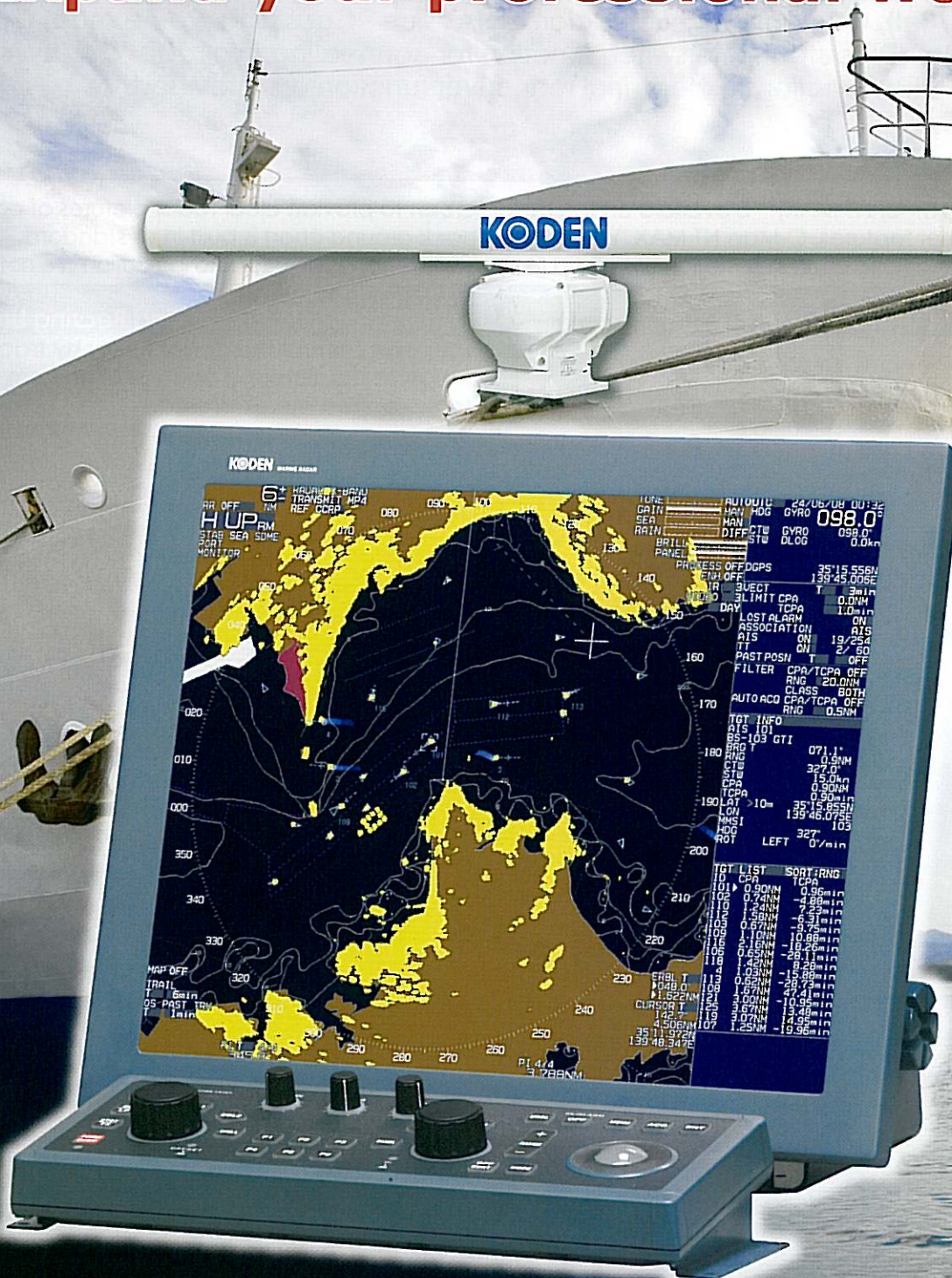


# 19-inch Color LCD Marine Radar **MDC-2900 Series**

# KODEN

**Expand your professional world**





# MDC-2900 Series

MDC-2960 / MDC-2960BB : 6 kW 4 feet / 6 feet Open  
 MDC-2910 / MDC-2910BB : 12 kW 4 feet / 6 feet Open  
 MDC-2920 / MDC-2920BB : 25 kW 4 feet / 6 feet Open

MDC-2900 Series provides outstanding performance and clear image with 19-inch high resolution SXGA display plus anti-reflection coating. MDC-2900BB Black Box radars connect to any SXGA type display(owner supplied).

