channel
- Tag scan and favorite channel functions
- AquaQuake™ draining function
- Priority scan function
- Display and keypad back-lighting
- External speaker connection

### COMMANDMIC™

#### Full Remote Control Capability



Above photo shows HM-195GB Available in black or super white.

#### REMOTE-CONTROL MICROPHONES HM-195GB/GW (White backlight LCD) HM-195B/SW (Amber backlight LCD)



#### FEATURES

- Full control 2nd station capability for IC-M506EURO or M423G
- Remote-Controller head for IC-M400BB
- Intercom function with IC-M506EURO or M423G
- Distress button on the rear panel

### AIS Transponder and AIS Receiver

#### Fully Capable Class B AIS Transponder



#### CLASS B AIS TRANSPONDER MA-500TR



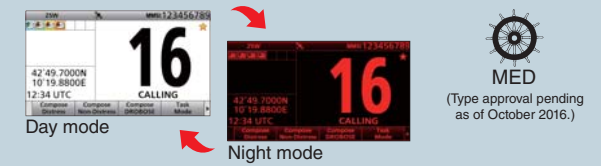
#### FEATURES

- Class B AIS transponder • MXG-5000S GPS receiver\*
- CPA and TCPA collision-risk management
- AIS target call with Icom VHF transceivers

\* The MXG-5000S may be sold separately, depending on country.

## GMDSS GMDSS VHF Transceiver

### Class A DSC VHF Radio with Wide Viewing Angle Colour TFT LCD



### VHF MARINE TRANSCEIVER GM600



PS-310 DC-DC converter

#### FEATURES

- Meets VHF GMDSS requirements for SOLAS ships
- MED\* Directive (2014/90/EU) for European merchant ships
- ITU Class A DSC (Meets ITU-R M.493-13)
- 4.3 inch wide viewing angle colour TFT LCD
- Intuitive user interface for straightforward operation
- 10 W audio output power with external speaker
- Dedicated DSC watch receiver for continuous Channel 70 monitoring

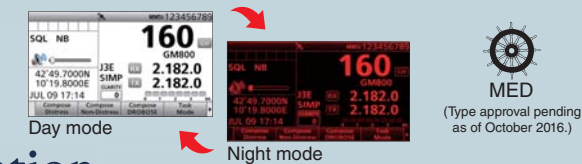
- Printer connector (D-SUB 25-pin)
- VDR (Voyage Data Recorder)/External SP connector
- IEC 61162-1 input/output
- Superior sound quality with a wide frequency range and a flat frequency response
- Optional handset, HS-98
- IPX7 waterproof for front panel
- Dual watch and Tri-watch functions
- Instant access to Ch 16 and call channel
- Tag scan and favorite channel functions
- Priority scan function
- Unified design with GM800 (MF/HF)
- Supports new 4-digit channels effective from January 1, 2017

\* Type approval pending as of October 2016.

Please Note: The optional DC-DC converter, PS-310 (#01: 24 V input, #02: 12 V input) must be used with the GM600 for MED certification compliance.

## GMDSS GMDSS MF/HF Transceiver

### Reliable Long Distance MF/HF Communication



### MF/HF MARINE TRANSCEIVER GM800



#### FEATURES

- Meets MF/HF GMDSS requirements for SOLAS ships
- MED\*1 Directive (2014/90/EU) for European merchant ship
- ITU Class A DSC (Meets ITU-R M.493-13)
- 4.3 inch wide viewing angle colour TFT LCD
- Intuitive user interface for straightforward operation
- Dedicated DSC watch receiver for continuous scanning of the six distress channels

- 125 W\*2 (PEP) output power
- Built-in 24 V DC-DC converter
- Parallel printer port
- External speaker connector
- IEC 61162-1 input/output
- Superior sound quality with a wide frequency range and a flat frequency response
- Supplied handset, HS-98
- IPX7 waterproof for controller
- Maximum 160 programmable channels
- Program scan, channel scan and channel resume scan
- Unified design with GM600 (VHF)

\*1 Type approval pending as of October 2016. \*2 85 W (PEP) 1.6– 3.999 MHz  
Please Note: The complete GMDSS installation for MF/HF DSC (Class A) and telephony additionally requires the optional antenna tuner, AT-141.



