Novo-Gloss Trigloss Glossmeter

Used in accordance with :
ISO 2813, ASTM D523, ASTM D2457, DIN 67530, JIS Z 8741, ISO 7668

The Novo-Gloss 20/60/85° gloss meter is designed to meet the measurement criteria for most gloss measuring applications.

Small, lightweight and durable the instrument can be used in the most demanding environments. The high specifications, including statistical analysis, graphical analysis and software-free PC down load facility make it the ideal choice for general gloss measurements.

Features

- Fast measurement, on-board statistics with graphical trend analysis and reporting.
- Automatic calibration with tile validation
- Date and time stamped results
- Easy Batching - User definable batch names and batch sizes for quicker and more efficient reporting
- Software-free data transfer - USB connection, no software install required - PC & MAC compatible
- Direct data input via Bluetooth - Instantly transmit measured readings directly to programs such as Excel
- Auto-ranging, Measures Matt to Mirror Finish
- Compatible with all major international standards
- Extended two year warranty
- Calibrate to any standard
- Lifetime light source guarantee

Why measure Gloss?

Gloss is an aspect of the visual perception of objects that is as important as colour when considering the psychological impact of products on a consumer. It has been defined as 'The attribute of surfaces that causes them to have shiny or lustrous, metallic appearance.' The gloss of a surface can be greatly influenced by a number of factors, for example the smoothness achieved during polishing, the amount and type of coating applied or the quality of the substrate. Manufacturers design their products to have maximum appeal: highly reflective car body panels, gloss magazine covers or satin black designer furniture.

It is important therefore that gloss levels are achieved consistently on every product or across different batches of products. Gloss can also be a measure of the quality of the surface, for instance a drop in the gloss of a coated surface may indicate problems with its cure, leading to other failures such as poor adhesion or lack of protection for the coated surface. It is for these reasons that many manufacturing industries monitor the gloss of their products, from cars, printing and furniture to food, pharmaceuticals and consumer electronics.

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How is Gloss Measured

Gloss is measured by shining a known amount of light at a surface and quantifying the reflectance. The angle of the light and the method by which the reflectance is measured are determined by surface and also aspect of the surface appearance to be measured.

Which Angle should I use for my application

ISO 2813 and ASTM D523 (the most commonly used standards) describe three measurement angles to measure gloss across all surfaces.

Gloss is measured in gloss units (GU) and is traceable to reference standards held at BAM (Germany), NRC (Canada) or NPL (UK).

Universal Measurement Angle: 60°
The Novo-Gloss 60 is perfect for basic gloss measurement and is best suited for mid gloss surfaces (10-70GU @60°) All gloss levels can be measured using the standard measurement angle of 60°. This is used as the reference angle with the complimentary angles of 85° and 20° often used for low and high gloss levels respectively.

60° is referred to as the universal measurement angle and is the most commonly specified geometry in applications such as paints, coatings, plastics, automotive interiors and general manufacturing.

It can be used as a basic gloss assessment for any surface from matt surfaces to mirror finish polished metals. Small light and portable, with onboard statistics and the ability to download reading to Novo-Soft, the 60 degree instrument is perfect for factory, outdoor or laboratory applications.

Low Gloss: 85°
Whilst adequate for some applications, the 60 degree geometry has low measurement resolution at gloss levels < 10GU. This means that two matt surfaces which have visually different surfaces may have minimal differences in values when measured using this geometry. For improved resolution of low gloss a grazing angle of 85° is used to measure the surface. This angle is recommended for surfaces which measure less than 10GU when measured at 60º. This angle also has a larger measurement spot which will average out differences in the gloss of textured or slightly uneven surfaces.

For matt surfaces (< 10GU @60°) an instrument with the 85 degree geometry should be used 20/60/85° Trigloss or Rhopoint IQ 20/60/85°.

High Gloss: 20°
A limitation of the 60 Degree geometry is that it is has almost no sensitivity to surface effects such as haze and visible textures such as orange peel. When present these effects will reduce the visual quality of high gloss surfaces but will have little or no effect on measured 60 degree gloss values.

For high gloss surfaces (gloss >70 GU), an instrument that includes the 20 degrees angle should be specified- Novo-Gloss Dualgloss 20/60°, Novo-Gloss Trigloss 20/60/85°. The 20 degree geometry has limited sensitivity to reflection Haze.

