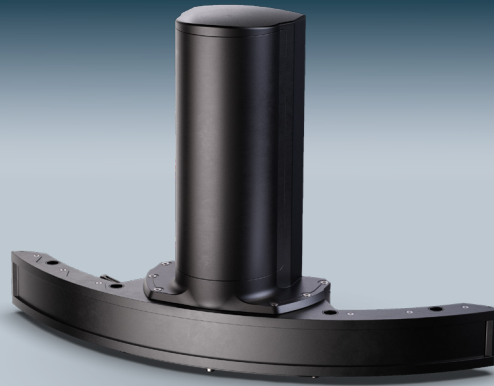




NORBIT WINGHEAD® i77h



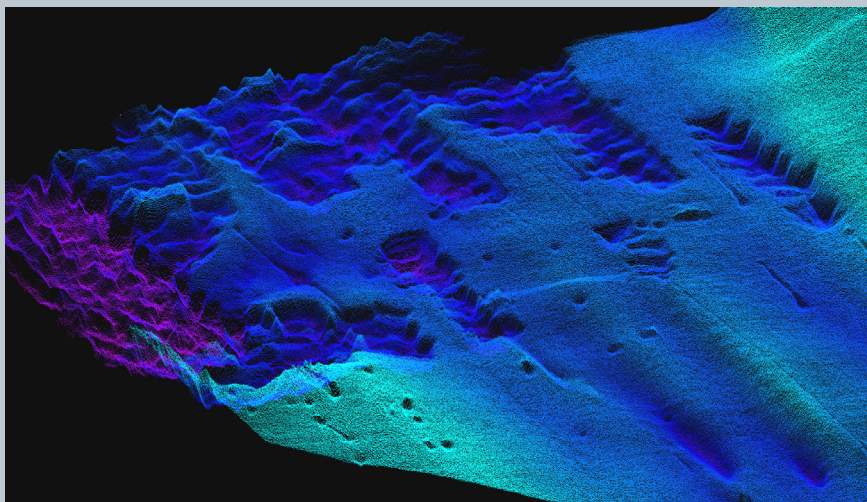
Superior Performance Ultra High-Resolution Curved Array Bathymetric System.

NORBIT introduces the first cylindrical ultra-high resolution curved array bathymetric system, designed for rapid anywhere anytime mobilization featuring the highest standard industry leading integrated GNSS/INS positioning system.

NORBIT WINGHEAD sonars are based on a state of the art analogue and digital platform featuring powerful signal processing capabilities, offering roll stabilized bathymetry and several imagery and backscatter outputs ensuring the highest quality survey data performance. With broad R&D expertise, NORBIT has developed - from the ground-up - exciting new technology that allows existing and new applications to benefit from the advantages offered by a compact wideband curved-array multibeam sonar.

The NORBIT WINGHEAD i77h is a compact ultra-high resolution curved array broadband multibeam sonar offering tight integration with GNSS/INS (Applanix OceanMaster) that is designed for use in the most demanding operational environments such as under bridges or in rough sea conditions. Characterised further by a small form factor; low power draw and tight integration, WINGHEAD i77h installation can occur on surface survey platforms ranging from small USVs to large vessel permanent hull mounts.

Supported by DCT (Data Collection Tool) for efficient survey data acquisition.



