

# micro-gloss

## The new intelligence in gloss measurement

The micro-gloss has been the unsurpassed industry standard in gloss measurement for many years. It is the only glossmeter combining highest accuracy, ease-of-use and multiple functionality – essential for today`s testing requirements.

## Brilliant design and easy-to-use

Ergonomics and easy handling were the main focus for the design. The micro-gloss is not too large and not too small – it feels just right in your hand. The scroll wheel operation, multilingual display and easy to navigate menu make gloss measurement easier than ever before.

## Auto diagnosis: Standard OK – Calibration OK

Accurate readings require reliable calibration. The gloss meter and calibration holder make a perfect couple: the calibration standard is always protected in the holder of the micro-gloss.

Unique is the intelligent auto diagnosis of the gloss meter which guarantees long-term stable calibration and tells you when to calibrate. It even checks whether the standard is clean. Operator friendly. Safe.



wireless data transfer

## Gloss of paint or metal – no problem

With the micro-gloss gloss meter you can measure any material – paints, plastics or highly reflective metals. Its expanded measurement range of up to 2000 gloss units guarantees always reliable results – according to international standards.

## Highest accuracy guaranteed

The long-term stable LED light source of the glossmeter provides not only highly repeatable results for many years, but also will never burn out. We even give a 10 year warranty on the lamp life.

## Various measurement modes for efficient QC

Different tasks require different tools. The easy to turn scroll wheel of the glossmeter quickly shows you all needed functions – even without a PC:

Check uniformity on the sample?

→ Continuous mode. With Min. and Max.

Compare the gloss difference to the target?

→ Difference mode. With Pass/Fail.

Average several readings per panel?

→ Statistic mode. With all statistical data.

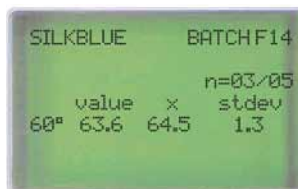
Number of readings per sample are selectable.

Or just quickly check the gloss of a few samples?

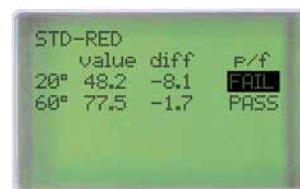
The Basic mode is your tool.



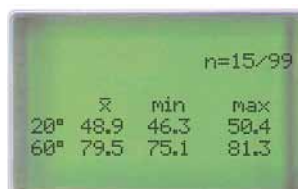
Basic mode



Statistic mode



Difference mode

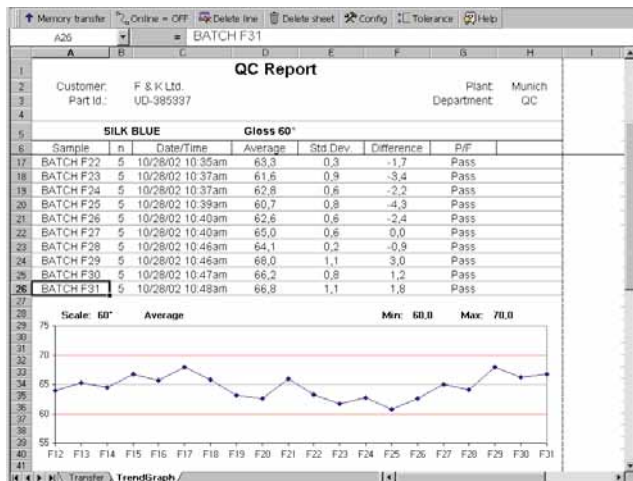


Continuous mode

## Fast and professional documentation

Every measurement series can be saved in the glossmeter under its own name. Input of sample names can be done quickly with the scroll wheel.

The included easy-link software allows direct data transfer to Excel® with your results immediately shown in a professional QC-report.



**New!**

## Data transfer with cable or wireless



Now data can be sent to your PC via USB-interface or *Bluetooth*® wireless technology. The wireless connection transfers data from the glossmeter within a distance of 10 meters (33 feet).

*Bluetooth*® is a registered trademark owned by Bluetooth SIG, Inc.

# micro-TRI-gloss

## See changes under the right angle – always and right away

### High – medium – low gloss: What is your application?

micro-TRI-gloss combines 20°, 60°, 85° in one glossmeter – as handy as the one angle unit. Having three geometries in one unit allows you to be in compliance with international standards and to quickly recognize quality variations.