These radars feature sophisticated "Strong Signal Processing" for real-time presentation and superior target discrimination. This special signal processing provides a steady image even in case of unstable targets.

Other superior features are Enhance (ENH), Interference Rejection (IR), Range Rings (RR), VRM, EBL, Trail (True/Rel), Off centering, Echo alarm, NAV line, Coast line, Route map, Guard zone, Monitor output, VDR output. Interswitch function for connecting two radar displays without an extra device. ARPA functions except Trial maneuver function are provided.

## Map Overlay

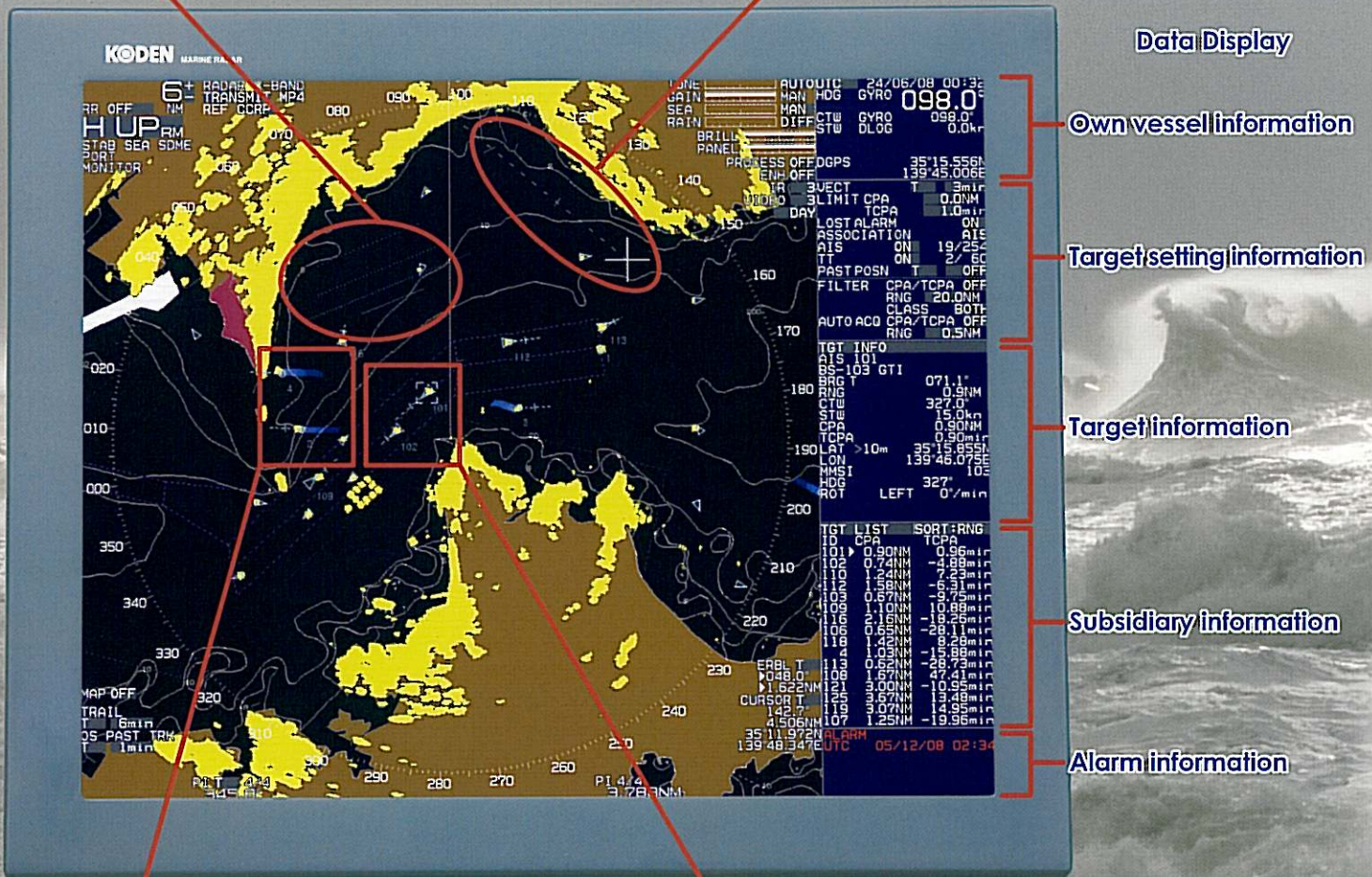
C-Map chart (NT+ or NT MAX)\*\* is overlaid on the radar screen to provide clear radar pictures of coastlines, buoys, and other features. C-Map NT MAX "World Wide" back ground chart is built-in as standard.  
 \*\*Owner supplied. Basic chart information only. Extra features of C-Map such as photo indication are not available.