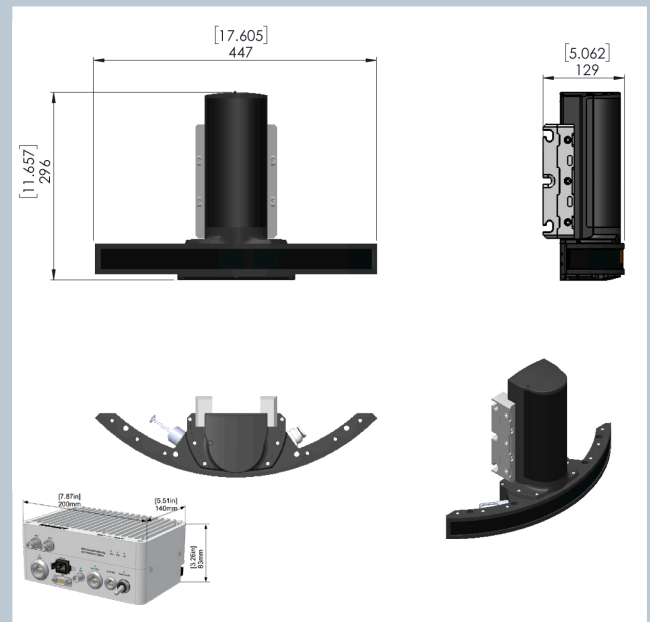


Features	Applications	Options
<ul style="list-style-type: none"> ✓ Multibeam Sonar with Integrated Inertial Navigation System & Integrated NTRIP Client ✓ 80kHz Bandwidth ✓ Roll-stabilisation ✓ Backscatter outputs (Intensity, Sidescan, Sidescan Snippets, Snippets, Water Column) ✓ Multidetect ✓ Pipeline Mode ✓ Simple Ethernet Interface ✓ Integrated Sound Velocity Probe ✓ 1024 Dynamically Focused Beams ✓ Mounting Bracket Included ✓ FM & CW Processing ✓ Exceeds IHO <i>Special Order</i>, CHS <i>Exclusive Order</i> & USACE <i>New Work</i> 	<ul style="list-style-type: none"> ✓ Shallow Water Bathymetry ✓ Pipeline & Cable Inspection Surveys ✓ Quay wall, bridge and structure inspection surveys ✓ Pond, River and Estuary Surveys ✓ Harbor and Lake Surveys ✓ USV & UUV ✓ Coastal Surveys 	<ul style="list-style-type: none"> ✓ Sound Velocity Profiler ✓ Data Collection Tool (DCT) ✓ Turnkey Survey Solutions ✓ Permanent Hull Mount Option ✓ Pole Mount ✓ Supports NORBIT iLiDAR ✓ Acquisition, Navigation and Post Processing Software ✓ Senior Hydrographer for Support and Training ✓ Can be Delivered with Software Packages e.g. DCT, HYPACK, Qinsy, EIVA, CARIS and Others

TECHNICAL SPECIFICATION

SWATH COVERAGE	5-210° FLEXIBLE SECTOR (SHALLOW WATER IHO SPECIAL ORDER >155°)
RANGE RESOLUTION	<10mm ACOUSTIC w. 80kHz BANDWIDTH
NUMBER OF BEAMS	256, 512, 1024 EA & ED
OPERATING FREQUENCY	NOMINAL FREQUENCY 400kHz (FREQUENCY AGILITY 200-700kHz)
DEPTH RANGE	0.2-300m
PING RATE	UP TO 60Hz, ADAPTIVE
RESOLUTION (ACROSS X ALONG)	STANDARD: 0.5° X 0.9° @400kHz, 0.3° x 0.5° @700kHz
POSITION	HOR: ±(8mm +1ppm x DISTANCE FROM RTK STATION) VER: ±(15mm +1ppm x DISTANCE FROM RTK STATION) (ASSUMES 1m GNSS SEPARATION)
HEADING ACCURACY	0.02° (RTK) WITH 2m ANTENNA SEPARATION
PITCH/ROLL ACCURACY	0.01° INDEPENDENT OF ANTENNA SEPARATION
HEAVE ACCURACY	2 cm OR 2% (TRUEHEAVE™), 5 cm OR 5% (REAL TIME)
INTERFACE	ETHERNET
POWER CONSUMPTION	<90W (10-28VDC, 110-240VAC) TOTAL
DIMENSIONS	DIMENSIONS WITHOUT BRACKET H: 447mm/17.605", L: 296mm/11.657", W: 101.9mm/4.010"
WEIGHT	6.9kg (AIR) 3.8kg (WATER) EXCL. BRACKET 7.4kg (AIR) 4.0kg (WATER) INCL. BRACKET
CABLE LENGTH	STD 8m, OPTIONAL: 2m, 25m
OPERATING TEMP.	-4°C to +40°C (TOPSIDE -20°C to +55°C)
STORAGE TEMP.	-20°C to +60°C
ENVIRONMENTAL	TOPSIDE: IP67: DUST TIGHT, PROTECTED AGAINST THE EFFECT OF IMMERSION UP TO 1m WET-END (SONAR): 100m

OUTLINE DRAWING



Sonar including bracket (bracket shown in grey)