



## Blaine Apparatus Series – Manual and Fully-Automatic Digital Options

### Description:

The Blaine Apparatus is used to determine the fineness of cement (and other powdery products) in terms of specific surface in  $\text{cm}^2/\text{g}$ , according to test standard EN 196-6 and ASTM C204.

The unit comes equipped with **Color LCD 7" touch screen** interface for data introduction and test results.

The automatic flow regulation of compressor allows the system to **operate in any atmospheric pressure conditions**. The system is designed to eliminate all human error factors. The system offers a detachable protective screen, made in polycarbonate, with stainless steel frame.



### Features:

- Time resolution: 0.01 s.
- Temperature resolution: 0.1°C.
- **4 LED photodiodes** for an accurate liquid detection and level adjustment.
- Back-light for visual monitoring.
- Real time displaying of temperature, constant K, passing time and other parameters.
- Up to 5 reference cements as standards in each testing methods EN 196-6 or ASTM C 204.
- Up to 20 different types of cement can be memorized.
- Up to 1000 complete data test can be memorized in a nonvolatile memory.
- USB 2.0 communication for memorized data export i.e. to Excel.
- Multilanguage: English, Spanish or French (others on demand).

### Specifications

Power supply: Single-phase 110-240 V + Ground ~ 50 / 60 Hz

Power consumption: < 15 W

Dimensions: 270 x 400 x 410 (h) mm

Weight approx: 13.5 kg

### Standard Configurations

Blaine cell made in stainless steel, with plunger and perforated disc. Comprising certification of the volume of the Blaine cell. Performed with instruments traceable to international standards.

### **Includes:**

**Calibration with NIST standard Portland cement and certificate issued by our calibration laboratory.**



## Technical Specifications:

Automatic Blaine Apparatus System	
Screen	Color LCD 5,7" touch screen
Level detectors	Precision photodiodes for detecting upper and lower levels and additional safety level detector. To in-crease accuracy, comprises backlight in red by means of a LED.
Time resolution	0.01 s
Isolation	Detachable protective screen, made in polycarbonate, with stainless steel frame
Temperature resolution	0.1 °C
Manometric liquid	Light mineral oil with optimal viscosity. Non-toxic (safety datasheet is comprised)
Rise of fluid	Automatic compression pump Compression avoids the risk of liquid get into the pump
Predefined testing methods	On-screen wizard to perform the tests, including specific protocols for conducting the test according to EN 196-6 or ASTM C 204. The wizard calculates automatically the weight of cement to test according to the measured density, desired porosity and verified volume (cement bed) of the Blaine cell.
Test development	Real time displaying of temperature, constant K, passing time and other parameters
Calibration standards	Up to 5 reference cements as standards in each testing methods EN 196-6 or ASTM C 204
Cement types	Up to 20 different types of cement can be memorized. (more cements on request) Independent calculation methods for each cement type
Blaine cells	Up to 5 Blaine cells can be selected for calculations. User can change and memorize the cement bed volume of all his Blaine cells
Test data storage	Up to 1000 complete data test can be memorized in a non-volatile memory. When 1000 tests are performed, the equipment shows a calibration advice warning.
PC link	USB 2.0 output. Allows to export the memorized data to a Windows Excel file.
Selectable Languages	Spanish, English and French (others on request)
Weight	30 lbs / 13.5 kg
Dimensions	10.6 x 15.75 x 16.15" / 270 x 400 x 410 mm (width x depth x height)
Power supply	115V / 60 Hz / 1Ph or 230V / 50 Hz / 1 Ph
Visual alarms	The computer displays a warning if the temperature measured by the probe is outside the range imposed by the Testing Standard. The temperature sensor is adjustable to match with an external certified thermometer. (requires pas-sword)

