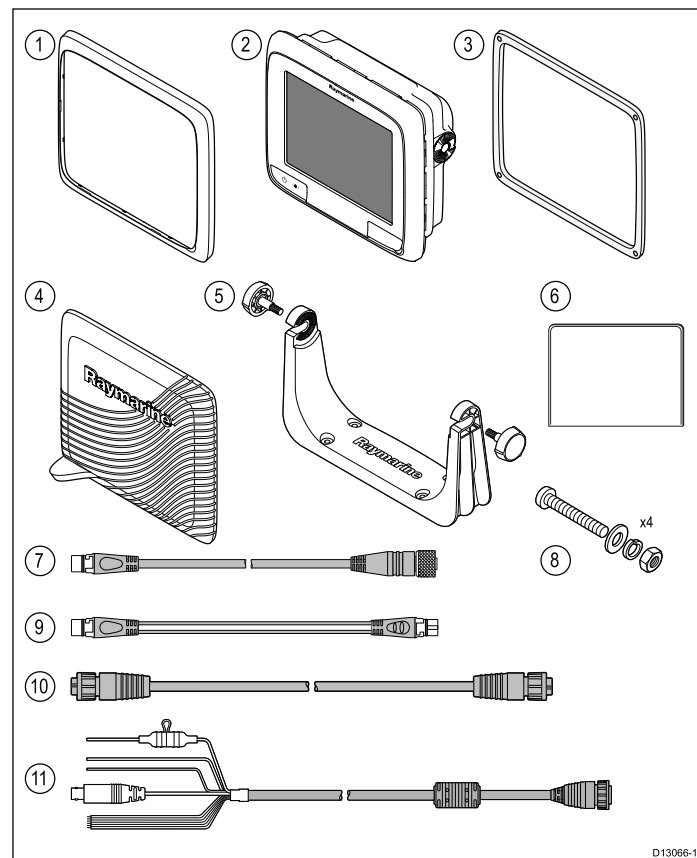


## a9x and a12x Supplementary information

### a9x and a12x parts supplied

The following items are supplied with your a9x and a12x variant MFD.



1	Front bezel
2	Multifunction display (MFD)
3	Mounting gasket
4	Sun cover
5	Trunion bracket kit
6	Documentation pack
7	SeaTalk <sup>ng</sup> to DeviceNet adaptor cable
8	4x Nuts, bolts, spring washers and washers (can be used for either surface or bracket mounting.)
9	3 m (9.8 ft.) SeaTalk <sup>ng</sup> spur cable
10	2 m (6.6 ft.) RayNet cable
11	1.5 m (4.9 ft.) Power and data cable (Power/NMEA/Video)

### a Series Display specification

	a6x	a7x	a9x	a12x
Size	5.7 in	7 in	9.0 in	12.1 in
Type	TFT backlit LED	TFT backlit LED	TFT backlit LED	TFT backlit LED

	a6x	a7x	a9x	a12x
Color depth	24-bit	24-bit	24-bit	24-bit
Resolution	640 x 480 VGA	800 x 480 WVGA	800 x 480 WVGA	1280 x 800 WXGA
Aspect	4:3	16:9	16:9	16:9
Maximum allowable wrongly illuminated pixels	5	6	6	6

### Environmental specification

Environmental specifications below apply to all display variants

Operating temperature	-25 °C to +55 °C (-13 °F to 131 °F)
Storage temperature	-30 °C to +70 °C (-22 °F to 158 °F)
Relative humidity	Maximum 75%
Waterproof rating	• IPX6 and IPX7

### a9x Power specification

Nominal supply voltage	12 V / 24 V dc
Operating voltage range	10.8 V dc to 31.2 V dc
In-line Fuse	• 7 A (Standard 20 mm glass fuse)
Power consumption	Full brightness: <ul style="list-style-type: none"> <li>• a95 — 14.5 W Max</li> <li>• a97 — 18.1 W Max</li> <li>• a98 — 16.5 W Max</li> </ul> PowerSave mode: <ul style="list-style-type: none"> <li>• a95 — 4.5 W Max</li> <li>• a97 — 8.1 W Max</li> <li>• a98 — 6.5 W Max</li> </ul>
LEN (Refer to Seatalk <sup>ng</sup> reference manual for further information).	1

**Note:** Power consumption figures represent a loaded system and for sonar and DownVision variants include an active transducer.