# Options

## VHF FIXED MOUNT TRANSCEIVERS

MODEL NAME	HAND MICROPHONES			COMMAND STATION	COMMANDMIC™			HORN SPEAKER	HANDSET
	HM-205B/RB/W Speaker microphone	HM-200B/SW	HM-214V	RC-M600	HM-229B/W	HM-195B/SW	HM-195GB/GW	SP-37	HS-98
IC-M605EURO	✓ (Use with HM-205RB)			✓	✓			✓	
IC-M506EURO	✓					✓	✓		
IC-M423G	✓					✓	✓		
IC-M400BB						✓	✓		
IC-M323G		✓							
IC-M323		✓							
GM600			✓						✓

MODEL NAME	CONNECTION CABLE	EXTENSION CABLES			DC-DC CONVERTER	FLUSH MOUNT KITS		VOICE SCRAMBLER	GPS ANTENNA
	OPC-2384 12-pin to 8-pin for use with COMMANDMIC	OPC-2377 10 m; 32.8 ft cable	OPC-1541 6.1 m; 20 ft cable for use with COMMANDMIC and rear microphone connection	OPC-1000 6.1 m; 20 ft cable for use with rear microphone connection	PS-310 (#01) 24 V input PS-310 (#02) 12 V input	MB-132	MB-75	UT-112 Total of 32 voice scramble codes available	UX-241
IC-M605EURO	✓ (Use with HM-229B/W)	✓ (Use with RC-M600)	✓ (Use with HM-229B/W, HM-205RB)	✓ (For use with HM-205RB)				✓	✓
IC-M506EURO			✓ (Use with COMMANDMIC)	✓ (For use with rear mic version)		✓	✓	✓	
IC-M423G			✓ (Use with COMMANDMIC)			✓			
IC-M400BB			✓ (Use with COMMANDMIC)						
IC-M323G						✓			
IC-M323						✓			
GM600					✓		✓		

### AIS TRANSPONDER

MODEL NAME	FLUSH MOUNT KIT	GPS RECEIVER
MA-500TR	✓ MB-75	✓ MXG-5000S

### MF/HF FIXED MOUNT TRANSCEIVER

MODEL NAME	HAND MICROPHONE	HANDSET	EXTERNAL SPEAKER	ANTENNA TUNER	SHIELDED CONTROL CABLE	MOUNTING BRACKET
GM800	✓ HM-214H	✓ HS-98	✓ SP-24E	✓ AT-141 IP56	✓ OPC-1465 10 m; 32.8 ft	✓ MB-108