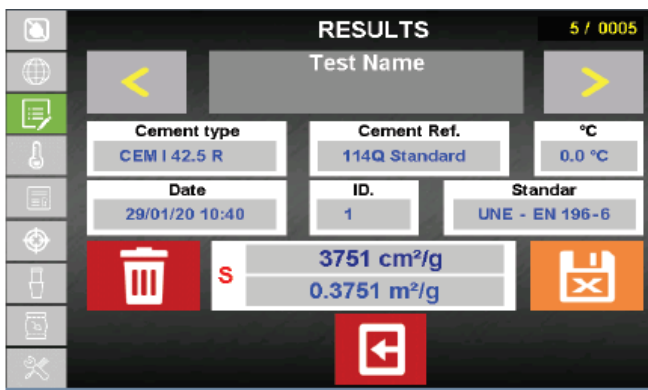


## Advance Software for Automatic Blaine Apparatus with Intuitive Interface

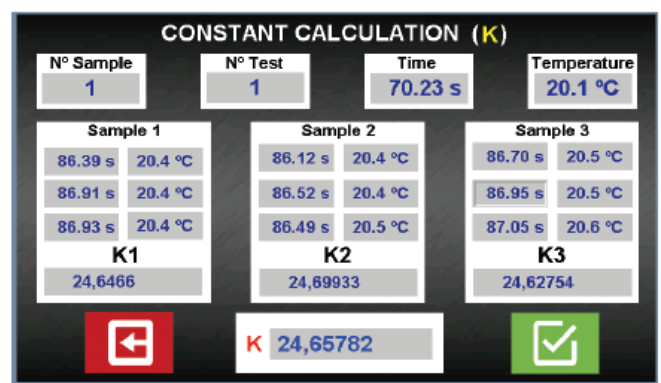
The BlaineGen Plus incorporates an updated interface which provides the user with an improved experience and the following benefits:

- **Simplicity and intuitivity**, thanks to the new design of the buttons and menus which provides the user a faster operation and quick access to all functions.
- **Modern design**, ergonomic and attractive.
- **Display of menus and results**, thanks to the new 7" screen with dust and splash resistance.

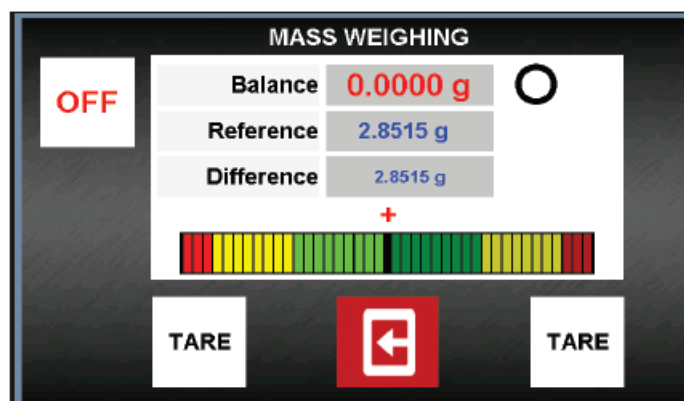
### Result Screen



### K Constant



### Direct Reading of the Mass by Analytical Balance





### Minimum Computer Requirements:

- Dual core processor: 2,00 GHz
- RAM Memory: 4 GB
- Hard Disk: 75 GB
- Windows 10
- USB 2.0 ports
- 1x Ethernet port (if the computer is going to be network connected)

### Software Benefits

This software automates the acquisition of data from tests stored in the Automatic Blaine System, management of database thereof and reporting with data obtained from them.

- Easy acquisition of results and test parameters.
- Unlimited results storage.
- Friendly test management: user can filter and categorize according to user criteria.
- Automatic report generation (i.e. .pdf or printing formats).
- Possibility of communication with other commercial applications and laboratory management tools.

### Acquisition and Performance Management

WinPerm64 software application shows clearly and simply all sample information and the results of each test.

WinPerm64: Sample data

Test name: BEFFEST 4  
 MB: Mikro 1  
 Standard: UNC - D1 196-6  
 Test date: 21-02-2012  
 Volume: 1.8105 cm<sup>3</sup>

Current under test: Test density: 3.15 g/cm<sup>3</sup>, Test porosity: 0.5 cm<sup>3</sup>

Reference cement: Test density: 3.15 g/cm<sup>3</sup>, Test porosity: 0.5 cm<sup>3</sup>, b: 1, K: 18.711