## New Parallel Index Lines (PI)

Each parallel lines can be used independently, User can move each line and adjust the length freely.

## New Electronic Range and Bearing Line (ERBL)

User can control the cursor freely by trackball and measure the distance and direction from the cursor to the dotted line extended.



## Data Display

Own vessel information

Target setting information

Target information

Subsidiary information

Alarm information

## ATA

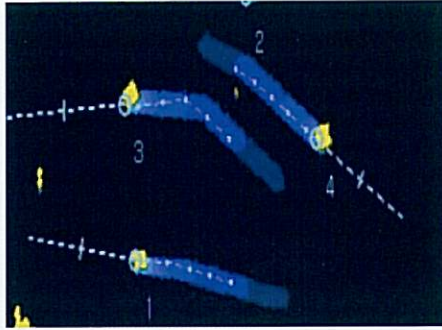
Built-in ATA\* (Automatic Tracking Aid) tracks up to 60 targets. Selectable auto capture or manual capture. \*ATA is called TT (Target Tracking) in the new IMO regulation.

## AIS

Built-in AIS interface for displaying up to 254 targets.



### New True Trail Function

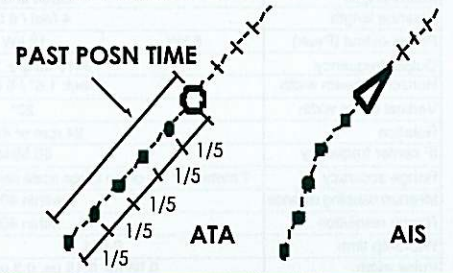


Clearly identifies moving targets from stationary targets. The display shows exact movement of other vessels like drawing tails. Even when your range is changed, a new trail appears past drawing tails. 3 types of shape is available.



### PAST POSN (Past position)

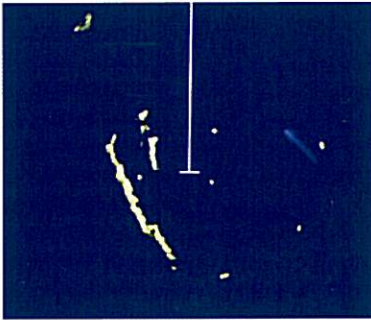
Showing past position with 5 dots for the ATA targets and AIS targets.



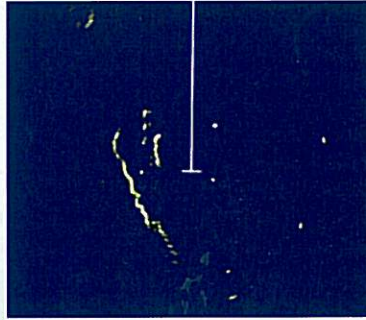
### New CFAR Function

This function is Semi-automatic clutter suppression. In comparison with conventional SEA + RAIN, the targets will not shrink.