All selected angles measure at the same location and the results are displayed instantly – including Statistics, Difference or Pass/Fail. The micro-TRI-gloss has all functions of the new glossmeter generation readily at hand.

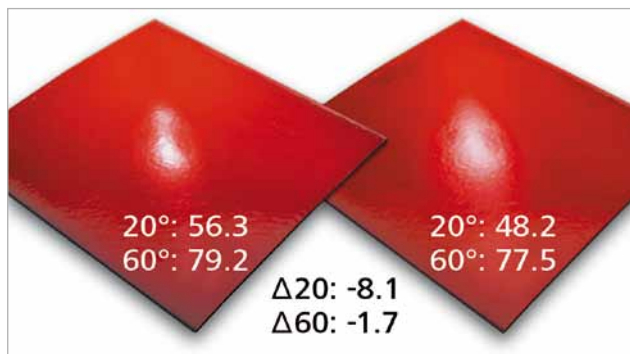


## The micro-gloss family: Overview of functions

<b>Long-term calibration</b>	with automatic check of the calibration standard
<b>Autorange</b>	0-2000 GU (20°) 0-1000 GU (60°) 0-160 GU (85°)
<b>Measuring time</b>	0.5 seconds / geometry
<b>Statistics</b>	number of readings per sample are selectable from 2 to 99
<b>Difference and Pass/Fail</b>	memory for 50 standards with limits
<b>Continuous</b>	actual value, average, min., max.
<b>Display in 3 columns selectable</b>	actual value, average, std. dev., min., max., range, difference, pass/fail
<b>micro-TRI-gloss</b>	simultaneous display 2 or 3 geometries
<b>Memory</b>	999 readings with date and time, with recall function
<b>Interface and Software</b>	USB and <i>Bluetooth</i> ®; easy-link (included)
<b>Menu guidance switchable</b>	English, French, German, Italian, Japanese, Polish, Portuguese, Russian, Spanish
<b>Auto shut-off time</b>	selectable 10 – 99 seconds
<b>Power supply</b>	one 1.5V AA Alkaline Battery 10,000 readings or via USB-port
<b>Operating temperature</b>	15 – 40 °C (60 – 104 °F)
<b>Relative humidity</b>	up to 85 %, non-condensing



In order to obtain differences clearly over the whole range from matte to high gloss, three measurement geometries were specified in international glossmeter standards. Each geometry is optimized for a specific gloss range.



The different gloss of these two samples is more clearly shown in the 20° readings.



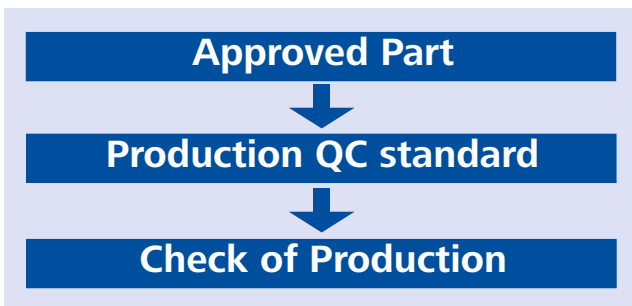
**New!**

## Glossmeters for toughest QC requirements

Automotive interior design is becoming more and more important in purchasing decision. A variety of materials, from leather to plastics, are used and need to be harmonized. Additionally, surface structures vary from large grains to fine stipples, usually with very low gloss. In order to guarantee a uniform look among the various parts very tight tolerances are specified.

**Typical Tolerances:  
Gloss 60° < 5 gloss units  
± 0.3 to 0.5 gloss units**

As a starting point master standard plaques are usually manufactured with flat and several grained areas. These are sent to parts suppliers as their target to achieve with actual production parts. As the master plaques and final parts are often made of different materials the suppliers work closely with the car maker. In the end final approval is given on a production part. This production part now becomes the standard for the supplier.



Instead of working with absolute gloss numbers, supplier production QC needs to be based on the signed-off part where only the differences are checked with the glossmeter. This procedure eliminates the reproducibility error as gloss is measured relatively on the same type of material and same surface.



### micro-gloss S family

Only testing instruments with excellent precision will be able to objectively control production. The new micro-gloss S family offers improved performance for 60° gloss in the critical low gloss range (0-10 GU). This excellent accuracy can be guaranteed due to our patented calibration procedure in the production of the glossmeters.