ID	Standard	Test name	MB	Test date	Test density	Test porosity	Volume	Surface	Total	Time	Tempera	Sample #1 Test #1 Surface	Sample #1 Test #2 Surface	Sample #1 Test #3 Surface	Sample #1 Test #1 Time	Sample #1 Test #2 Time	Sample #1 Test #3 Time
1	UNC - D1 196-6	BEFFEST 1	Mikro 1	24/11/2009	3.15	0.5	1.8105	3812.5	74.225	18.0	3011	3002	3014	74.17	74.21	73.55	74.25
1	UNC - D1 196-6	BEFFEST 2	Mikro 1	24/11/2009	3.15	0.5	1.8105	3805.25	74.2625	17.6	3008	3010	3009	73.72	74.39	73.91	74.36
1	UNC - D1 196-6	BEFFEST 3	Mikro 1	24/11/2009	3.15	0.5	1.8105	3807.25	74.2675	17.5	3006	3012	3005	73.87	73.59	74.44	74.29
1	UNC - D1 196-6	BEFFEST 4	Mikro 1	24/11/2009	3.15	0.5	1.8105	3802.5	74.2125	17.4	3004	3013	3007	74.74	73.87	74.74	74.14
1	UNC - D1 196-6	BEFFEST 5	Mikro 1	24/11/2009	3.15	0.5	1.8105	3798.25	74.2075	17.4	3004	3007	3002	73.63	73.76	73.88	73.30
1	UNC - D1 196-6	BEFFEST 6	Mikro 1	24/11/2009	3.15	0.5	1.8105	3797.5	74.205	17.5	3006	3006	3007	73.59	73.69	73.27	73.29
1	UNC - D1 196-6	BEFFEST 7	Mikro 1	24/11/2009	3.15	0.5	1.8105	3795.25	74.2025	17.6	3007	3001	3004	73.19	73.25	73.35	73.38
1	UNC - D1 196-6	BEFFEST 8	Mikro 1	24/11/2009	3.15	0.5	1.8105	3798.75	74.2038	17.6	3007	3004	3009	72.88	73.4	73.47	73.62
1	UNC - D1 196-6	BEFFEST 9	Mikro 1	24/11/2009	3.15	0.5	1.8105	3779.75	74.2075	17.4	3005	3004	3006	73.23	73.67	73.44	73.58
1	UNC - D1 196-6	BEFFEST 10	Mikro 1	24/11/2009	3.15	0.5	1.8105	3795.5	74.2105	17.6	3004	3007	3009	73.16	73.16	73.38	73.30
1	UNC - D1 196-6	BEFFEST 11	Mikro 1	24/11/2009	3.15	0.5	1.8105	3770.75	74.201	17.4	3006	3009	3005	72.78	73.94	73.8	72.45
1	UNC - D1 196-6	BEFFEST 12	Mikro 1	24/11/2009	3.15	0.5	1.8105	3790.75	74.213	17.6	3002	3004	3001	71.42	73.17	72.32	71.01
1	UNC - D1 196-6	BEFFEST 13	Mikro 1	24/11/2009	3.15	0.5	1.8105	3719.75	74.20875	14.9	3011	3004	3008	69.63	70.26	70.21	70.21
1	UNC - D1 196-6	BEFFEST 14	Mikro 1	24/11/2009	3.15	0.5	1.8105	3736.75	74.2048	14.8	3029	3026	3026	70.48	70.42	70.4	70.55
1	UNC - D1 196-6	BEFFEST 15	Mikro 1	24/11/2009	3.15	0.5	1.8105	3739.5	74.20775	16.1	3041	3034	3040	70.87	71.03	70.72	70.79

