



HUMBOLDT

Asphalt Content/ Binder Ignition Furnace



F85930-33



AY1087X1

Key Features:

- Asphalt content of bituminous paving mixtures is accurate to 0.11%
- Accommodates samples up to 5000g

Operating Features:

- **Automatic Mode:** endpoint is detected and the software ends the test, prints the results, and beeps until STOP is pressed to unlock the door (in accordance with AMRL specifications)
- **Manual Mode:** endpoint is detected and the furnace begins to beep but continues to test until STOP is pressed to unlock the door, then and results print
- Furnace software automatically compensates for weight change due to sample and basket assembly temperature change
- Compensation is computed for each sample load tested (i.e., a fixed number is not assigned to a given range of load sizes)
- Positive or negative correction factors are accepted for use with mixes containing hydrated lime
- Endpoint within 0.01% of the sample weight is automatically detected
- Sample stability is reached once the endpoint criterion is met for three consecutive minutes during the test

- Endpoint sensitivity is adjustable from 0.01% to 0.5%
- Software computes test results as calibrated asphalt content per total weight of HMA sample or bitumen ratio per weight of dry aggregate
- 24-hour/7-day timer can be programmed to preheat the furnace
- RS-232 port provides a data interface with a PC for graphical data analysis

Savings and Convenience:

- Larger sample testing reduces total samples needed for testing each day, reducing labor and costs
- Ignition method reduces testing time when compared to solvent extraction: a 1200 to 1800g asphalt sample can be tested in 30 to 45 min.
- Internal scale monitors sample weight throughout the process, saving technician time and increasing productivity, as samples need not be removed and weighed
- Standard 30A electrical service is used (50A service costs more to install and operate)
- Modular design of refractory embedded heating elements provides extended service life and inexpensive, easy replacement

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Safety:

- No exposure to harmful solvents
- Automatic door-lock prevents door opening during critical test time, protecting the operator and ensuring test integrity
- High-temperature afterburner is used with a proprietary ceramic filter to reduce ignition process emissions by up to 95%
- Independent laboratory study, conducted with the California Transportation Department in accordance with California EPA guidelines, showed emissions from the furnace during the ignition test were within EPA parameters
- A laboratory hygiene study, conducted in accordance with OSHA guidelines, proved the system poses no health threats during proper use

AY1087X1 Accessory Package Includes:

- 4 Baskets
- 2 Trays
- 2 Covers
- 1 Handle
- 1 Cooling cage
- 1 Insulated plate
- 1 Pair of gloves
- 1 Face shield
- 4 Rolls of printer tape
- 1 Balance calibration plate
- 1 Anderol oil
CE-approved

Note: NCAT Furnaces are not supplied with power cords and must be hard-wired directly to a suitable electrical supply or supplied with a cord and plug by the user.

The asphalt content furnace (NCAT Oven) automatically determines the asphalt content of paving mixtures. Developed by NCAT, the National Center for Asphalt Technology, this furnace is an environmentally friendly and cost-effective method for the accurate determination of asphalt content. It eliminates the cost and safety concerns of using solvent and solvent disposal plagued by other methods.

This ignition method reduces testing time compared to solvent testing methods and features an internal electronic balance that automatically monitors sample weight throughout the ignition process and determines the endpoint, saving valuable technician time and increasing productivity.

To operate, the furnace is pre-heated to the default set-point temperature of 538°C (1,000°F) while an asphalt sample is weighed, divided into two screened baskets, and placed into the asphalt content furnace chamber. The sample weight is entered along with a mixed design calibration factor, and the test is started with the push of a button. At completion, the system automatically ends the test and prints the results.

Once the test is initiated, the furnace door remains locked until test completion ensuring operator safety and test integrity during critical burn-off steps. During operations, volatiles are further oxidized in a high-temperature afterburner using a patented ceramic filter, which is heated to 650°C (1,202°F), reducing overall emissions by 95%. The NCAT Furnace can also be operated in manual mode. In this mode the furnace will beep when the endpoint is detected, however, it will continue the test sequence until the operator presses "stop" to unlock the door and print the results.

The ignition furnace automatically compensates for weight change due to temperature changes and correction factors can be entered to accommodate unique mix characteristics. Endpoint detection of the test cycle can be user-programmed for a weight loss between 0.01% and 0.5% for three consecutive readings. Test results are computed as asphalt content per total weight of sample, or bitumen ratio per weight of dry aggregate to an accuracy of $\pm 0.11\%$. A 24-hour/7 day timing function can be programmed to preheat the furnace at any time of day. The modular, refractory embedded heating elements have an extended service life and are easy to replace. An RS-232 port provides a data interface with a personal computer for graphical data analysis.

F85930-33:

Content/Binder Ignition Furnace w/ Accessory Package,
240V 50/60Hz, 20 amp

F85938

Content/Binder Ignition Furnace w/ Accessory Package,
208V 60Hz, 23 amp

F85930-33X

Content/Binder Ignition Furnace (furnace only),
240V 50/60Hz, 20 amp

F85938X

Content/Binder Ignition Furnace (furnace only),
208V 60Hz, 23 amp



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