✓ : Applicable    □ : Not applicable

# Specifications

## VHF FIXED MOUNT TRANSCEIVERS

	IC-M605EURO	IC-M506EURO	IC-M423G	IC-M400BB	IC-M323G	IC-M323	GM600
	Frequency range	Tx: 156.000–161.600 MHz Rx: 156.000–163.425 MHz CH 70: 156.525 MHz AIS 1: 161.975 MHz AIS 2: 162.025 MHz	Tx: 156.000–161.450 MHz Rx: 156.000–163.425 MHz CH 70: 156.525 MHz AIS 1: 161.975 MHz AIS 2: 162.025 MHz	Tx: 156.000–161.450 MHz Rx: 156.000–163.425 MHz CH 70: 156.525 MHz	Tx: 156.000–161.450 MHz Rx: 156.000–163.425 MHz CH 70: 156.525 MHz	Tx: 156.000–161.450 MHz Rx: 156.000–163.425 MHz CH70: 156.525 MHz	Tx: 156.000–161.450 MHz Rx: 156.000–163.425 MHz CH70: 156.525 MHz
Power supply requirement	13.8 V DC (10.8–15.6 V DC)	13.8 V DC (10.8–15.6 V DC)	13.8 V DC (10.8–15.6 V DC)	13.8 V DC (10.8–15.6 V DC)	13.8 V DC (10.8–15.6 V DC)	13.8 V DC (10.8–15.6 V DC)	24 V DC (21.6–31.2 V DC)*1
Dimensions (projections not included; W x H x D)	274 x 114 x 121.5 mm	178.9 x 113.9 x 113.8 mm	180 x 82 x 119.9 mm	IC-M400BB 216 x 79 x 125 mm HM-195B/SW 67.5 x 144.5 x 37 mm	180 x 82 x 119.9 mm	274 x 114 x 121.5 mm	
Weight (approx.)	1.7 kg	1.3 kg	1.2 kg	IC-M400BB 830 g HM-195B/SW 400 g	1.2 kg	1.6 kg	
Current drain	Transmit (High)	5.5 A	5.5 A	5.5 A	5.5 A	5.5 A	3.3 A*1
	Max. audio	5 A typ. (Ext SP, RX hailer ON) 7 A max. (Ext SP, RX hailer ON, HM-229x3)	5 A typ. (Ext SP, RX hailer ON) 1.5 A (Internal SP)	5 A typ. (Ext SP, RX SP ON) 1.5 A (Internal SP)	3.5 A	1.5A	2.0 A*1
Sensitivity	Main (20 dB SINAD)	-10 dBμ emf typ.	-5 dBμ emf typ.	-5 dBμ emf typ.	-5 dBμ emf typ.	-5 dBμ emf typ.	-7 dBμ emf typ.
	DSC (1% BER)	-4 dBμ emf typ.	-4 dBμ emf typ.	-4 dBμ emf typ.	-4 dBμ emf typ.	-4 dBμ emf typ.	-7 dBμ emf typ.
Intermodulation	Main	80 dB typ.	More than 75 dB	More than 68 dB	More than 68 dB	More than 68 dB	More than 75 dB
	DSC (1% BER)	More than 68 dBμ emf	More than 68 dBμ emf	More than 68 dBμ emf	More than 68 dBμ emf	More than 68 dBμ emf	73 dBμ emf
Audio output power (10% dist./4 Ω load)	More than 15W. (External speaker)	15 W (External speaker)	More than 10 W (External speaker)	More than 2 W (HM-195B/SW) More than 10 W (RX Speaker)	More than 2 W	10 W (External speaker) 2 W (Internal speaker)	
RF output power	25 W/1 W	25 W/1 W	25 W/1 W	25 W/1 W	25 W/1 W	25 W/1 W	
NMEA interface	NMEA 2000, NMEA 0183/0183-HS x 2	NMEA 2000/0183	NMEA 0183	NMEA 0183	NMEA 0183	IEC 61162-1	
AIS Receiver	Built-in	Built-in	-	-	-	-	
GPS Receiver	Built-in	External	Built-in	External	Built-in	External	

Measurements made in accordance with EN 301 025-2, -3 for IC-M605EURO, IC-M506EURO, IC-M423G, IC-M400BB, IC-M323G and IC-M323. EN301 925 for GM600. \*1 With PS-310 (#01)

### AIS TRANSPONDER

	MA-500TR	
Frequency range	161.975, 162.025 MHz (default), 156.025–162.025 MHz	
Type of emission	16K0GXW (GMSK)	
Power supply requirement	12.0 V DC (9.6–15.6 V)	
Dimensions (projections not included; W x H x D)	165 x 110 x 123 mm	
Weight (approx.)	1.0 kg	
Current drain	Transmit	1.5 A
	Receive	0.7 A
Sensitivity (20% error rate)	-110 dBm	
Intermodulation rejection	65 dB	
RF output power	2 W	

Measurements made in accordance with IEC62287-1.

### GPS RECEIVER

	MXG-5000S	
Receiving frequency	1575.42 MHz	
Receiving channels	66	
Receiving code	L1, C/A-codes, SPS	
Satellite differential type (SBAS)	WAAS, EGNOS, MSAS, GAGAN	
Time to first fix	Cold start	40 Sec. typ.
	Warm start	4 Sec. typ.
Power supply	4.75–5.25 V DC (Supplied from MA-500TR or MXP-5000)	
Dimensions (projections not included)	78 x 96.5 mm (Diameter x Height)	
Weight (approx.)	460 g	
Usable temperature range	-20°C to +60°C	
Cable length (approx.)	10 m; 32.8 ft	