Data of samples

WinPerm64: Sample data

Time: Test #1: 73.37, Test #2: 73.38, Average: 73.38

Sample #1: 17.5, Test #1: 17.5, Average: 17.5

Sample #2: 17.4, Test #2: 17.4, Average: 17.4

Sample #3: 0, Test #3: 0, Average: 0

Temperature: 17.5 °C

Surface: Test #1: 3006, Test #2: 3002, Average: 3004

Sample #1: 3006, Test #1: 3002, Average: 3004

Sample #2: 3004, Test #2: 3009, Average: 3006

Sample #3: 0, Test #3: 0, Average: 0

Surface: 3007.5 cm<sup>2</sup>

ID	Standard	Test name	MB	Test date	Test density	Test porosity	Volume	Surface	Total	Time	Tempera	Sample #1 Test #1 Surface	Sample #1 Test #2 Surface	Sample #1 Test #3 Surface	Sample #1 Test #1 Time	Sample #1 Test #2 Time	Sample #1 Test #3 Time
1	UNC - D1 196-6	BEFFEST 1	Mikro 1	24/11/2009	3.15	0.5	1.8105	3812.5	74.225	18.0	3011	3002	3014	74.17	74.21	73.55	74.25
1	UNC - D1 196-6	BEFFEST 2	Mikro 1	24/11/2009	3.15	0.5	1.8105	3805.25	74.2625	17.6	3008	3010	3009	73.72	74.39	73.91	74.36
1	UNC - D1 196-6	BEFFEST 3	Mikro 1	24/11/2009	3.15	0.5	1.8105	3807.25	74.2675	17.5	3006	3012	3005	73.87	73.59	74.44	74.29
1	UNC - D1 196-6	BEFFEST 4	Mikro 1	24/11/2009	3.15	0.5	1.8105	3802.5	74.2125	17.4	3004	3013	3007	74.74	73.87	74.74	74.14
1	UNC - D1 196-6	BEFFEST 5	Mikro 1	24/11/2009	3.15	0.5	1.8105	3798.25	74.2075	17.4	3004	3007	3002	73.63	73.76	73.88	73.30
1	UNC - D1 196-6	BEFFEST 6	Mikro 1	24/11/2009	3.15	0.5	1.8105	3797.5	74.205	17.5	3006	3006	3007	73.59	73.69	73.27	73.29
1	UNC - D1 196-6	BEFFEST 7	Mikro 1	24/11/2009	3.15	0.5	1.8105	3795.25	74.2025	17.6	3007	3001	3004	73.19	73.25	73.35	73.38
1	UNC - D1 196-6	BEFFEST 8	Mikro 1	24/11/2009	3.15	0.5	1.8105	3798.75	74.2038	17.6	3007	3004	3009	72.88	73.4	73.47	73.62
1	UNC - D1 196-6	BEFFEST 9	Mikro 1	24/11/2009	3.15	0.5	1.8105	3779.75	74.2075	17.4	3005	3004	3006	73.23	73.67	73.44	73.58
1	UNC - D1 196-6	BEFFEST 10	Mikro 1	24/11/2009	3.15	0.5	1.8105	3795.5	74.2105	17.6	3004	3007	3009	73.16	73.16	73.38	73.30
1	UNC - D1 196-6	BEFFEST 11	Mikro 1	24/11/2009	3.15	0.5	1.8105	3770.75	74.201	17.4	3006	3009	3005	72.78	73.94	73.8	72.45
1	UNC - D1 196-6	BEFFEST 12	Mikro 1	24/11/2009	3.15	0.5	1.8105	3790.75	74.213	17.6	3002	3004	3001	71.42	73.17	72.32	71.01
1	UNC - D1 196-6	BEFFEST 13	Mikro 1	24/11/2009	3.15	0.5	1.8105	3719.75	74.20875	14.9	3011	3004	3008	69.63	70.26	70.21	70.21
1	UNC - D1 196-6	BEFFEST 14	Mikro 1	24/11/2009	3.15	0.5	1.8105	3736.75	74.2048	14.8	3029	3026	3026	70.48	70.42	70.4	70.55
1	UNC - D1 196-6	BEFFEST 15	Mikro 1	24/11/2009	3.15	0.5	1.8105	3739.5	74.20775	16.1	3041	3034	3040	70.87	71.03	70.72	70.79


Results



## Report Generation:

WinPerm64 enables the automatic generation of test reports and can be created from default templates (which vary depending on the standard) or through others that can be customized.

## Accessories and Spare Parts:

<b>NG-BlaineSoft</b>	<b>BaineGen Plus Premium Software</b>	
	Allows Data Acquisition from BlaineGen Plus as well as Storage, Management and Reporting based on the Test Data. Minimum Requirements of the Customer Computer: Dual Core Processor: 2 GHz, RAM Memory: 2 GB, Hard Drive: 75 GB, Windows XP (service pack 3), Vista or Windows 7, USB 2.0 Port, 1x Ethernet Port (if the computer will be network connected)	
<b>NG-DM-A300-3000</b>	<b>Electronic Solid Rubber &amp; Plastic Densimeter Systems – Specific Gravity Tester</b>	
	<b>Maximum Weight Range</b> – 0.001 to 3000g <b>Density Precision</b> - 0.001g/cm <sup>3</sup> - 0.0002g/cm <sup>3</sup> <b>Measurable Parameters</b> - Density, Specific gravity, Mixing ratio, Volume <b>Density range</b> - >1 and <1 <b>Value showed</b> - Density, Volume, % <b>Components:</b> Germany and Japan	
<b>NG-210-104094</b>	<b>Set of 1 manometric Blaine tube, U shaped. Spare part for BlaineGen-Plus</b>	
<b>NG-510-100015</b>	<b>Verification of volume of the Blaine cell Performed by Certified Metrology Laboratory.</b>	
<b>NG-IMPSP</b>	<b>Compression pump, spare part for BlaineGen-Plus</b>	
<b>NG-210-101160</b>	<b>Reference Portland Cement. Standard Material Reference 46H. Box of 10 units With known specific surface, allows to calibrate the Blaine apparatus. Includes NIST certificate.</b>	
<b>NG-210-100464</b>	<b>Filter paper discs. Ø 12,7 mm. For Blaine. Box of 1000.</b>	
<b>NG-210-100154</b>	<b>Manometric liquid. 100 ml flask.</b>	

## Lead Time

3-8 Weeks Depending on when the PO is placed