

## RADAR REFLECTORS

### Echomax EM230

Lightweight 2.5mm robust Polyethylene. QinetiQ (DERA) tests proved the Echomax EM230 to give an astonishing 24sq.m peak at + or - 3 degrees and 10 sq.m peak at + or - 15 degrees.

The EM 230 has now been successfully tested by QinetiQ to ISO 8729, Ship's Wheel Mark, SOLAS, RORC, ORC and meets Sections A.1/1.33 and A.1/4.39 of Annex A1 of Marine Directive 98/95/EC. Claimed performance figures of the above radar reflectors may vary slightly from product to product due to circumstances beyond our control.

Dimensions:

- Length - 610mm
- Overall diameter - 248mm
- Weight - 2.4 kg
- Distance between centres - 560mm
- Fixing holes - 10mm
- EM230 are available in white (bright orange or black to order).

Part No.	Description
175873	EM230
175869	Mounting Brackets - Mast
175870	Mounting bracket -Deck

### Echomax 230BR

Restyled case with fixing centres of 545mm, being direct replacement for the Firdell Blipper 210-7. Utilising existing bracket installation on mast. For Technical specification see Echomax 230 (above).

Part No.	Description
186296	

### Echomax EM230 Midi

The smallest of the Echomax Polyethylene models. Compact and highly efficient. QinetiQ (DERA) tests proved the Echomax EM230 Midi to give a peak response of 20 sq.m at + or -3 degrees with four 90 Degree azimuth sectors, responding at 10 m<sup>2</sup>. Response of 75 % at 2.5 m<sup>2</sup> and 100% response at 1.25 m<sup>2</sup>. An ideal reflector for sailing yachts, RIBs, motor cruisers and angling boats. Meets RORC/ORC requirement of 10m<sup>2</sup> peak, but fails ISO 8729 by 2 degrees per sector.

EM230 Midi is available in white (bright orange or black to order).

Claimed performance figures of the above radar reflectors may vary slightly from product to product due to circumstances beyond our control.

Dimensions:

- Length - 450mm
- Overall diameter - 245mm
- Distance between centres - 400mm
- Fixing holes - 10mm
- Weight - 1.7 kg

Part No.	Description
175880	EM230 Midi
175869	Mounting brackets - Mast
175870	Mounting bracket -Deck

### Echomax EM230 Midi Base Mount

Available in white (orange or black to order) in three versions

With high strength magnetic base for attachment to airside vehicles (to order).

Following exhaustive sea trials at QinetiQ - Fraser Range the Midi was chosen by the RNLI as best reflector for their RIBs giving 100% paints at 3.8 miles and 80% paints at 5 miles plus (sea state 'fair') although mounted only 2m above sea level. (ISO/RORC recommend a minimum of 4m above sea level.) The Echomax 230 Midi exceeds the RORC - ORC requirement of 10m<sup>2</sup>.

Claimed performance figures of the above radar reflectors may vary slightly from product to product due to circumstances beyond our control.

Dimensions:

- Length - 432mm (w/navigation light - 540mm)
- Overall diameter - 245mm
- Performance: +/- 3 degrees - 20m<sup>2</sup> peak
- 100% @ 1.25m<sup>2</sup> - 75% @ 2.5m<sup>2</sup> - 58% @ 5m<sup>2</sup> - 20% @ 10m<sup>2</sup>
- Fixings - 4 x 10mm bolts at 80mm centres
- Weight - 2.3kg (w/o light)

Part No.	Description
175881	EM230 Midi Base mount
175874	EM230 Midi Base mount with light
175869	Mounting bracket - Mast
175870	Mounting bracket -Deck (shown)

### EM180

New compact Echomax based on the proven John Firth stacked symmetrical array with an amazing 8m<sup>2</sup> peak response. The EM180 uses the largest possible array with the smallest possible robust polyethylene case - reducing the windage and weight.