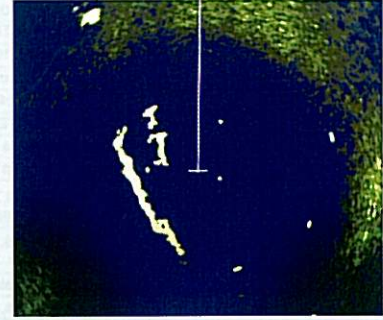
CFAR



SEA + RAIN



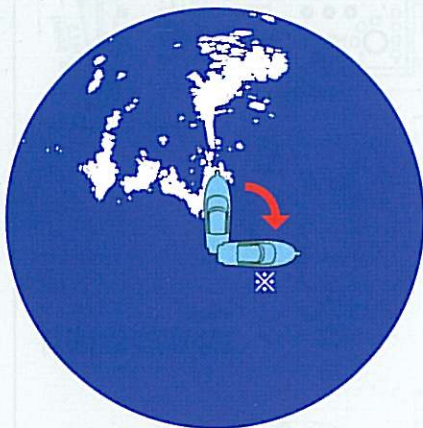
SEA



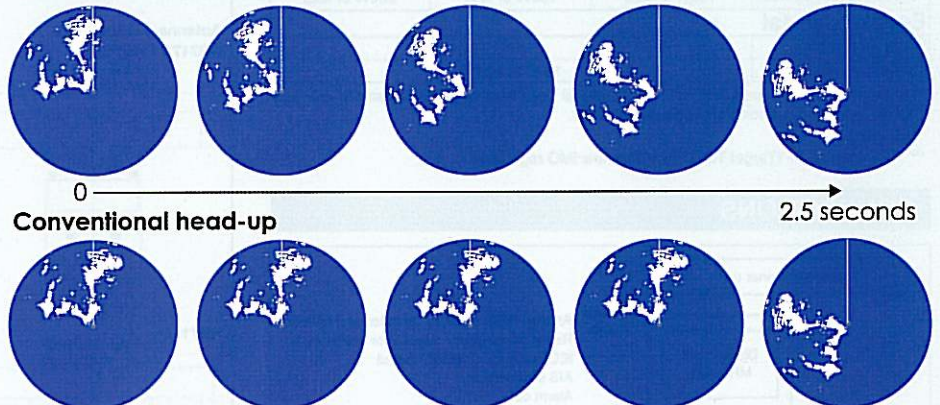
### Real-time Smooth Head-Up Presentation

Display the exact direction and position of the target in real time.

When own vessel changes heading, the radar image will rotate smoothly in real time, unlike conventional rotation where the image redraws with each radar sweep.



Real time smooth head-up



※ In case own vessel changes heading 90 degrees to the right, during one rotation of antenna in 2.5 seconds (24 rpm)

### Easy Operation

Designed for easy access to all system functions with well-arranged keyboard.

Six programmable function keys let user customize set-up of various functions.

GAIN, STC, FTC, EBL, and VRM are adjustable with one touch by using control knobs.

Trackball control with two-color LED lamp for quick-operation day or night.



### Two-color LED lamp for Night





## SPECIFICATIONS

### Antenna-Scanner unit

| Model                      | MDC-2960 / BB  | MDC-2910 / BB | MDC-2920 / BB |
|----------------------------|--|---------------|---------------|
| Antenna type               | Open antenna   |               |               |
| Antenna length             | 4 feet / 6 feet  |               |               |
| Power output (Peak)        | 6 kW   | 12 kW         | 25 kW         |
| Output frequency           | 9410 MHz $\pm$ 30MHz   |               |               |
| Horizontal beam width      | 4 feet: 1.8° / 6 feet: 1.2°  |               |               |
| Vertical beam width        | 22°  |               |               |
| Rotation                   | 24 rpm or 48 rpm   |               |               |
| IF center frequency        | 60 MHz   |               |               |
| Range accuracy             | 7 meters or 1% of the range scale selected, whichever is the greater |               |               |
| Minimum detecting distance | within 40 m  |               |               |
| Range resolution           | within 40 m  |               |               |
| Warm-up time               | 2 min  | 3 min         |               |
| Pulse width                | 0.08 us, 0.15 us, 0.3 us, 0.6 us, 1.2 us                             |               |               |

