# UNIBOX V : LASER FOR ROUGHNESS PROFILE

## Longitudinal evenness measurement without contact

Vectra | Université Gustave Eiffel | EN 13036-6

## Description

UNIBOX-V is a simple, compact and affordable system capable of characterizing the longitudinal profile of a road infrastructure. Easily integrated into a vehicle vehicle, the system measures the longitudinal profile of the surface course for variations in wavelength between 50cm and 50m (optimum operating interval compatible with the measurement of measurement).

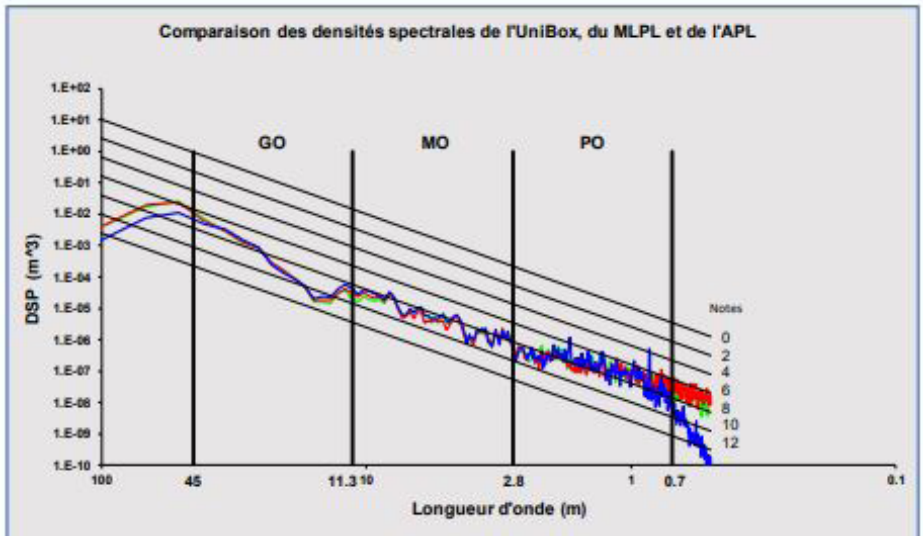
UNIBOX-V is not an approved measuring instrument approved in France for measuring before or after construction work. It is a primarily intended for quality control on construction sites quality control, particularly during the production of intermediate layers. In France, APL mlpc® trailers trailers remain the only reference equipment authorized for authorized to test wearing courses before and after work.

UNIBOX-V is supplied with data acquisition software and simplified data acquisition software and simplified operating software that automatically at the end of the measurement, the longitudinal profile and associated indicators. Acquisition of environmental from a windscreen camera is acquired simultaneously is acquired simultaneously with the uni measurement. The performance of UNIBOX-V was evaluated on the road compared with the French reference devices (APL and MLPL). Its measurement capabilities are as follows measurement capabilities :

- Faithful reproduction of defects at wavelengths within the uni measurement range (λ ∈ [0.7m; 45m]).
- Small differences can be observed with APL in small waves between 0.7 and 1 m.
- System operational above 30km/h, on dry or slightly roads.

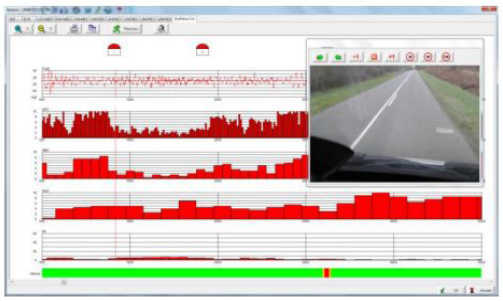

European standards — Normes européennes

Made in France — Fabriqué en France



## Features

| Data acquisition and processing software | |
|---|---|
| **UNIVIEW** | The UNIVIEW software is the UNIBOX measurements viewer. It allows reading and displaying the contents of the various files in the form of tables, itinerary diagrams or cartography, as well as environment images synchronized with the measurements. |
| **APL 2015 software UNIBOX-V data** | APL 2015 UNIBOX-V Data is the new version of the version of the APL 2000 software. NextRoad as a publisher and publisher and distributor, offers this solution for advanced processing of UNIBOX-V data. APL 2015 UNIBOX-V data does not allow to edit reports for the reception of wearing courses before or after works. |
| **UNISOFT** | The UNIBOX data management is provided by the UNISOFT software that allows to synchronize the UNIBOX data with distance information (incremental encoders and/or GPS). At the end of the measurement, a process is automatically executed to deliver the profile along the road (sampled in 5 cm steps) as well as the various usual indicators (NBO, DSP, IRI), all in accordance with the standard MEC (roadway testing means) format. A test report is automatically generated (PDF format) showing all the results as itinerary diagrams. |



## Standard equipment

UNIBOX :

- Is equipped with low-cost sensors (accelerometer and laser sensor).
- Uses a GPS for the distance and geolocation functions.
- Is considered as a class 2 profiler according to the World Bank specs.

## Accessories and options

Vectra also offers the following accessories :

- Windows 7 or 8 laptop with 3 dedicated USB sockets to control the system.
- Laptop mounting kit in the vehicle cabin.
- Standard attachment kit for mixed hook hitch (aluminium profile beam with plate and bolt).
- Specific hitch mounting kit (adapter for vehicle with APL trailer).
- Protection and transport case (customised cut foam).
- Incremental encoder odometer kit Ø 50 mm 250 points with fixing kit on vehicle wheel.

Université Gustave Eiffel Vectra *Equipment designed by UGE*