### MF/HF FIXED MOUNT TRANSCEIVER

	GM800	
Frequency range	Tx: 1.6–27.5000 MHz (ITU marine channels) Rx: 0.5–29.9999 MHz (continuously) DSC: 2.1875, 4.2075, 6.3120, 8.4145, 12.5770, 16.8045 MHz	
Current drain	Tx/Rx	J3E (USB/LSB*), H3E* (AM), J2B* (AFSK), F1B (FSK), A1A* (CW)
	DSC	F1B
Power supply requirement	24 V DC (21.6–31.2 V DC)	
Dimensions (projections not included; W x H x D)	Main unit	367 x 95 x 260 mm
	Controller	274 x 114 x 86 mm
Weight (approx.)	Main unit	8.6 kg
	Controller	760 g
Current drain	Transmit (Max. power)	Less than 20 A (at 1.1 kHz and 1.7 kHz two tones)
	Receive (Max. audio)	Less than 3.0 A
Sensitivity	J3E, A1A (20 dB SINAD)	16 dBμV emf (1.6–3.999 MHz) 11 dBμV emf (4.0–29.999 MHz)
	J2B, F1B (1% error rate)	3 dBμV emf (1.6–2.099 MHz) 0 dBμV emf (2.1–2.75 MHz)
	H3E (20 dB SINAD)	30 dBμV emf (1.6–3.999 MHz)
	DSC (J2B) (1% error rate)	0 dBμV emf
RF output power	125 W (4.0–27.5 MHz) (at AT-141 output power) 85 W (1.6–3.999 MHz) (at AT-141 output power)	

\* Receive only.





# IP ADVANCED RADIO SYSTEM

## Full-Duplex Communication That Works Over a Wireless LAN and IP Network

### System Features

#### Wireless Communication System among Ship Crews

By installing wireless access points, the IP advanced radio system can flexibly deploy along the IP network and communicate throughout in the vessel. The IP100H can access the nearest access point and can roam between access points.

#### Individual, Group or Area Communication

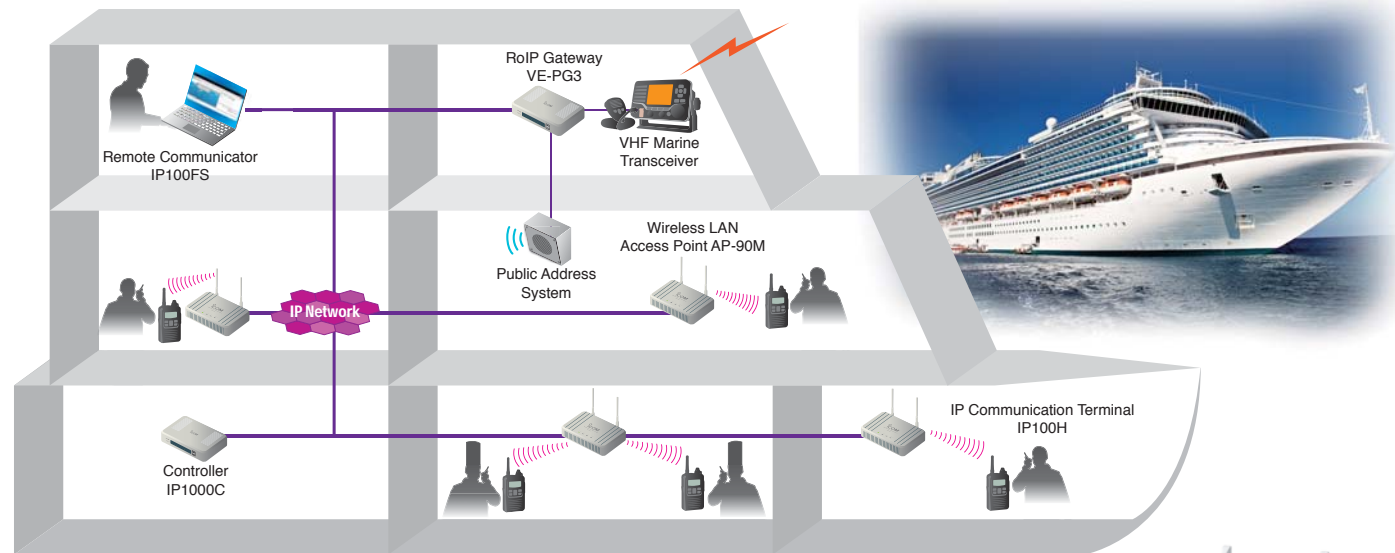
The IP100H/IP100FS can make individual call, group conference call, all call and area call. Crews spread across multiple rooms and cabins can communicate seamlessly. The IP communication terminal can receive Short Data Messages with a vibration alert from a PC installed IP100FS.