### Environmental

|                       |                |
|-----------------------|----------------|
| Water protection      | IPX6           |
| Operating temperature | -25°C to +55°C |

### Display unit / Processor unit for BB type

| Model                         | MDC-2960 / BB   | MDC-2910 / BB  | MDC-2920 / BB  |
|-------------------------------|---|----------------|----------------|
| Basic range                   | 0.125 to 72 NM  | 0.125 to 72 NM | 0.125 to 96 NM |
| Display unit                  | MRD-105**   |                |                |
| Display size / type           | 19 inch color TFT LCD**   |                |                |
| Processor unit (BB type only) | MRM-105   |                |                |
| Effective diameter            | 278 mm  |                |                |
| Display resolution            | 1280 x 1024 pixels  |                |                |
| Off-centering                 | Max. 72%  |                |                |
| Echo area                     | 2 types (Full screen, Inside of effective diameter)   |                |                |
| Presentation modes            | Head-up, North-up*, Course-up*  |                |                |
| Range Rings interval          | 0.0625(0.125,0.25), 0.125(0.5,0.75), 0.25(1.5), 0.5(3), 1(6), 2(12), 4(24), 8(48), 12(72), 16(96) ( ): Range scales   |                |                |
| Range scales                  | 0.125,0.25,0.5,0.75,1.5,3,6,12,24,48,(72),(96) nm<br>72nm: 6kW 12kW only. 96nm: 25kW only.  |                |                |
| Video level                   | 8 levels  |                |                |
| Distance unit                 | NM, km, SM  |                |                |
| Functions                     | C-Map chart, CFAR (Clutter rejection), Interference rejection, Enhance (Target expansion), Process (Averaging), VRM, EBL, Parallel index, ERBL, Cursor position (Lat/Lon), Bearing (true/relative), Trail† (true/relative), Own ship past track, MAP (Event mark, etc), Analog RGB output |                |                |
| Input / Output data format    | IEC61162-1/-2   |                |                |
| Input data sentence           | BWC, DBT, DPT, DTM, GGA, GLC, GLL, GNS, HDG, HDT, HDM, MTW, RMA, RMB, RMC, RTE, THS, VBV, VDR, VHW, VTG, WPL, XTE, ZDA  |                |                |
| Output data sentence          | RSD, OSD, TLB, TTD, TTM   |                |                |
| AIS interface                 | 254 Targets*  |                |                |
| ATA***                        | Auto/Manual 60 Targets*   |                |                |
| Power supply                  | 21.6 to 41.6 VDC  |                |                |
| Power consumption(at 24VDC)   | 130W or less  | 150W or less   | 200W or less   |

### Environmental

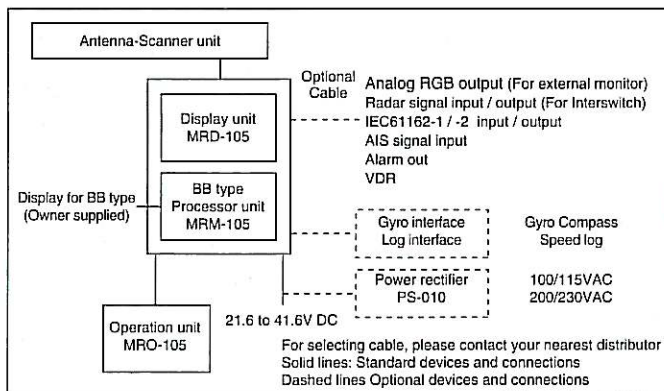
|                       |                |
|-----------------------|----------------|
| Water protection      | -              |
| Operating temperature | -15°C to +55°C |

\* Requires heading, speed, and / or position signal input from external equipment including GPS Compass depending on application of user.

\*\* Deselect BB type

\*\*\* ATA is called TT (Target Tracking) in the new IMO regulation.

