

# HMP LFG 4 LIGHT WEIGHT DEFLECTOMETER (LWD)

**For Rapid On Site Determination of Modulus & Compaction Quality of Soils, Non-cohesive Sub-bases & Sub-grade.**



The **HMP 4** is a **Light Weight Deflectometer** portable dynamic **impulse plate load tester** based on accelerometer sensor, to determine :

- **Compaction Quality of Soils (through correlation with Dpr).**
- **Soil Bearing Capacity (Deflections).**

The **LWD**, based on its principle, allows measurement on multiple layers of soil, unbound sub-base and sub-grade during formation or before overlay and pavement.

The **HMP LFG PRO** is utilized for measurement of settlement values (deformation rates) and dynamic modulus of deformation of soil in the range **Evd = 15~70MN/m<sup>2</sup>**

Deflections may be either correlated directly to pavement or used to determine in-situ material characteristics of the pavement or track bed foundation layers. Use of the data include **quality control** and quality **assurance** of **compacted layers**, and for structural evaluation of load carrying capacity.

**HMP 4** is in association with **HMP Germany**.

## Compliance :

- The equipment is in compliance to **ASTM E2835**, standard test method for measuring deflection.
- In Conformance With The German Technical Test Standard For Soil and Rock In Road & Railway Construction TP BF-STB Part B 8.3/Issue 2003.
- The LFG provides measurements that have direct correlation to static load test (DIN 18134, BS1377, ASTM D1194/1195/1196) & Procter test (Dpr)\*.
- The following national standards, directives and specification have been applied : **DIN 8418, DIN 31 000, DIN 18 134, DIN 66 055.**

## Suitable for :

- **Course grain & mixed grain soils** with **maximum grain size of 63mm.**

## Applications :

- Road construction.
- Railway construction.
- Earth works.
- Pipe & canal construction.
- Examination of foundation fillings.
- Compaction monitoring in Pipe & Cable trenches.

## Advantages :

### Greater Capability In Relation To Other Test Methods :

- No requirement for proctor tests.
- Modules of Deformation Evd output at time of test.
- Can be used even for course grain or gravelly soils.
- Can be used in close proximity to metal elements.
- Depth of influence provides information of deeper zones.
- LFG in many cases is the only instrument that can provide directly measured, repeatable and quantifiable quality assurance records.

### Advanced electronic measurement unit :

- 5 Rows Graphic Display with simple menu navigation for defining settings, measure, print, save or transfer of data.

### Fast and cost saving :

- Time-saving (maximum **3 minutes per** measuring point).
- No vehicle required.
- Immediate on-site evaluation of test results.

### Reliable and precise :

- Calibrated by approved calibration institute.
- Complies with the latest state-of-the-art technology.
- Field tested, successful in use throughout the world.



**\* Cross assignment correlation table can be provided on request.**

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**Only 3 minutes to the Test Result :**

## Prepare :

Prepare the test ground by positioning the machine on the surface and pre compact the test surface using the equipment itself by dropping the weight 3 times.

## Measure :

- Press (Power) to switch on the settlement measuring instrument.
- Perform 3 impacts in succession.
- The settlement value in mm is displayed after each impact.
- After completion of the test, the average settlement, the deformation modulus, the path to-speed ratio and the settlement curve are calculated.
- Settlement curves can be viewed on site itself.

## On Site Documentation Of Test Results & Data Storage :

- Printing of measured data from memory for documentation purposes at any time and in any place. **Thermal printer is integrated** with the LFG unit in the protective case.
- **Up to 200 tests** can be stored.

## Evaluation Via PC Software (\*) :

Series of measured data **can be transferred** to a PC for evaluation by **software**.

- **Evaluate, revise & archive measured values** on PC.
- Comfortable processing of the protocol by means of a special software program.

## Technical Specification :

Loading Mechanism :	
Total Weight	15.0 kg
Drop Weight	10.0 kg
Max. impact force	7.07 kN
Duration of impact	17.0 ± 1.5 ms
Material	zinc coated/hard-chrome plated steel
Load Plate :	
Diameter	300 mm
Plate thickness	20 mm
Total weight	15 kg
Material	zinc coated steel
Electronic Settlement Measuring Instrument :	
Power supply	4 X R6 batteries
Dimensions	210 mm X 80 mm X 25 mm
Settlement measuring range	0.1 to 2.0 mm ± 0.02 mm
Measuring range E <sub>vd</sub>	E <sub>vd</sub> ≤ 225 MN/m <sup>2</sup>
Temperature range	0 to 40°C
Storage capacity of measured data	200 series
Menu navigation	Selectable
Language	9 languages selectable

**Optional :** • 15kg Drop Weight with Loading Mechanism for Medium/Heavy Drop Weight Testing.

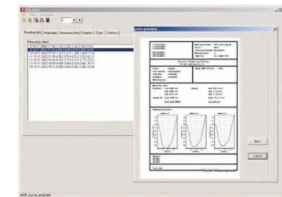
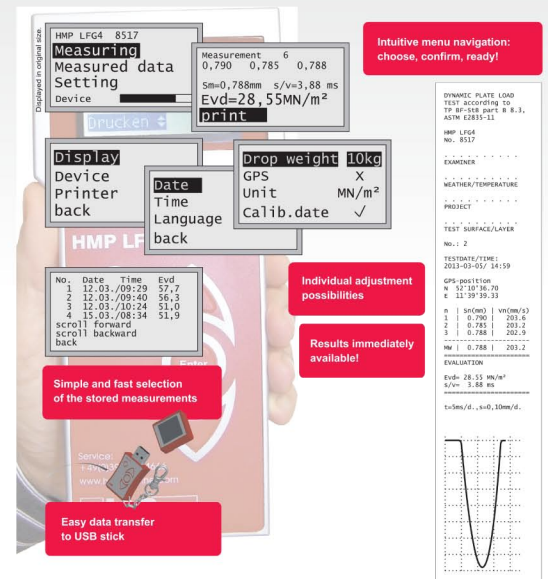
## Product Supply For ST-LFG 4 :

- Loading Mechanism with bubble level.
- Load plate with acceleration transducer.

## Product Supply For ST-SP-LBC 4 :

### Electronic settlement measuring instrument :

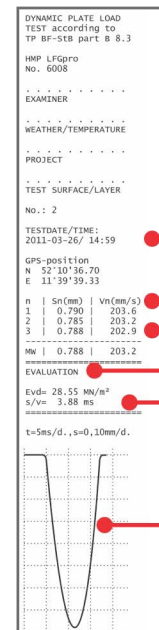
- Thermal Printer with 1.8Ah NiMH battery power pack, battery charger (100~240V) and vehicle charger (12~16V), \*connecting cable, 5 thermal paper rolls,
- Software for protocol to evaluate, revise and archive the measured values on PC provided with PC connecting cable, USB adaptor, instruction manual & Protective case.



Evaluation Via PC Software



Thermal Printer



Printout via Thermalprinter