#### Hands-free, Full-duplex Communication

With optional earphone-mic or headset HS-102 or HS-85\*, the IP100H user can simultaneously talk and receive like a phone call. Hands-free operation allows your staff to carry out other tasks at the same time.  
\* Either HM-153LS, HM-166LS, HS-102 with OPC-2359 or HS-85 with OPC-2144 is required.

#### Interconnect between VHF Marine Transceiver and Public Address System

With the VE-PG3 RoIP gateway, the IP advanced radio system can interconnect with a VHF marine transceiver, other radio system and a public address system.



#### IP Communication Terminal **IP100H**

- Licence-free communication terminal using IEEE 802.11 a/b/g/n standards
- WPA-PSK or WPA2-PSK encryption
- IPX7 waterproof (1 m depth water for 30 minutes)
- Compact 58 x 95 x 26.4 mm body and 205 g (approximate) lightweight
- Vibration alert function for incoming calls



#### Wireless LAN Access Point **AP-90M**

- IEEE 802.11 a/b/g/n/ac compliant
- PoE (Power over Ethernet) capability
- Optional RS-AP3, access point management software



#### Controller **IP1000C**

- The IP1000C controls all terminal configurations and voice traffic
- Capable of controlling up to 100 or 20\* terminals (including IP100FS)
- \*Depending on version.



#### RoIP Gateway **VE-PG3**

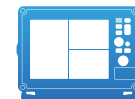
- Interconnects IP advanced radio system and other radio system\*
- Public address system connection
- Telephone interconnection with IP phone and PSTN lines
- \*Interconnection with VHF marine radio may be prohibited in some countries. Please confirm legal requirements in your country before installation.



#### Remote Communicator Software **IP100FS**

(Supplied with USB flash drive for use as a USB hardware key)

- The IP100FS can communicate with IP communication terminals from a PC
- The IP100FS can obtain location information of each IP100H based on using access points
- Can be installed to a Windows® based tablet PC as well as laptop PC



# MarineCommander™

## Command – Your Way, Communications and Navigation Setup

### System Overview

The MarineCommander™ is Icom's marine navigation system, which integrates various marine modules such as a fish finder, marine radar, AIS and VHF transceiver into the multi-function display (MFD).



### Affordable Dual Display Connection Up to Four Displays in a System

The MarineCommander allows you to connect two MFDs simultaneously. All connected modules including chart data, fish finder and marine radar can be shared with two MFDs and provide separate operation. When connecting two MarineCommanders via a data cable, up to 4 displays can be used and C-MAP™ chart data can be shared in the system.



### C-MAP™ MAX Compatible

The MarineCommander is compatible with the C-MAP™ MAX chart by C-MAP Italy S.r.l. in an SD card format\*. The MarineCommander provides quick and fast responding rendering performance. The C-MAP™ MAX chart provides guardian alarm, route-check, perspective view and Port database for your safe and easy navigation.

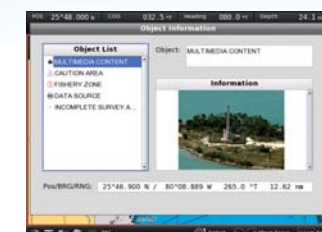
\* Chart data is not supplied from Icom.



Perspective view (bird view)



Chart plotter



Object information of the C-MAP™ chart data base



Nav-course monitor (upper right) & Nav-waypoint (bottom right)

### Daylight Viewable Display

The 12.1 inch size MFD provides 800 x 600 pixels resolution. The 900 cd/m<sup>2</sup> high brightness, colour LCD with anti-reflecting surface coating glass offers bright, vivid indication in detail even in under direct sunlight.