### a12x Power specification

Nominal supply voltage	12 V / 24 V dc
Operating voltage range	10.8 V dc to 31.2 V dc
In-line Fuse	• 7 A (Standard 20 mm glass fuse)

<b>Power consumption</b>	Full brightness: <ul style="list-style-type: none"> <li>• <b>a125</b> — 26 W Max</li> <li>• <b>a127</b> — 29.6 W Max</li> <li>• <b>a128</b> — 28 W Max</li> </ul> PowerSave mode: <ul style="list-style-type: none"> <li>• <b>a125</b> — 5.2 W Max</li> <li>• <b>a127</b> — 8.8 W Max</li> <li>• <b>a128</b> — 7.2 W Max</li> </ul>
<b>LEN</b> (Refer to Seataalk <sup>ng</sup> reference manual for further information).	1

**Note:** Power consumption figures represent a loaded system and for sonar and DownVision variants include an active transducer.

## a9x and a12x Data connections

### Wired connections

<b>NMEA 0183</b>	<ul style="list-style-type: none"> <li>• NMEA port 1: Input and output, 4800 / 38400 baud rates</li> <li>• NMEA port 2: Input only, 4800 / 38400 baud rates</li> </ul> <div> <b>Note:</b> a6x and a7x variant MFDs do not include NMEA 0183 connections </div>
<b>Network</b> (SeaTalk <sup>hs</sup> )	<ul style="list-style-type: none"> <li>• a6x and a7x = 1 x RayNet type SeaTalk<sup>hs</sup> port. 10/100 Mbits/s</li> <li>• a9x and a12x = 2 x RayNet type SeaTalk<sup>hs</sup> port. 10/100 Mbits/s</li> </ul>
<b>SeaTalk<sup>ng</sup></b>	1 x SeaTalk <sup>ng</sup> connection
<b>GA150</b>	1 x TNC type external GPS / GLONASS antenna connection
<b>Video input</b>	1 x BNC type video input connection

### Wireless connections

<b>Wi-Fi</b>	802.11 b / g
<b>Bluetooth</b>	Bluetooth 2.1 + EDR power class 1.5 (supported profile: AVRCP 1.0)

## Internal GNSS (GPS / GLONASS) receiver specification

<b>Channels</b>	72
<b>Cold start</b>	<2 minutes
<b>Receiver IC Sensitivity</b>	−167 dBm (Tracking) / −148 dBm (Acquisition)
<b>GNSS compatibility</b>	<ul style="list-style-type: none"> <li>• GPS</li> <li>• GLONASS</li> <li>• * Beidou</li> </ul>
<b>SBAS compatibility</b>	<ul style="list-style-type: none"> <li>• WAAS</li> <li>• EGNOS</li> <li>• MSAS</li> </ul>
<b>Special features</b>	Active Jamming and Interference Reduction

<b>Operating frequency</b>	<ul style="list-style-type: none"> <li>• GPS L1 C/A</li> <li>• GLONASS L10F</li> <li>• Beidou B1</li> </ul>
<b>Signal Acquisition</b>	Automatic
<b>Almanac Update</b>	Automatic
<b>Geodetic Datum</b>	WGS-84 (alternatives available through Raymarine MFD)
<b>Update Rate</b>	10 times per second (Concurrent GNSS)
<b>Antenna</b>	<ul style="list-style-type: none"> <li>• <b>Internal</b> — Ceramic chip mounted near top of unit</li> <li>• <b>External</b> — GA150 external antenna may be used</li> </ul>
<b>Position Accuracy</b>	<ul style="list-style-type: none"> <li>• Without SBAS: &lt;= 15 metres 95% of the time</li> <li>• With SBAS: &lt;= 5 metres 95% of the time</li> </ul>

**Note:** \* Supported but not currently available. A software update will be required to add support for this GNSS when it becomes available. A GA150 must be connected to receive Beidou. Please check with your Raymarine dealer for further details.

## Internal sonar specification

The internal sonar specifications only apply to sonar variant multifunction display variants.

<b>Operating frequencies</b>	50 / 83 / 200 KHz
<b>Transmit power</b>	Up to 600 W RMS, depending on transducer
<b>Depth range</b>	Up to 3000 ft, depending on transducer

## Sonar / DownVision specification

<b>Channels</b>	2 x CHIRP (1 x sonar and 1 x DownVision)
<b>Beam coverage</b>	<ul style="list-style-type: none"> <li>• <b>Sonar</b> — conical beam.</li> <li>• <b>DownVision</b> — Wide (port / starboard) and thin (fore / aft) fan beam.</li> </ul>
<b>Depth</b>	Typical depth performance of 189 m (600 ft). Applies to both Sonar and DownVision channels.