Testing Equipment for Construction Materials

HUMBOLDT

HA-6000B.3F Asphalt Pavement Scanner

Humboldt Asphalt Pavement Scanner

AASHTO PP98-19

Humboldt's Pavement Scan Head provides a comprehensive scanning system, which can be used to provide three different integrated methods for evaluating compaction of asphalt surfaces without the use of nuclear sources. At the heart of this system is the scan head, which is used in all three configurations. This scan head utilizes cutting-edge radar technology that measures the dielectric constant of the material and uses these readings to equate to compaction and density readings without the use of nuclear sources.

HA-6000B.3F Pavement Scanner

The base configuration of the Scan Head system, the Pavement Scanner, includes the scan head, coupled with an easy- to-push cart, an integrated wireless odometer and a rugged, shipping case, which includes an integrated battery charger that can charge all system components simultaneously. A tablet computer kit, HA-6200, is also needed and is purchased separately It includes mounting hardware and pre-installed software. The Pavement Scanner can be used for creating maps of dielectric constant readings, surface temperature and surface roughness. In this configuration, the system would typically be used to determine and document conformity of compaction.

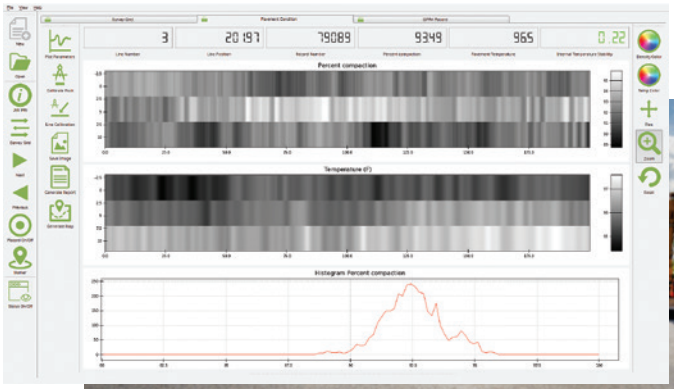
The Scanner's scan head sensor continuously scans the surface to produce compaction or density maps. These maps aid in accessing the uniformity of the asphalt surface, enabling better Q/A and Q/C, and ultimately reduced costs. Additionally, an integrated temperature sensor generates pavement temperature maps. Temperature differences indicate locations where the asphalt mix is not uniform in terms of temperature or mix (i.e., too little binder, different aggregate, etc.). cold zones and improperly compacted zones lead to premature failure of the mat.

The HA-6000B.3F Pavement Scanner measures dielectric constant (for uniformity), temperature and surface roughness. An asphalt mix calibration is needed to convert measured dielectric values to compaction/density values. A field grade mix calibration can be determined using a few nuclear density gauge readings so that compaction/density can be determined at survey time.

Perfect for Contractors

During construction, most contractors typically use nuclear gauges (or hire services) to help them achieve the quality and uniformity they want. State and Federal agencies typically use random testing (nuclear gauge readings or cores) for acceptance. Contractors can use the Asphalt Pavement Scanner to monitor consistency prior to any Agency testing ensuring that paving meets required specifications. The economical cost of the Pavement Scanner also lends itself to use by contractors.

HA-60001.3F



HA-6000B.3F

Humboldt Pavement Scanner

Alternatively, mix calibrations can be determined using a few extracted cores. With the addition of the HA-6000.32 Calibration Kit, lab grade asphalt mix calibrations can be determined using gyratory compactor pucks. The calibration kit also provides a reference standard that can be used to demonstrate that the readings taken by the Pavement Scanner are accurate.

HA-6000.32 Calibration Kit

The second configuration of the Scan Head system would be the addition of the HA-6000.32 Calibration Kit. This calibration kit in conjunction with the Pavement Scanner adds the ability to provide direct density and compaction readings to the unit. This is accomplished by using the Scan Head and the Calibration Kit to calibrate the unit to a known calibration standard using test pucks from known asphalt mixes, as well as the included reference plate and dialectric reference puck for verification. The Calibration Kit includes a coupling cone for surface measurements, a reference plate and a dialectric reference puck. The addition of the calibration kit to the pavement scanner provides the user with the complete system, the pavement scanner and the pavement gauge with calibrated readings of density and compaction.

HA-6001.3F Pavement Gauge

The third configuration of the Scan Head system, HA-6001.3F, would be the combination of the scan head and the calibration kit for use as a Pavement Gauge, which would provide the ability to make spot measurements of asphalt surfaces like a nuclear gauge. This configuration would include the ability to calibrate the unit to a known calibration standard using test pucks from known asphalt mixes, as well as the included reference plate and dialectric reference puck for verification. This setup is for people who are only interested in a nuclear-free alternative to a nuclear gauge for providing direct density and compaction spot readings.

Data Visualization

The Humboldt Pavement Scanner produces two-dimensional maps of the work area rather than a handful of measurements at specific locations. These maps of dialectric constant readings, surface temperature and surface roughness provide much more information than the spot measurements of traditional density gauges. The scanner has an integrated GPS so that compaction and temperature data can be exported into Google maps and sent to any smart device (cell phone or tablet) for viewing. The ability to view information in map form provides much better coverage, fast and easy interpretation. And with the addition of the calibration kit, the scanner can provide the mapping function with direct readings of compaction and density.

A Better Alternative

The Pavement Scanner does not use any nuclear sources and does not emit dangerous radiation. Costs and risks associated with nuclear sources are eliminated. No more nuclear safety training classes. No more source licensing headaches. The pavement scanner has been designed for high reliability and to be easy to use. All cabling has been eliminated to improve ease of use, and end common problems associated with connectors and cables.

The entire system can be stored and transported to the site in a single, rugged shipping case.

Tablet Computer Kit— HA-6200

Required, but purchased separately

Includes mounting hardware and pre-installed software. Dell Latitude 7212, Rugged 11.6" FHD TouchScreen - Intel Core i5-7300U, 256GB SSD, 16GB RAM, GPS, 2 Webcam, Windows 10 Professional, Wi-fi, Bluetooth.

Specifications
2GHz, bi-static radar antenna
Non-contacting IR temperature sensor
Requires the use of a Tablet Computer Kit (purchased separately, see below)
WiFi connection between sensor and tablet for cableless operation
Durable construction with IP65 ingress protection
Positioning system includes wireless odometer, GPS and optional inertial measurements
Provides continuous real-time pavement density and temperature measurements
Generate maps of pavement density and temperature
Calibrate the unit using gyratory pucks or cores.
Rechargeable 4400mAh LiFePO4 battery for up to 6 hours continuous operation Unit comes with spare battery and integral charging station located in case.
Shipping dimensions: 36" x 28" x 20" (91.4 x 71.1 x 50.8cm)
Weight: 99 lb (45kg)

Testing Equipment for Construction Materials
HUMBOLDT

Humboldt Mfg. Co.
www.humboldtmfg.com
875 Tollgate Road
Elgin, Illinois 60123 U.S.A.

U.S.A. Toll Free: 1.800.544.7220
Voice: 1.708.456.6300
Fax: 1.708.456.0137
email: hmc@humboldtmfg.com