The acute measurement angle of 20° gives improved resolution for high gloss surfaces. The 20° angle is more sensitive to haze effects that affect the appearance of a surface. To quantify haze, distinctness of image, reflected image quality and other surface texturing please consider the Rhopoint IQ.

Applications

Novo-Gloss Trigloss 20/60/85°

The Novo-Gloss Trigloss is perfect for the gloss measurement of matt to mirror gloss surfaces

60° is referred to as the universal measurement angle & is the most commonly specified geometry in applications such as paints, coatings, plastics, automotive interiors & general manufacturing. It can be used as a basic gloss assessment for any surface

20° is the angle selected for high gloss applications such as paints and coatings, polished metals as it gives an improved resolution for high gloss finishes. It is also more sensitive to haze effects that affect the appearance of a surface

85° is the recommended angle for low gloss finishes as it offers improved resolution of low gloss. This angle is recommended for surfaces which measure less than 10 GU when measured at 60º.

The instrument features onboard statistics and the ability to download reading to Novo-Soft

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Texturing

The Novo-Gloss Trigloss has limited ability to measure the effect of texturing on a surface. There are several factors that influence the gloss and appearance quality of a coating; the chemical composition of the coating / topcoat / varnish vehicle, the refractive index of this component largely determines how light is reflected from the surface.

The size and frequency of structures on the surface, these can be deliberate in the case of matting additives which scatter light, or unintentional and unwanted such as additive bloom, orange peel, reticulation etc.

Uneven substrates may cause texturing to the coating surface. For transparent coatings the reflective nature of the substrate is also important.

Metallic and Effect Pigments, the size, distribution and alignment of these larger size particles have an effect on the reflective characteristics of a coating.

By measuring Gloss, Haze and DOI, the Rhopoint IQ quantifies the visual impact of a product and the nature and frequency of textures on its surface.

Sample Applications

Paints and Coatings

Automotive

Printing Ink

Smart Phone, Tablet PC and Laptop Covers

Powder Coating

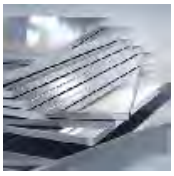
Automotive Coatings

Plastics Industry

Yacht Manufacturers

Automotive re-finish

Furniture



Metal Polishers

Polished Stone

Wood Coatings

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Gloss Angles and Applications

20˚	High gloss surfaces such as automotive paint finish, polished metals and plastics
60˚	Universal gloss measurement angle for all applications
85˚	Matt surfaces such as automotive interiors, architectural paints and wood finishes
20˚/60˚/85˚	Measure or calibrate all three angles simultaneously

Technical Specifications

- Resolution: 0.1GU
- Repeatability: 0.2GU
- Reproducibility: 0.5GU
- Measuring Range: 85°: 0 – 199 GU
60°: 0 – 1000 GU
20°: 0 – 2000 GU
- Memory: 1000 readings
- Power: Rechargeable lithium ion, 17+ hours operation
- Battery life: 10,000+ readings
- Recharge time: USB 4.5 hrs , mains charger 2.5 hrs
- Dimensions : 65 x 140 x 50 mm (H x W x D)
- Weight : 530g
- Languages : EN, FR, D, NL, ESP, IT, TK, CZ

Standards

- **ISO 2813** Paints and varnishes - Determination of specular gloss of non-metallic paint films at 20, 60 and 85°
- **ASTM D523** Standard Test Method for Specular Gloss
- **ASTM D2457** Standard Test Method for Specular Gloss of Plastic Films and Solid Plastics
- **DIN 67530** Reflectometers a means for gloss assessment of plane surfaces of paint coatings and plastics
- **JIS Z 8741** Specular glossiness - Method of measurement
- **ISO 7668** Anodized aluminium and aluminium alloys - Measurement of specular reflectance and specular gloss at angles of 20 degrees, 45 degrees, 60 degrees or 85 degrees

Order Code

Part Number	*Model*	*Description*	*Angles*
NGT0/60/85	Novo-Gloss Trigloss	Triple Angle Gloss Meter	20 / 60 / 85

Shipping List

Each instrument is supplied with :

- a BAM Traceable Calibration Tile with Protective Case
- Calibration Tile Cleaning Kit
- Quick Start Guide
- USB Data cable
- Spare Light Source
- CD with Novo-Soft™ Software
- Screwdriver
- Full instruction manual in pdf format
- Instructional Video
- Instrument Carrying Case
- Internal Battery
- Mains Charger

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