

BYK-mac i

Total color impression of effect finishes

The appearance of effect finishes is influenced by different viewing angles and viewing conditions. Apart from a light-dark flop and color shift special sparkling effects can be created. The BYK-mac i spectrophotometer is unique as it measures both multangle color and flake characterization in one portable device.

- Traditional 5-angle color measurement: 15° / 25° / 45° / 75° / 110°
- Additional color measurement behind the gloss for color travel of interference pigments: -15°
- Sparkle and graininess measurement for flake characterization



Ergonomic design and easy operation

The shape of the instrument is designed to ensure easy handling and true portability. Due to its intuitive menu quality control of metallic finishes has never been easier.

- Menu guided operation according to your own sampling procedure
- Designated buttons for standard and sample readings
- Scroll wheel to select menu functions
- Large color display - easy-to-read inside and outside
- Storage of up to 1000 readings in selectable memories
- smart-chart software for professional analysis, documentation and data management



Hood	D65/10° 3/3			
	$\Delta L^* p$	$\Delta a^* p$	$\Delta b^* p$	ΔE_{pD}
-15°	0.05	0.11	-0.03	0.12
15°	0.05	0.08	-0.06	0.11
25°	-0.14	0.05	-0.11	0.19
45°	-0.22	0.02	0.13	0.26
75°	-0.13	0.15	0.32	0.38
110°	0.12	0.18	0.34	0.40
			ΔE_t	0.27
Light Silver				
Model 1				

Reliable readings at any time

In order to guarantee stable positioning, the BYK-mac i is equipped with trigger pins on the bottom plate of the instrument. If the pins do not have contact with the surface, an error message will be displayed. This ensures reproducible results on test panels as well as curved parts ($r > 500$ mm).

Additionally, the surface temperature is measured and saved with each measurement.



Accurate results and low maintenance

The BYK-mac i spectrophotometer uses a light source with longterm stability and patented illumination control which provides superior accuracy and low maintenance for many years.

- Stable, long-term calibration - needed only every three months
- Temperature independent measurement results between 10 - 40 °C - without calibration
- Excellent agreement between instruments allowing usage of digital standards among the supply chain
- 10 year warranty on the light source - no lamp changes needed



Quantification of Fluorescent Light

The BYK-mac i spectrophotometer is equipped with additional sensors to detect fluorescent light excited in the visible range. The Intensity Emission value quantifies the fluorescent light and can be used as a preliminary indicator for light fastness.



Always ready

The instrument is operated with a rechargeable battery pack (Li-Ion). The docking station automatically charges the battery pack in the instrument as well as a spare pack located in the docking station. Optionally the instrument can be operated with 4 standard mignon alkaline or rechargeable batteries.

The docking station also transfers measured data to a PC.



Plug-in WiFi Adapter

Do you want to be as flexible as possible when transferring data? The new plug-in WiFi adapter is an optional accessory that can be easily attached to the interface port of the BYK-mac i. Setting-up your own network within a blink of an eye guarantees flawless data transfer which is not tied down by a cable anymore.



Sample Holder for precise positioning on panels

To guarantee repeatable sample placement and reliable measurement results, two different sample holders are available.

Holder for non-magnetic panels

The holder is equipped with a mask to fit the aperture of the BYK-mac i 23 mm and a tilting handle to fix the instrument in a vertical position.

- Flexible sample presentation: The sample table can be used for flat panels as well as for centering fandeck stripes with a positioning tool.
- Minimum sample size: 70 x 60 mm
- Maximum distance between measurement spot and back rail: 50 mm



Holder for magnetic panels

The smart-clamp holder is equipped with a closable fixture to keep the BYK-mac i in a horizontal position. On the opposite side a handle with a magnetic disc firmly holds magnetic substrates such as typical paint panels. The disc is rotatable, snapping in at quarterly positions. Thus, multiple readings from different directions on the same sample spot can be done – reduced operator influence guaranteed!

- Minimum sample size: 50 x 50 mm
- Maximum distance between measurement spot and bottom plate: 130 mm



Measurement of effect finishes on small or curved parts

Special effect finishes are used in many applications to create new color impressions pronouncing the design of a product. Objects like mobile phone housings, bicycles or window handles are very small or curved. They require a color instrument with small aperture and repeatable sample placement. BYK-mac i with 12 mm aperture guarantees repeatable results even on such products.



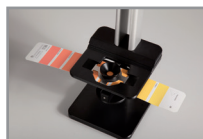
Sample Holder for small parts

The holder is equipped with a mask to fit the aperture of the BYK-mac i 12 mm and a tilting handle to fix the instrument. Therefore, repeatable sample placement and reliable measurement results are guaranteed.