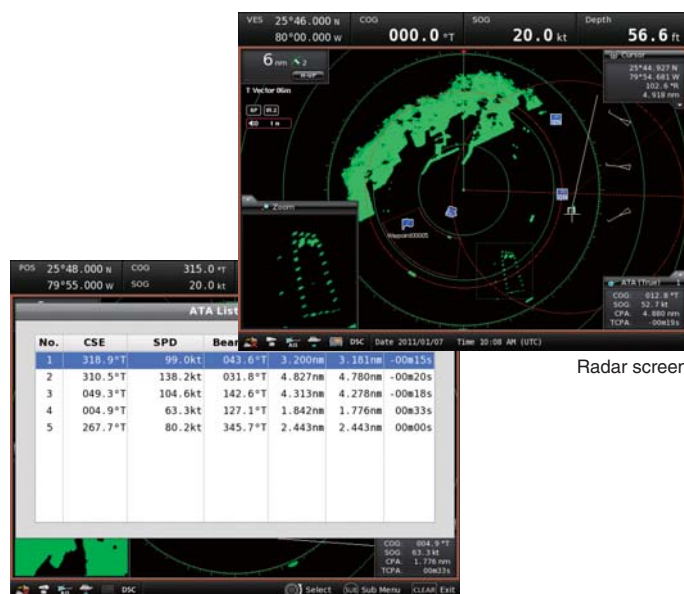






## Marine Radar

The MXR-5000R/T marine radar provides clear target discrimination. Waypoint and AIS target can be overlaid on the radar screen. The marine radar helps collision avoidance and increases your safety at sea. The radar images can be overlaid on the plotter screen in the same scale and help you to detect dangerous objects.



ATA list

### Simplified ATA (Automatic Tracking Aid)

The simplified ATA function allows you to plot up to 10 targets and the radar continues to track the targets automatically. The ATA targets can be overlaid on the plotter screen.

### MARINE RADAR MXR-5000T

- 4 kW, 4 feet (120 cm) open array scanner
- Up to 48NM observation • 48 rpm high rotation speed



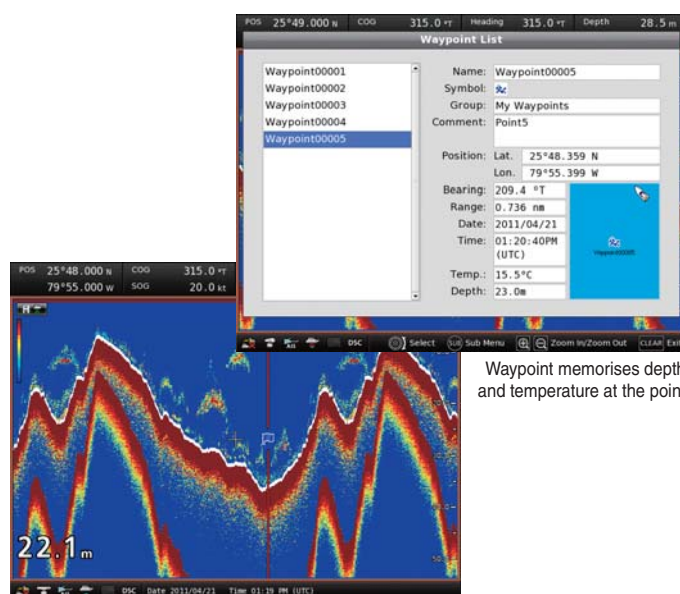
### MARINE RADAR MXR-5000R

- 4 kW, 2 feet (60 cm) radome scanner
- Up to 36NM observation • 48 rpm high rotation speed



## Fish Finder

When a fish finder module is connected, the MarineCommander system can have a dual frequency sounder function. Using the 50 kHz/200 kHz dual frequency mode, the MarineCommander enhances the separation and helps in fish detection.



Sounder screen

### Additional data for waypoints

When used with the fish finder module, the MarineCommander memorizes the waypoint information with depth and temperature data.

### FISH FINDER MXF-5000



#### EX-3193

- 600 W transom transducer
- Depth, speed and temperature in one housing
- 50 kHz and 200 kHz dual frequency



or

#### EX-3194

- 600 W thru-hull transducer
- Depth, speed and temperature in one housing
- 50 kHz and 200 kHz dual frequency



or

#### EX-3195

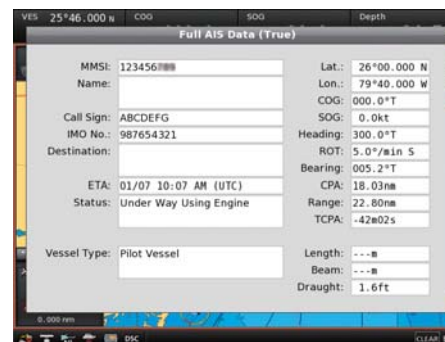
- 1 kW thru-hull transducer
- Depth and fast-response water-temperature sensor
- 50 kHz and 200 kHz dual frequency



## AIS (Automatic Identification System)

AIS (Automatic Identification System) receives real-time vessel traffic information broadcasted by other AIS equipped vessels. Using with either the IC-M605EURO or MA-500TR, the AIS data can be overlaid on the plotter and radar screen.