- Overall height- 470mm
- Overall diameter - 197mm
- Fixing centres - 410mm
- Fixings -2x8mm eyes
- Weight - 1.4kg

Part No.	Description
185866	EM180
185920	Mounting bracket - Mast
185921	Mounting bracket - Deck



# ECHOMAX



(Brackets not included)



# ECHOMAX

**NEW**



(Brackets not included)



### Visiball

The highly successful yachting radar reflector. Designed to be fitted to the masthead for optimum performance and to avoid being obscured by other items. The Visiball is an array of 2 multi dielectric lenses mounted back to back. The incoming radar beam is bent by the refracting surface, bounces off the reflecting surface and is bent again by the refracting surface to return parallel to its source.

- Wt - 2124g
- L - 260mm
- W - 140mm
- H - 145mm
- Footprint - 80x80mm

Part No.	176365
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### New Echomax Active-X

Echomax Active-X is an active radar target enhancer that when receiving a signal from a transmitting radar, amplifies and returns a stronger signal. This increases the likelihood of detection reducing the risk of collision and helps to alert on coming vessels of your position.

Specifications:

- Reception frequency: X band 9.32 – 9.5GHz
- Size: 430mm x 45mm
- Voltage: 12 - 30 volts reverse polarity - surge protected
- Stand by current consumption: 3mA
- Transmitting: 280mA
- Base Fitting: female 1 inch – 14NF
- Weight: 310 grams (excl. cable)
- Operating Temp:-40 to 50C
- Cable Length: 25m3 core 3A 300Vdc
- Stand by mode: 2.5 secs / 14 secs
- External in line fuse: 0.5A
- External warning device facility: 10A at 30 volts

Part No.	Description
187031	Active-X
56199	Mast Mounting Bracket

### Echomax EM305

The largest of the Echomax range made from 3mm glass fibre is the choice of large workboats and commercial fishing boats. It is suitable for yachts over 20 metres. QinetiQ (DERA) testing proved the Echomax 305 to give an incredible response of 12 separate 50 sq.m peaks at + or - 3 degrees at 30 degree intervals with an astonishing peak of 63m2. Available in base or pedestal mount. During recent tests carried out by the MCA the latest Echomax 305 peaked at over 70m2. The EM 305 has now been successfully tested by QinetiQ to ISO 8729, Ship's Wheel Mark, SOLAS, RORC, ORC and meets Sections A.1/1.33 and A.1/4.39 of Annex A1 of Marine Directive 98/95/EC. Claimed performance figures of the above radar reflectors may vary slightly from product to product due to circumstances beyond our control.

Dimensions:

- Length - 710mm
- Overall diameter - 325mm
- Weight - 4.6 kg
- Distance between centres - 670mm (approx)
- Fixing holes - 10mm

Part No.	Description
175877	EM305
175878	Mounting bracket - Mast
175879	Mounting bracket - Deck

### Echomax EM230 I Inflatable

Metax array with fluorescent yellow PVC case. Folds down neatly and is an ideal addition to the grab bag for emergency use. QinetiQ (DERA) registered an astonishing 28 sq.m peak at + or - 3 degrees and exceeds RORC requirements by nearly three fold.

Meets ISO 8729, RORC, ORC and SOLAS Chapter V regulation 19 requirements.

Claimed performance figures may vary slightly from product to product due to circumstances beyond our control.

Dimensions:

- Length - 720mm
- Overall diameter - 330mm
- Weight - 355g

Part No.	Description
175871	Inflatable reflector
175876	Mounting kit

### Echomax A031I Inflatable

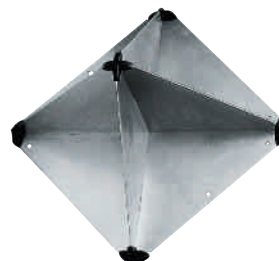
Solas approved.

- Ideal for safety packs/grab bags
- Inflated 615mm diameter
- Packed Dimensions 230x305mm
- Weight 6kg

Part No.	185643
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### Folding Aluminium Radar Reflectors\*

We have three sizes available. Suitable for smaller boats or as emergency reflectors for larger crafts. Easy to mount on a halyard line.



Part No.	Description	Reflective area
27015	21.5 x 21.5cm	3m <sup>2</sup>
23648	30.5 x 30.5cm	5m <sup>2</sup>
10074	34 x 34cm	7m <sup>2</sup> (complies with IOR)

\*Must be mounted in the catch water orientation for optimum performance