

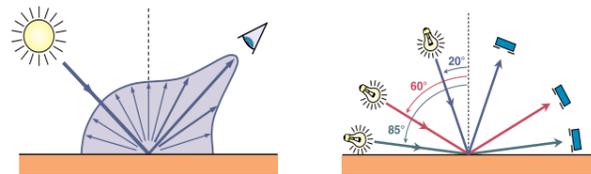
2.0 GLOSS

General

Gloss is an important attribute of surface appearance, it changes our perception of colours and shapes and influences our overall visual experience. Gloss affects objects by the interaction of incident light with the surface and observer and depends on variables such as illumination angle, surface profile, physical characteristics and observation conditions. For many products, gloss can play an important part in their visual acceptability and for quality purposes should be monitored with precision instrumentation particularly when it varies through the process.

Gloss measurement

Unified methods for the measurement of gloss are described in ASTM, DIN and ISO standards. When a defined light source illuminates a surface, it is partly scattered and partly reflected in the equal but opposite angle. This specular reflection determines the surface's gloss level. The intensity of the specular reflection, which depends on the material and the illumination angle, is measured under specified conditions. Results are expressed in Gloss Units (GU), which is a calibrated scaling based on the refractive index of a black glass having a specular reflectance of 100 Gloss Units (GU) at the specified angle. All non-metallic materials e.g. paints or plastics can have a value related to this level, while for highly reflective metallic surfaces e.g. plated components and some raw materials can reach 2000 GU (mirror gloss).



Multi purpose geometries

Glossmeters

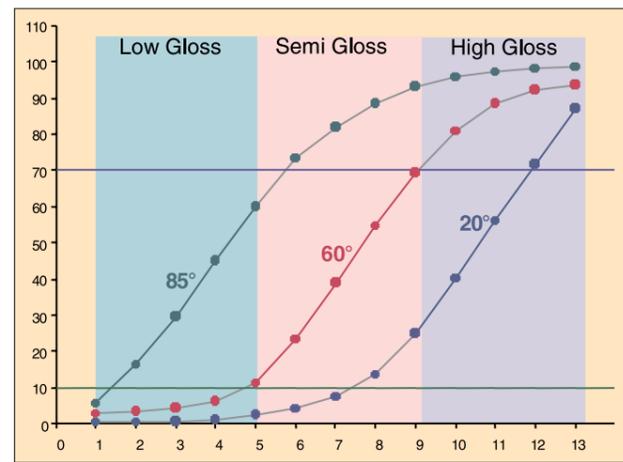
Our range of instruments offer a variety of measurement geometries each applicable to different gloss measurement applications or materials. Generally three geometries cover the majority of industrial applications:

- 20° for high gloss surfaces
- 60° for medium gloss surfaces
- 85° for low gloss or matt surfaces

The 60° geometry is widely used due to its medium gloss coverage. However, it has been experimentally shown that when readings taken at 60° exceed 70 GU, then a change to 20° is recommended for better differentiation. Equally when readings drop below 10 GU the geometry should be changed to 85° for the same reason.

For some specific industrial applications such as the measurement of ceramics, plastics and paper, special 45° or 75° geometries are also available.

All Sheen glossmeters include certified calibration standards, traceable to BAM, the German National Standards authority for gloss measurement.



Gloss differentiation

Table A

Gloss instruments selection chart

Geometry	20° High gloss	60° Medium gloss	85° Low gloss	45° Medium gloss	75° Low gloss
Application		General purposes		Ceramic Foil	Paper Vinyl
ASTM C346	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ASTM C584	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ASTM D523	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ASTM D2457	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AS 1580 (602.2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BS 3900 D5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DIN 67530	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DIN EN ISO 2813	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JIS Z 8741	<input checked="" type="checkbox"/>				
MFT 30064	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TAPPI T480	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN ISO 7668 (mirror)*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

* Suitable also for mirror gloss, please check instrument & version specific working ranges

Glossmaster

This brand new generation of truly portable glossmeters have been designed mainly with the user in mind. They not only offer top performance, greater versatility and ease of use but also include enhanced features.

With the most powerful built-in data processing capability, including difference calculations and pass-fail functions, they make Quality Control easier than ever before with true compliance to all International Standards.

The menu-guided operation is simply controlled and activated by a jog-dial button. Data can be stored in the large capacity memory and output to Excel™ for professional detailed reports using the included Easy-link software. The instruments high precision measurements and reliable automatic calibration contribute to strengthen your quality standards.

All these performances are contained in a compact, sturdy and light weight unit.



4 models are available:

- Tri-Glossmaster 20-60-85°: 3 angles in one instrument
- Glossmaster single-angle: 20, 60, or 85°.

Tri-Glossmaster 20-60-85°

This versatile glossmeter covers a wide range of applications from matt to high gloss measurements conforming to International Standards. Samples can be measured separately at each angle or at 2 or 3 angles simultaneously and effectively processed using the powerful built-in software.

Features

- Menu guided operation, activated by the jog-dial button
- Reading: 20°-60°-85° separately, or simultaneously 20+60°, 60+85°, 20+60+85°
- Difference & Pass-Fail reading (memory for 50 references)
- Continuous reading with actual value, average, min., max.
- Statistics:
 - adjustable number of readings/sample, from 2 to 99
 - selectable display with actual value, average, std. deviation, min., max., range, difference, pass/fail
- Memory: 999 readings, saved with individual name, date & time and recall function
- Automatic calibration check
- Protective holder with integrated calibration standard (including traceable certificate)
- RS 232 output to PC, including Easy-link software
- Standard package: Instrument & calibration holder (certified), Easy-link software & PC cable, Manual, Battery, Case

Performance

- Auto-range: 0-2000 GU (20°)
0-1000 GU (60°)
0-160 GU (85°)
- Suitable for non-metal and metal surfaces
- Repeatability: 0.2 GU (0-99.9 GU) – 0.2% (100-2000 GU)
- Reproducibility: 0.5 GU (0-99.9 GU) – 0.5% (100-2000 GU)
- Measuring time: 0.5 sec./each geometry
- Measuring area, mm: 10 x 10 (20°), 9 x 15 (60°), 5 x 38 (85°)
- Language: English, Spanish, German, French, Italian, Japanese
- Auto shut-off: adjustable 10 to 99 sec.
- Power: 1 x 1.5V Mignon Alkaline battery for 10,000 readings, or external power supply.

