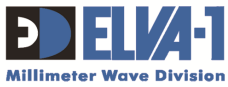


# 76 GHZ DOCKING RADAR



ELVA SHIP'S DOCKING AID RADAR SENSOR



## ABOUT ELVA DR-76 RADAR

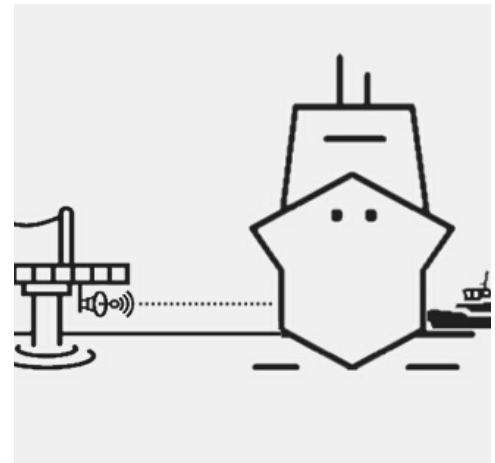
ELVA's DR-76 docking radar measures the distance and speed of the ship approaching the berth, by transferring raw data from radar to telemeter application to be displayed to operators (helmsmen) on the ship and harbor tug boats.

This radar technology assists all ships easy to berthing (mooring) the jetty by using license-free 76 GHz radar beam from two or more radars installed at the jetty as sensors. The radars monitor distance between the ship away from the jetty, and measure speed of the ship movement while berthing.

## DR-76 RADAR FEATURES

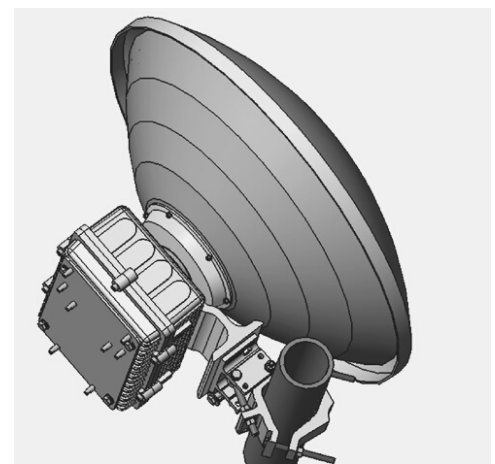
Millimeter wave radars have no weather limitations unlike laser rangefinders. DR-76 provides easy penetration of the beam through fog, dust, smog, smoke and water vapor.

As a result, the tug helmsman receives reliable radar information even in adverse weather conditions, with relatively small radar itself.

