DOLPHICAM2 DATA SHEET

MARKETS

AEROSPACE
AUTOMOTIVE
MARINE
WIND ENERGY
OIL & GAS
PIPE & WELD INSPECTIONS
PRODUCTION

APPLICATIONS

Impact damage. Lightning strikes CFRP.
Adhesive Joints with carbon, steel, aluminium, multi-materials and multilayers.
Drilled hole CFRP.

Impact damage. Lightning strikes CFRP.

GFRP/CFRP inspection, corrosion mapping, crack- or void-detection.
Debonding and delamination in pipes and laminates.

Friction/HDPE welds void detection.

Debonding multilayer structures.

Bond inspection in CFRP & multi-material (ex: CFRP/aluminium).
Drilled hole CFRP, Corrosion inspection in pipes and laminates.
Cracks and voids in metals (titan, aluminium, steel, etc).

THE DOLPHICAM2 PLATFORM

Ultrasound Imaging platform for NDT

MATERIAL INSPECTION CAPABILITIES:
METALS | CFRP | GFRP | GLARE

INSPECTION DEPT: up to 60mm*

FULL MATRIX CAPTURE (FMC)

Frequency range: 0.5 – 15MHz
Transducer arrays: 128 x 128
Transducer elements: 16 384
TRM dimensions: 40 mm x 40 mm
Element Pitch: 250 µm (10 mils)

SCANS/VISUALISATION-MODES
VIEW: A-scan, B-scan, C-scan [2D], or 3D
OPTIONS: Amplitude or Time-of-Flight

Real-time visualisation

LARGE AREA STITCHING

PLATFORM WEIGHT: 3.0 kg/7 lbs.

MADE IN NORWAY

Dolphicam2 is developed and manufactured in Norway by Dolphitech AS. We work with a global network of partners to deliver the most innovative and feature-rich NDT platform on the market.

* This is material dependent
## PHYSICAL
- **Total Weight**: 3045 grams (6.7 lbs.)
- **Transducer Module (TRM)**: 265 grams (0.58 lbs.)
- **black box**: 985 grams (2.167 lbs.)

## TOUGHPAD FZ-G1
- **Display**: Touch screen – 10.1" (1920 x 1200)
- **OS & Software**: Windows 10 – **dolphin cam 2** Software installed
- **CPU, Storage, RAM**: Intel i5, 256GB SSD, 8GB RAM

## POWER
- **Power supply**: Battery/charger (12V DC)
- **Battery specification**: Rechargeable Li-ion battery pack (7.2V 6.7Ah)
- **Battery life**: 5 - 6 hours of continuous scanning

## CONNECTIVITY & IO
- **Communication**: USB C 3.0, USB A 2.0, Ethernet
- **Transducer ports**: 2 x Quadrature Encoder & GPIO (General Purpose In/Out)
- **DSUB-9** (for X-Y scanning)
- **Notifications**: Audio Buzzer

## ENVIRONMENTAL
- **Operating Temperature**: 0˚C to +40˚C (32˚F to 104˚F)
- **Operating Temp with Degrading**: -20˚C to +50˚C (-4˚F to 122˚F)
- **Storage Temperature**: -20˚C to 65˚C (-4˚F to 149˚F)
- **Max operating altitude**: 2000 meters (6562 feet)
- **Ingress Protection**: IP66
- **Decreasing linearity to 50% relative humidity at 40˚C**: Maximum relative humidity 80% for temperatures up to 31˚C. Decreasing linearity to 50% relative humidity at 40˚C.
- **EMC**: EN61326, FCC part 15B, FCC part 18
- **Vibration and Shock**: Mil-STD810G 516.6
- **Electrical Safety**: IEC-61010-1:2010

## TECHNICAL SPECIFICATION

### TRANSDUCER TECHNOLOGY
- **Transducer type**: Matrix (2D-array)
- **Transducer arrays**: 128 x 128
- **Transducer elements**: 16,384
- **Element size**: 210 µm
- **Element pitch**: 250 µm [10 mils]
- **TRM frontface dimensions**: 40 x 40 mm
- **TRM active area**: 32 x 32 mm
- **Receiver Channels**: 32 (parallel acquisitions)
- **Receiver Bandwidth**: 0.5MHz to 15MHz
- **Acquisition/Frame Rate**: 5 to 50 frames/sec
- **Digitizing (Sampling) Rate**: 50 to 65 MHz (Up-sampled to 200 MHz)
- **A-scan resolution**: 12 bits (+/- 2048) Up sampled to 16 bits (+/- 32 768)
- **Transmit Pulse**: 0-70 V square wave
- **Rise/Fall time**: ~5 ns

### GENERAL FUNCTIONALITY
- **Scans/visualisation-modes**: A-scan, B-scan Horizontal & Vertical, C-scan Amplitude & Time-of-Flight, 3D Amplitude & Time-of-Flight Stroching
- **Measurements**: Depth B-scan, Depth & Amplitude in C-scan Rectangle (Width, Height, Area), Circular (Diameter, Circumference, Area)
- **Reporting**: Images & settings
- **Full Matrix Capture (FMC)**: Save & Load FMC – Post process on FMC
- **Configuration Settings**: Save & Load
- **Others**: Colour Focus, Reset settings to default, Save screenshot, GUI scan button, Expanded view

### TRANSCLUDER FUNCTIONALITY
- **Gain**: -40dB to 0dB
- **Time Corrected Gain (TCG)**: 0 to 10 dB/µs
- **Transmit Elements (Aperture)**: 1 – 32
- **Averaging**: 1 – 16
- **Pulse length**: 5 – 635 ns [5 ns increments]

### COVERAGE FUNCTIONALITY
- **Delay**: 1 – 82 µs (delay between transmit and acquisition)
- **Depth**: 1 – 120 mm @ 6000 m/s
- **Speed of Sound**: 100 – 20 000 m/s [Preset list]
- **Gates**: Up to 3 separate gates
- **Amplitude Threshold**: The threshold for each gate
- **Capture Method (for C-Scan)**: Max Absolute, Max Negative, Max Positive
- **A/B Scan Mode (RF)**: Full, Absolute, Envelope
- **Colour Palettes**: Jet, Grey, Grey-inverted, Autumn, Bone, Winter, Rainbow, Ocean, Summer, Spring, HSV, Pink, Hot
- **Image Filter**: None, Gaussian, Median

### CALIBRATION
- **TRM Calibration/balancing**: Amplitude, Time-of-Flight

### USER PREFERENCES
- **Measurement Unit**: Millimeters, Inches, Mils

### STITCHING
- **Manual Stitching**: No accessories needed
- **GridTool Stitching**: Used with Grid Tool
- **Encoder Stitching**: X and Y – Used with any quadrature encoders

### More information or request a demo
[www.dolphitimech.com](http://www.dolphitimech.com)