

# Clariscan



KONGSBERG



## High-performance Domed Sonar 975-21330000

Kongsberg Discovery's innovation in domed-sonar technology combines a wide-bandwidth composite transducer with a patented acoustic lens to provide unprecedented image clarity from a domed sonar head. The result is Clariscan - a high-performance, multi-frequency imaging sonar.

### The problem

Oil-filled domes were introduced to provide protection and eliminate flooding on traditional exposed transducer shafts.

This innovation solved flooding issues but introduced beam defocusing in two conditions: warm & shallow, and cold & deep. The beam defocusing effect becomes more extreme in warm, shallow water as temperature increases and in cold, deep water as depth increases.

### Our solution

We have designed an acoustic lens that maintains beam focus through operational temperature and depth changes, significantly improving sonar performance and resulting in images that are much sharper.

The Clariscan acoustic lens behaves like an optical contact lens, correcting refraction caused by oil in the dome.

### Performance where you need it

The Clariscan has a depth rating of 4000 m and is part of Kongsberg Discovery's 1171 series of sonar heads. It has been optimized to meet the requirements of deep-ocean applications. These sonar heads provide the highest level of image quality.

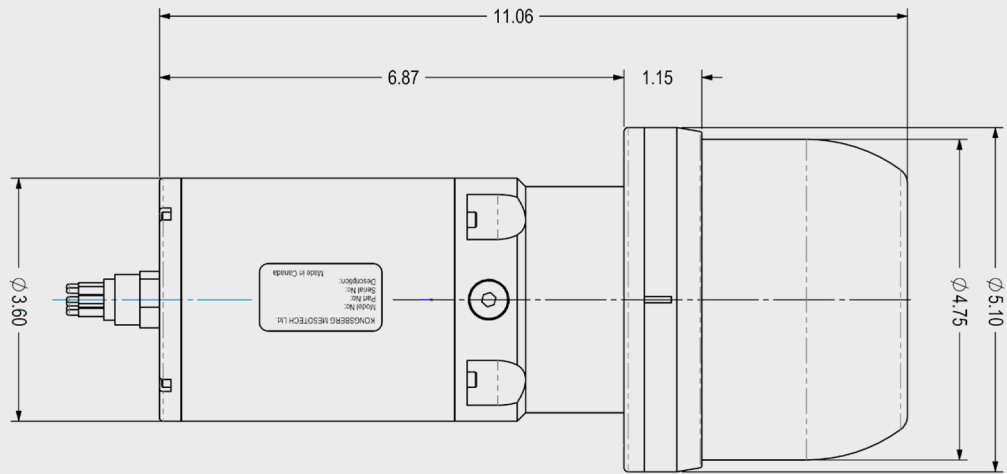
The telemetry is RS485 and RS232 compatible and is automatically sensed and configured at startup. The sonar head is configured and controlled using the MS1000 Software.

### FEATURES

- Depth rating: 4000 m
- Robust design
- New acoustic lens technology
- Improved image resolution and sharpness
- Improved operating range and frequency

### APPLICATIONS

- Target detection
- Infrastructure inspection
- Search and recovery
- Site inspection



## Technical specifications

### Clariscan Sonar 975-21330000

#### Performance

Tunable in 5-kHz steps from 300-600 kHz (excluding 570-580 kHz, which is blocked from use) and 605-1200 kHz in both CW and LFM modes.

Preset frequencies / beam widths	330 kHz / 2.7°x26°, 450 kHz / 2.2°x19°, 600 kHz / 1.6°x16°, 675 kHz / 1.4°x36°, 800 kHz / 1.2°x31°, 900 kHz / 1.0°x25°, 1000 kHz / 0.9°x22°, 1100 kHz / 0.8°x20°
Maximum range	300 m @ 330 kHz, 100 m @ 675 kHz, 50 m 1000 kHz
Minimum range	0.5 m
Range resolution	≥3.75 mm (variable, determined by transmit-pulse width)
Sample options	238, 476, 952, 1904 (Low Resolution, High Resolution, Zoom x 2, Zoom x 4)
Sampling resolution	0.26 mm (0.5 m range @1904 samples), 21 mm (10 m range @ 476 samples)
Typical scan speed	3.7 sec/360° @ 5 m and 1.8° step size (@ 460 kbps)
Nominal scan speed	34 sec/360° @ 100 m and 1.8° step size (@ 460 kbps)
Scan angle	360° continuous (user adjustable for limited sector scans)
Step size	0.45° - 7.2° (user selectable)
Transmit pulse widths	5 μs to 1000 μs (auto selected for optimized operation)
Receive bandwidth	Based on 'Wide' setting: 493 kHz (0.5 m range), 109 kHz (10 m range)
Telemetry	RS485 or RS232 asynchronous serial data
Downlink / uplink	9600 bps to 921 kbps

Fixed telemetry is user selected for compatibility with other serial communication equipment. Optimized telemetry is auto set to highest rate allowed by the quality of the telemetry link.

#### Physical / Environmental

Power requirement	22-26 VDC @ ≤ 0.8 A
Operating temperature	-1° C to +40° C
Storage temperature	-1° C to +40° C
Operating depth	4,000 m
Connector	SubConn® MCBH6MSS
Materials	Aluminum 6061-T6, 300 Series S.S., Urethane
Finish	Anodized, Black/Blue MIL-A-8625 type II
Diameter	5.1 in / 130 mm
Length	11.06 in / 281 mm (excluding connector)
Weight in air	9.0 lb / 4.1 kg
Weight in seawater	3.9 lb / 1.8 kg

Specifications subject to change without any further notice.