\*The IC-M506EURO AIS data is NOT compatible with the MarineCommander.



Full AIS data



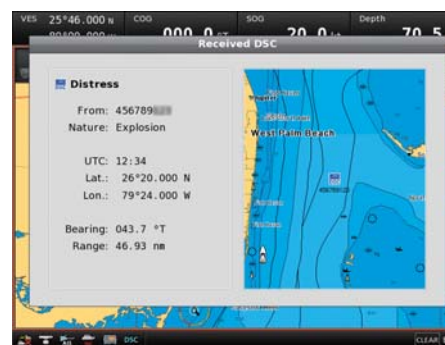
AIS TRANSPONDER  
MA-500TR



## VHF Transceiver

The MarineCommander has the capability to be connected to compatible Icom VHF transceivers.\* Various types of DSC calls, including individual, group, all ship, position and polling request\*, can be initiated from the MarineCommander. Received DSC messages and position information can be shown on the plotter display.

\*Type of transmitting DSC calls are depending on the connected VHF transceiver's capability.



Received DSC message



VHF MARINE TRANSCEIVER  
IC-M605EURO



VHF MARINE TRANSCEIVER  
IC-M506EURO



VHF MARINE TRANSCEIVER  
IC-M423G



VHF MARINE TRANSCEIVER  
IC-M400BB



VHF MARINE TRANSCEIVERS  
IC-M323G/M323



## GPS Receiver

The MXG-5000S is a 66 channel GPS receiver with WAAS, EGNOS MSAS and GAGAN differential corrections. It offers accurate position information and features IPX6 high-pressure water jet resistance.



GPS RECEIVER  
MXG-5000S



## Engine Monitoring

When connected to an NMEA 2000™ engine interface, the MarineCommander shows current data on a virtual engine meter.



Graphic screens



## USB Flash Drive Connection

The MFD has a USB slot to connect with a USB flash drive. Waypoint, track and route information, and memo data can be backed up to a USB flash and imported to other MarineCommanders or a PC.



SD card slot (above) and USB slot

## Other Features

- An analogue RGB output connector (D-SUB 15-pin) for an external display connection
- Four analogue video input connectors (NTSC or PAL format)
- Multiple language display (English/French/Spanish)
- External NMEA2000 Connection (Engine, Fuel, Engine Temperature, Wind, GPS, Compass, STW)
- Simulator mode can demonstrate key system functions using only the MXP-5000 and MXD-5000.
- Memo function allows you to store a comment with picture data\* and position information.
- \* To show picture data, the picture data must be stored in the connected USB flash drive.

This product includes software (part of tcp\_wrappers) developed by the University of California, Berkeley. This product includes software developed by the University of California, Berkeley and its contributors.



# Specifications

## MULTI-FUNCTION DISPLAY

	MXD-5000
Multi-function display	12.1 inch TFT
Screen size	246 × 184.5 mm
Screen resolution	SVGA 800 × 600 dots
Power supply	30 V DC (Supplied from MXP-5000)
Dimensions (W × H × D) (Projections not included)	386 × 274 × 69.2 mm (without bracket) 404 × 299 × 102 mm (with bracket)
Weight (approx.)	3.3 kg (with bracket) 3.8 kg (without bracket)
Usable temperature range	-20°C to +60°C
Waterproofing	IPX7
Cable length	5 m
Optional extension cable	EX-3187 (5 m)

## MAIN PROCESSOR UNIT

	MXP-5000
Power supply	12/24 V DC (10.8 to 31.2 V DC)
Current drain (at 12 V DC) (at Maximum brightness)	Less than 4.7 A (One MXD-5000) Less than 7.7 A (Two MXD-5000s)
Dimensions (W × H × D) (Projections not included)	360 × 88 × 228.8 mm
Weight (approx.)	4.25 kg
Usable temperature range	-20°C to +60°C
Waterproofing	IPX4

