

CQA

Construction QA

 **PDM³**



PILE DRIVING MONITOR

What is the PDM³?


The Pile Driving Monitor PDM³ is a multi-function high-speed infra-red camera designed for piling and infrastructure projects.

The PDM³ is capable of

- Precise non-contact measurements of pile static and dynamic movements using reflective stickers
- Simultaneous tracking of up to 32 targets
- Scanning rates of between 45 and 8043 measurements per second
- Measurements from between 2m and greater than 50m distance

PDM3 benefits to piling:

- **Safety** Removing site crews from the piling danger area
- **Precision** Unprecedented accuracy of pile evaluation
- **Versatility** Driven, vibrated and jacked piles
- **Accuracy** Extending PDA/CAPWAP® benefits to every pile
- **Reliability** Secure real-time reporting and documentation
- **Practicality** Fast and easy to use by site crew



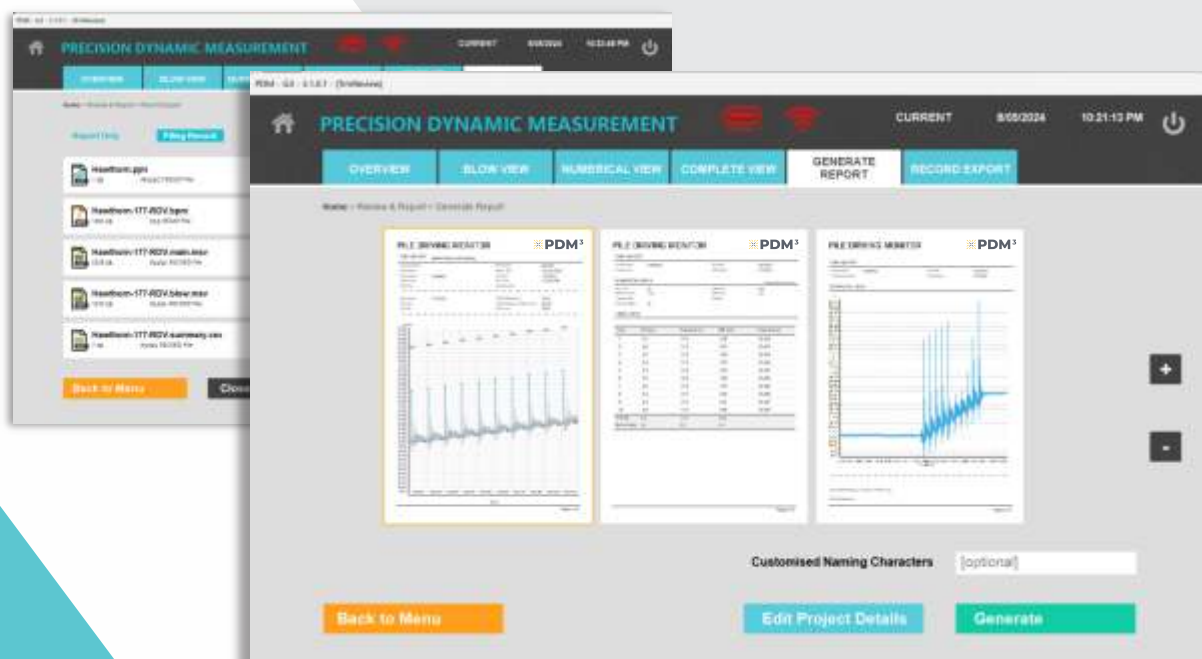
The PDM3 is not only for use on land. The PDM3 is a perfect solution for marine piling, providing real-time measurements of set, rebound and blow count from both jack-up and floating barges in low and high sea states.



The PDM3 user experience provides 4 real-time views of the piling data. Numerical View provides a running summary of the key statistics for the last 15 blows in any driving sequence, including set, rebound, stroke, penetration and peak pile velocity. The average value for the last 10 blows is also summarized. Overview is a graphical view of the last 10 blows. Additionally Blow View shows each blow individually as it is delivered, and Complete View shows the full sequence of blows, which might include hundreds of blows.



All data is encrypted, time-stamped and can optionally be geolocated. On completion of each test, 10 representative blows can be selected and the PDF report previewed and saved.





General Specifications

Weight (including battery)	1010 g	
Dimensions (length, width, height)	197 x 99 x 156 mm	
Temperature Performance	Storage : -20 to +50°C	Operation : -10 to +45°C
IP Classification	IP65	
Optics	25mm lens with 4 No. 850nm IR illuminators and narrow band IR filter	
Pointers	2 No. 532nm removable green lasers (Class 3R , <5mW) (check local OHS construction industry requirements)	
Measuring FOV (Field-of-view)	Line detection mode 8.73° (1540 mm @ 10m offset) Area detection mode 8.73° x 4.7° or Area detection mode (1540mm x 830mm @ 10m offset)	
Sampling rate	45 to 8043 Hz	
IMU	Invensense MPU-6000 3-axis Gyroscope, 3-axis accelerometer, battery monitor, and core temperature sensor	
Supply power	4 No. button-top rechargeable batteries	
Charging	USB-A or USB-C to USB-C charging (cables supplied)	
Data Interfaces	Wired : Ethernet over USB Wireless 2.4GHz WiFi	
Current consumption	Idle mode : 3.5W (LEDs are off) Measuring : 7W (USB and WiFi)	

Operational Characteristics

Offset Distance Range	2m to >50m (5m to 15m typical)
Accuracy at 10m offset	Position:±0.1mm Velocity:±0% to -5%
Rotational Tolerance	±45° from perpendicular
Recommended Mounting	solid placement on sand bag on ground; or tripod
Sampling rate Accuracy	better than ± 0.1%
Multi-point tracking	up to 32 simultaneous targets

Security Features

Code Protection	CPU-level encryption
Console binding	Each copy of software is coded to bind to its tablet console. Illegal copy software will not work in other environments
Digital output	All data files are protected by encryption
Client logo	Hardwired into every report
Secure connection	Standard WPA2, password protected



Rugged Tablet PC

Model	Cenava W80Y 8" rugged tablet
Size and weight	227 x 142 x 22.5 mm and 830 g
Memory	8GB RAM
Storage	128GB SSD
CPU	Intel(R) Core(TM) i5-10210Y Quad Core 8 Thread 1.0GHz-4.0GHz
Screen	8" Frame mount TFT screen HD resolution (1920x1280) 10 point tempered glass G+F+F, hardness > 7H , 700 cd/m2
Environmental	IP68, 3C, CE, US military standard-810G certification, energy-saving certification, ISO quality certification system, ROHS three-proof salt spray test
Drop Resistance	US MIL-STD-810G 1.22 metres drop resistance
Operating temperature	-20 to +60 °C
Battery	Polymer lithium-ion battery 7.6V 5000mAh, 19V/3.42A charging in 4 hours
GPS	GPS, Beidou, Galileo, GLONASS capable of location detection within 2.5m (SIM card required)

Warnings and Classifications

PDM³

Class 1 LED Device (Classification IEC 60825-1:2014)

Product specifications may be subject to change without notification



BECAUSE EVERY **PILE** IS IMPORTANT



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