General

“He who sees the most, and sees it before anyone else does, has the advantage.” This axiom holds for naval and any other type of warfare. Therefore, Thales Naval Nederland, keenly aware of the difference situational awareness makes, offers the LW08, a high-powered, coherent D-band radar system, for use on board naval vessels.

The LW08 is a radar system for long-range surveillance, providing target indication to weapon control systems. It meets all vital requirements for any naval surveillance system: LW08 presents a clear picture of the environment; it does so, reliably, under any circumstances; and it does it without adding great weight to the superstructure of the ship.

The aspect which distinguishes LW08 from its competitors is its wide range and superb accuracy.

The system has proven its worth time and time again, operating in various configurations.

LW08 performs with great frequency agility over a wide band, due to its synthesizer-driven TWT transmitter.

Excellent performance under various clutter conditions is ensured by the wide dynamic range receiver with application of digital video processing, supported by circular polarization.

Moreover, due to its lightweight construction and hydraulically controlled stabilization platform, this antenna can be installed at a high mast position, thereby improving performance.

Main characteristics

- Long-range detection, with very short minimum range
- Fully coherent system
- Frequency agility over a wide band
- Pulse compression
- Linear and circular polarization
- Digital video processor, using MTI
- Hydraulic roll and pitch stabilization.
**Functional Aspects**

The LW08 is an operationally proven radar system. LW radars have been installed on board ships in several configurations. All systems are provided with solid-state components, a TWT transmitter, a video extractor for automatic target tracking and built-in test equipment. Optionally a back-up solid state transmitter can be offered for reduced TWT use and improved performance in littoral environment. They are simple to operate and easy to maintain. IFF can be integrated by mounting an IFF antenna with interrogation path side-lobe suppression (ISLS) capability and by adding synchronized IFF interrogators.

**Options**
- Integrated IFF capability
- Solid-state, reduced-power, back-up transmitter

**Performance Data**

Detection range
- Small missile : 100 km
- Fighter aircraft : 230 km
- Target speed : up to Mach 4
- Surface targets : radar horizon
- Minimum range : 2 km
- Instrumented range : 135/270 km
- Tracking capacity : 400

**Technical Data**

**Antenna parameters**
- Type : horn-fed parabolic reflector
- Beamwidth - horizontal : 2.2º
- vertical : cosec2 up to 40º
- Polarization : linear/circular
- Rotation speeds : 7.5 and 15 rpm

**Transmitter parameters**
- Type : TWT
- Frequency : D-band
- Frequency modes : fixed frequency and frequency agility
- Transmission modes : full scan and sector transmission
- Average power : 5.2 kW

**Receiver parameters**
- Receiver channels - air surveillance : MTI and LIN
- surface surveillance : LIN or LOG
- Video processing : MTI: digital canceller and video correlator
  Digital ISU and LOG with PLD
- Compressed pulse length : 0.6 µs

**Dimensions and Weight**

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Height (mm)</th>
<th>Depth (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilized antenna</td>
<td>010000 8757</td>
<td>-</td>
<td>3100</td>
</tr>
<tr>
<td>Hydraulic power unit</td>
<td>940</td>
<td>1900</td>
<td>911</td>
</tr>
<tr>
<td>Transmitter cabinet</td>
<td>3507</td>
<td>1990</td>
<td>837</td>
</tr>
<tr>
<td>Receiver cabinet</td>
<td>938</td>
<td>1994</td>
<td>710</td>
</tr>
<tr>
<td>Cooling cabinet</td>
<td>938</td>
<td>1994</td>
<td>710</td>
</tr>
<tr>
<td>Remote control unit</td>
<td>512</td>
<td>344</td>
<td>230</td>
</tr>
<tr>
<td>Video extractor cabinet</td>
<td>556</td>
<td>639</td>
<td>404</td>
</tr>
</tbody>
</table>

**Power Requirements**

Main equipment
- 440 V 60 Hz 3 ph. 33 kW
- 115 V 60 Hz 3 ph. 6.15 kW
- 380 V 60 Hz 3 ph. 31 kW

Anti-condensation heating
- 115 V 60 Hz 1 ph. 1.3 kW

Antic icing heating
- 115 V 60 Hz 3 ph. 2.5 kW

Synchro reference
- 115 V 400 Hz 1 ph. 0.2 kW

Ship's cooling water
- 1 l/s (max. temp. 9ºC)

**Environmental Conditions**

The design and construction of the equipment are based on current international military standards for shipborne equipment.

**System Overview**

Antenna System

BTC (Option)

Man Aloft Switch

HPU

Ship's data (analogue)

Cooling cabinet

Transmitter cabinet

Receiver cabinet

Ship's cooling water

Videos

Command & Control Ship's Data Tracks / Track Control

VEX-TMS

Ship's cooling water

SHORE-terminal

SHORE-console