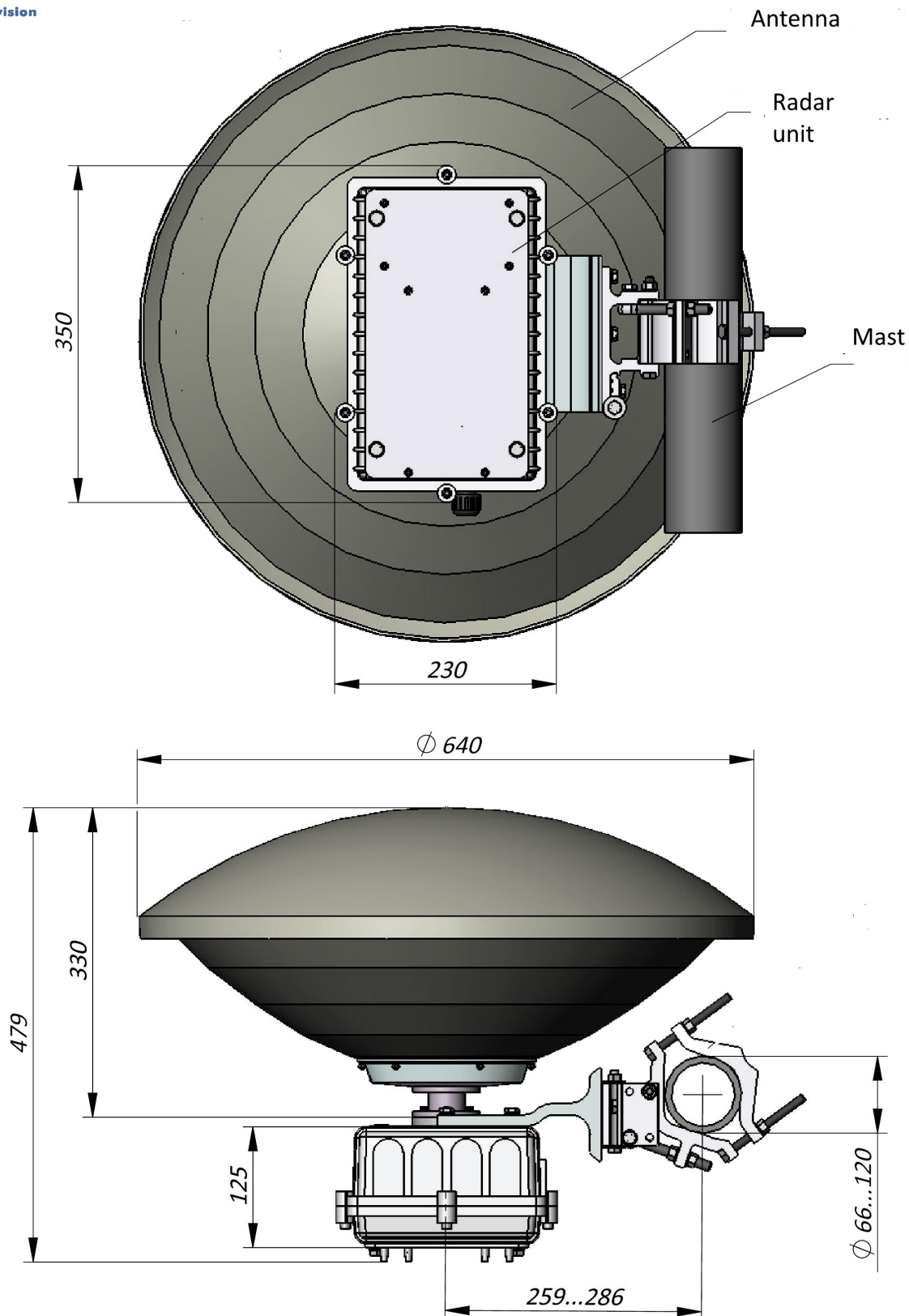
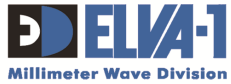


## PRINCIPAL SPECS

- Reliable range of measuring the distance of the vessel from the berth: **0 - 500 m**
- Accuracy of measuring the distance between the vessel and the berth: **1 cm**
- Accuracy of approach to the berth: **0.1 km / h**
- Frequency of measurements of distance and approach speed: **50 times / s**



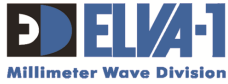
# DR-76 DIMENSIONS IN MM



The design of the radar includes

- **Radar unit** for measuring speed and distance,
- **Cassegrain-type antenna** to form a very narrow radiation pattern. **60 cm antenna** is basic one for this radar, while other antenna sizes from 10 cm to 90 cm are available on request.
- **Alignment mount** for fixing the radar on the mast (supporting leg) and precise adjustment of the antenna to the monitored harbor area from the berth.

# DR-76 SPECIFICATIONS



DR-76 is all-weather specialized radar for use on the berth for safe ship berthing. DR-76 is acronym for 76 GHz Docking Radar.

By its functionality, the radar is an analogue of the parking sensor on the auto vehicle. Moreover, DR-76 radar is based on automotive radar specs, and it works in millimeter-wave band at the frequency of around 76 GHz, which worldwide devoted for license-free applications of automotive cruise control radar. This frequency band of 76 GHz is belonged to W-band, and does not require a license in Europe, USA and many other countries.

Because radar produces just row data about distance and speed, the practical use of the DR-76 requires that each radar has to be connected to a server with installed application to convert row data to values suitable to display on monitors or mobile devices. ELVA supplies basic software to get data from radar displayed on a computer monitor, and API to implement data to custom-tailored application.

## SDM-76 SPECS

Distance measurement range	0 – 500 m
The max distance measurement error	+/- 0.01 m
Speed measurement range	0.1 – 100 km / h
Speed measurement accuracy	0.1 km / h
Radar frequency	76.5 +/- 0.15 GHz
Modulation	FMCW
Output power at Swept frequency modulation	10 mW
Antenna diameter	600 mm
Beam width	0.42 degrees
Diameter of spot at 500 m	4.3 m
Output Interface	100Base-Tx UTP Ethernet
Measurements update time	20 ms
* Consumed electrical power	25/35 W, 18-36 V DC
Environment protection class	IP65
Environment operating temperature ,°C	-45 to +55 °C

\* When operates at cold weather, the radar automatically activates 10 W heater inside the radar case to keep radar components running reliably. Thus, the consumed power changes from 25 W to 35 W.

## CONTACT US

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