## FISH FINDER

	MXF-5000
Power supply	12/24 V DC (10.8 to 31.2 V DC)
Current drain (at 12 V DC)	Less than 0.6 A (Water depth range: 40 m, output power 600 W) Less than 1.0 A (Water depth range: 40 m, output power 1 kW)
Output power	600 W/1 kW
Transmission frequency	50 kHz ± 1 kHz 200 kHz ± 1 kHz
Dimensions (W × H × D) (Projections not included)	250 × 67 × 200 mm
Weight (approx.)	2.18 kg
Usable temperature range	-20°C to +60°C
Waterproofing	IPX4
Optional data cable	OPC-1895 (20 m)

## TRANSDUCERS

	EX-3193	EX-3194	EX-3195
Type	600 W transom type, built-in boat speed and temperature sensors	600 W thru-hull type, built-in boat speed and temperature sensors	1 kW thru-hull type, built-in temperature sensors
Output power	600 W	600 W	1 kW
Operating frequency	50 kHz, 200 kHz	50 kHz, 200 kHz	50 kHz, 200 kHz
Beamwidth	50 kHz: 45°, 200 kHz: 11°	50 kHz: 45°, 200 kHz: 11°	50 kHz: 15° × 21°, 200 kHz: 3° × 5°
Vessel speed sensor	18,000 p/nm	19,000 p/nm (with fairing) 21,500 p/nm (without fairing)	-
Speed range	1 kt-44 kt	1 kt-44 kt	-
Weight (approx.)	0.5 kg	2.5 kg	3.6 kg
Optional transducer ext. cable	OPC-1929 (6 m)	OPC-1929 (6 m)	OPC-1929 (6 m)

All stated specifications are subject to change without notice or obligation.

Read all instructions enclosed with the transceiver carefully and completely before using the transceiver.

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URL: <http://www.icom.co.nz>

## RADAR UNITS

	MXR-5000R	MXR-5000T
Power supply	12/24 V DC (10.8 to 31.2 V DC)	12/24 V DC (10.8 to 31.2 V DC)
Current drain (at 12 V DC)	Less than 5.0 A	Less than 5.5 A
Dimensions (W × H × D) (Projections not included)	250 × 67 × 200 mm	250 × 67 × 200 mm
Weight (approx.)	2.1 kg	2.1 kg
Usable temperature range	-20°C to +60°C	-20°C to +60°C
Waterproofing	IPX4	IPX4
Optional data cable	OPC-1895 (20 m)	OPC-1895 (20 m)

## SCANNER UNITS

	MXR-5000R Radome scanner	MXR-5000T Open array scanner
Type	2 ft (60 cm) radome	4 ft (120 cm) open array
Peak output power	4 kW	4 kW
Maximum range	36 NM	48 NM
Rotation speed	24 rpm, 36 rpm, 48 rpm	24 rpm, 36 rpm, 48 rpm
Beam width	Horizontal Vertical	Horizontal Vertical
Side lobe	4°typ. 22°typ.	2°typ. 25°typ.
Polarization	-18 dB	-24 dB
Transmission frequency	Horizontal	Horizontal
Pulse width	9410 MHz ±30 MHz P0N	9410 MHz ±30 MHz P0N
Dimensions	80 ns/2880 Hz, 80 ns/2160 Hz, 250 ns/2160 Hz, 350 ns/2160 Hz, 900 ns/720 Hz	80 ns/2880 Hz, 80 ns/2160 Hz, 250 ns/2160 Hz, 350 ns/2160 Hz, 900 ns/720 Hz
Weight (approx.)	607 (Diameter) × 243 (H) mm	1205 (Diameter of rotation) × 381 (H) mm
Usable temperature range	8 kg (without cable)	17 kg (without cable)
Relative humidity	-25°C to +70°C	-25°C to +70°C
Waterproofing	Less than 95% at 40°C	Less than 95% at 40°C
Supplied system cable	IPX6	IPX6
Optional radar system cables	OPC-2341 (15 m) OPC-2339 (20 m) OPC-2340 (30 m)	OPC-2342 (20 m) OPC-2340 (30 m)