## CONNECTIONS



## EQUIPMENT LIST

### Standard Equipment

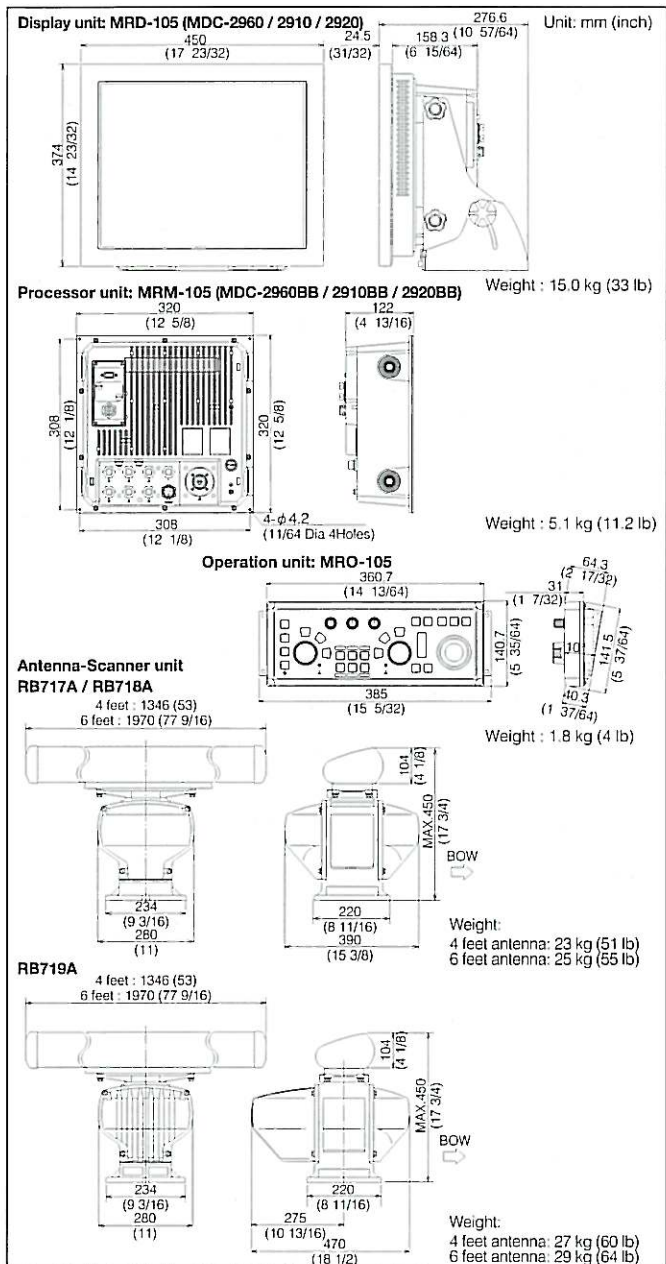
|  |                 |                                   |               |
|--|-----------------|-----------------------------------|---------------|
| Scanner unit   | RB717A          | 6 kW                              | MDC-2960 / BB |
|  | RB718A          | 12 kW                             | MDC-2910 / BB |
|  | RB719A          | 25 kW                             | MDC-2920 / BB |
| Antenna unit   | RW701A-04       | 4 feet                            |               |
|  | RW701A-06       | 6 feet                            |               |
| Display unit   | MRD-105**       |                                   |               |
| Processor unit (BB type only)                                      | MRM-105         |                                   |               |
| Operation unit   | MRO-105         | With 2 m connecting cable         |               |
| Connecting cable   | 242J159098B-15M | 15 m with connectors on both ends |               |
| DC power cable   | CW-259-2M       | 2m                                |               |
| Operation manual, Installation manual, Installation material, Fuse |                 |                                   |               |

### Option

Gyro interface unit, Log interface unit, Power rectifier, AC power cable, Connecting cables

\*\* Deselect BB type

## DIMENSIONS AND WEIGHT



• Design and specifications are subject to change without notice.

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To ensure proper and safe use of the equipment, please carefully read and follow the instructions in the Operation Manual.

For details, please contact: