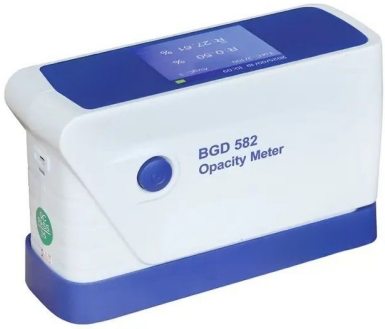
Opacity Meter 45°/0

BGD582

Product Description

The BGD 582-S Opacity Meter is our latest-generation instrument for measuring the hiding power of paints. It uses a 45°/0° optical geometry (45° annular uniform illumination, 0° reception) and complies with ISO 6504-3 and ASTM D2805, among other standards. The instrument measures the reflectance of a coating applied over black and white substrates and automatically calculates the contrast ratio (C = Rb/Rw) of the sample.



Why Opacity Matters

Opacity, or hiding power, is one of the most important properties of a paint. It determines how well a coating covers the colour and pattern of the substrate underneath. A paint with good hiding power achieves a uniform appearance in fewer coats, which saves material, labour and time on the job.

For paint manufacturers, opacity is a key quality and cost parameter. Titanium dioxide and other hiding pigments are among the most expensive raw materials in a formulation. Accurate measurement of hiding power helps formulators find the right balance between performance and cost, verify batch-to-batch consistency and support the coverage claims on the label, for example in m² per litre.

Visual assessment of opacity is subjective and difficult to reproduce. Instrumental measurement of the reflectance over black and white substrates gives objective, traceable figures that can be compared between laboratories, suppliers and customers, in line with international standards such as ISO 6504-3 and ASTM D2805.

Standards

- **EN ISO 2814:** Paints and varnishes – Comparison of contrast ratio (hiding power) of paints of the same type and colour
- **ISO 6504-3:2019:** Paints and varnishes – Determination of hiding power – Part 3: Determination of hiding power of paints for masonry, concrete and interior use
- **ASTM D2805-11(2023):** Standard Test Method for Hiding Power of Paints by Reflectometry
- **ASTM E97:** Standard Test Method for Directional Reflectance Factor, 45-deg 0-deg, of Opaque Specimens by Broad-

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Band Filter Reflectometry (withdrawn 1991)

- **DIN 55984:** Testing of pigments – Determination of a hiding power value of white and light grey media (Prüfung von Pigmenten; Bestimmung eines Deckvermögenswertes von weißen und hellgrauen Medien) (withdrawn)
- **BS 3900-D6:** Methods of test for paints – Optical tests on paint films – Determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate, using polyester film
- **BS 3900-D7:** Methods of test for paints – Optical tests on paint films – Determination of hiding power of white and light-coloured paints by the Kubelka-Munk method (superseded by BS EN ISO 6504-1)

Technical Specification

- Optical geometry: 45° annular illumination, 0° reception
- Light source: D65
- Observer angle: 10°
- Measurement aperture: Ø 8 mm
- Reflectance range: 0–200.00%
- Reflectance resolution: 0.01%
- Reflectance repeatability: ≤ 0.1%
- Zero drift: ≤ 0.1%/10 min
- Indication drift: ≤ 0.1%/3 min
- Power supply: rechargeable lithium battery (8 hours of continuous operation or 5,000 measurements)
- Dimensions: 150 × 50 × 75 mm
- Net weight: 300 g

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Main Technical Parameters

Ordering Information: BGD 582-S – Opacity Meter

Disclaimer

The information given in this sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this sheet or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this sheet is liable to modification from time to time in the light of experience and our policy of continuous product development