- Application specific presentation tools: Flexible sample table, sample pin and a positioning tool for centering samples
- Minimum sample size: \varnothing 30 mm
- Maximum distance between measurement spot and back rail: 50 mm



Sample pin to measure e.g. distance sensor covers



Positioning tool to center sample

Standards

ASTM D 2244, E 308,
E 1164, E 2194
DIN 5033, 5036, 6174,
DIN 6175
DIN EN ISO 11664
SAE J 1545



Catalog Number	7030	7034	7031	7035
Short Description	BYK-mac i 23 mm	BYK-mac i 12 mm	BYK-mac i Sensor 23 mm	BYK-mac i 12 mm Sensor
Measuring Area	23 mm diameter	12 mm diameter	23 mm diameter	12 mm diameter
Software	with software		without software	
Color Geometry	45° illumination; -15°, 15°, 25°, 45°, 75°, 110° aspecular viewing			
Spectral Range Colorimetric	400 - 700 nm, 10 nm resolution			
Measurement Range	0 to 600 % reflectance			
Repeatability Color	0.01 ΔE^* (10 consecutive measurements on white)			
Reproducibility Color	Grey BCRA II tiles: avg. $\Delta E^* < 0.10$ Chromatic BCRA II tiles: avg. $\Delta E^* < 0.25$			
Color Scales	ΔE^* ; ΔE CMC; ΔE 94; ΔE 2000; ΔE 99; ΔE DIN6175-2019 and customer specific scales			
Color Indices	Flop, Int-Em			
Illuminants	A; C; D50; D65; F2; F7; F11; F12; CIE 015:2018 LED illuminants			
Observer	2°; 10°			
Effect Geometry	15°, 45°, 75° and diffused illumination; perpendicular viewing with camera			
Effect Parameters	ΔS ; ΔS_a ; ΔS_i ; ΔG			
Repeatability Effect	S_a / S_i : 5% or $> 0.50 / G = \pm 0.05$			
Reproducibility Effect	S_a / S_i : 10% or $> 1.00 / G = \pm 0.15$			
Measuring time	< 6 seconds			
Memory	1000 standards / samples			
Display	2.7 in. TFT color LCD display			
Languages	DE, EN, ES, FR, IT, JA, RU, ZH			
Power supply	Rechargeable battery pack or 4 mignon AA batteries (alkaline or rechargeable)			
Dimensions: L x W x H	21.8 x 8.1 x 14.7 cm			
	8.6 x 3.2 x 5.8 in			
Weight	1.3 kg			
	2.9 lb			
Operating temperature	10 - 42°C			
	50 - 110 °F			
Relative humidity	up to 85%, 35° C (95° F); non-condensing			

Delivery Content

Multi-angle spectrophotometer, Black calibration standard (7044), White calibration standard with certificate, Color checking tile, Effect checking tile, Docking station with USB cable for data transfer (6360), Instrument interface cable for online data transfer (6413), Protective cap (6336), 2 light protection covers (6414), Seal replacement kit (6348), Cleaning set (6364), 2 rechargeable Li-ion battery packs (6359), Battery holder, 4x AA batteries, Software with 2 licenses for download: smart-lab Color (4862) or smart- process (4831), Short instructions, Carrying case, 1-day training

System Requirements

Operating system: Windows® 10 1607 or later
Hardware: i5 2.5 GHz; i9 recommended, or equivalent (x86 & x64 architecture only)
Memory: 16 GB RAM, 32 GB recommended
Free hard-disk capacity: 4 GB during installation
Monitor resolution: 1920 x 1080 pixel; 4K recommended
Interface: free USB-port

Catalog Number	Short Description	Delivery Content
7044	Black Standard BYK-mac i	
6336	Protective Cap, BYK-mac i 23 mm	
6399	Protective cap, BYK-mac i 12 mm	
6360	Docking Station, BYK-mac i	Docking station USB Interface Cable Charger 100 - 240 V self adapting
6337	USB Interface Cable for 6360, 6072-6075	
6413	Online Cable, BYK-mac i	
7052	WIFI Adapter BYK-mac i	
6359	Battery Pack, BYK-mac i	
6364	Cleaning Set, BYK-mac i	
6414	Light Protection Cover, BYK-mac i	
6348	Seal Replacement Kit, BYK-mac i	3 light protection rubber seals 8 rubber pin covers
4862	smart-lab Metallic	Software with 2 licenses for download
4831	smart-process	Software with 2 licenses for download
6897	Sample Holder BYK-mac i 23 mm	
7053	smart-clamp BYK-mac i	
6408	Sample holder BYK-mac i 12 mm	Sample Holder Flexible sample table Sample pin Positioning tool Short instructions