- For any material: paint, plastics or highly reflective metals
- Long-term stable calibration and automatic check of calibration standard
- Temperature stable data
- 10 year warranty on the light source
- Difference and Pass/Fail
- Statistics and Memory (999 readings)
- Easy menu operation with scroll wheel
- easy-link software for direct transfer to Excel®
- Data transfer from the glossmeter to the PC via USB or *Bluetooth*® wireless technology



#### Technical Specifications

<b>Measurement range</b>	0 – 10 GU	10 – 100 GU	100 – 2000 GU
<b>Repeatability</b>	± 0.1 GU	± 0.2 GU	± 0.2 %
<b>Reproducibility</b>	± 0.2 GU	± 0.5 GU	± 0.5 %



# micro-gloss 45°/75°

## Gloss Measurement for Specific Applications

Specific applications require specific measuring angles. micro-gloss 45° and 75° are now available in the new gloss meter design with its proven benefits.

- Ergonomic design and userfriendly menu operation with scroll wheel.
- Automatic calibration with smart "Autodiagnosis" to check the condition of the calibration standard.
- Long-term stable LED light source provides highly repeatable results.
- 10 year warranty on the light source.



micro-gloss 45°: Specialized glossmeter for ceramics, plastics and plastic films.



micro-gloss 75°: Specialized glossmeter for paper, paperboard and structured plastic e.g. vinyl siding.

## Multiple functionality for any task – and easy to use

- Continuous mode for uniformity evaluation over large areas.
- Difference and Pass/Fail for inspection and QC.
- Statistics with average, standard deviation, min/max and range. Large memory for 999 readings.
- Professional documentation and direct transfer to Excel® with included easy-link software.
- Data transfer via USB or Bluetooth® wireless technology.



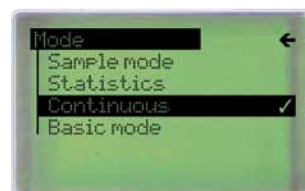
### Standards

ASTM	C 346, D 2457, D 3679
JIS	Z8741
TAPPI	T480

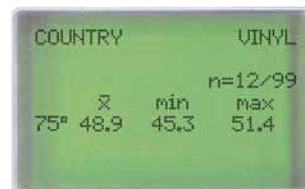
### Technical Specifications

Geometry	Application	Measurement Range
45°	Ceramic, Plastic, Plastic Films	0 – 180 GU
75°	Paper, Vinyl Siding	0 – 140 GU

select mode...



and measure



**Certified**

For Preventive Maintenance and Certification Services see page 267 – 270.

**Standards**

<b>ISO</b>	2813, 7668
<b>ASTM</b>	D 523, D 2457
<b>DIN</b>	67530
<b>JIS</b>	28741

**Ordering Information**

Cat. No.	Description
<b>AG-4440</b>	micro-gloss 20°
<b>AG-4442</b>	micro-gloss 60°
<b>AG-4444</b>	micro-gloss 85°
<b>AG-4446</b>	micro-TRI-gloss
<b>AG-4450</b>	micro-gloss 60° S
<b>AG-4452</b>	micro-TRI-gloss S
<b>AG-4454</b>	micro-gloss 45°
<b>AG-4456</b>	micro-gloss 75°
<b>SE-4440</b>	Extended Warranty one year additional

**Comes complete with:**

Glossmeter  
 Holder with integrated calibration tile  
 Traceable certificate  
 Software easy-link  
 USB-cable  
 Operating manual  
 Battery  
 Carrying case

**Free** 1x preventive maintenance service during warranty period

**Technical Specifications**

Geometry	Application	Measuring Area
20°	high gloss	10 x 10 mm (0.4 x 0.4 in)
60°	semi gloss	9 x 15 mm (0.35 x 0.6 in)
85°	low gloss	5 x 38 mm (0.2 x 1.5 in)
20°, 60°, 85°	universal	see single angle
60°	semi gloss	9 x 15 mm (0.35 x 0.6 in)
20°, 60°, 85°	universal	see single angle
45°	Ceramic, Plastic, Film	9 x 13 mm (0.35 x 0.5 in)
75°	Paper, Vinyl Siding	7 x 24 mm (0.3 x 0.95 in)

<b>Measurement range</b> <sup>1</sup>	0 – 100 GU	100 – 2000 GU
<b>Repeatability</b> <sup>2</sup>	± 0.2 GU	± 0.2 %
<b>Reproducibility</b> <sup>2</sup>	± 0.5 GU	± 0.5 %
<b>Spectral sensitivity</b>	CIE 1931 standard observer for illuminant CIE-C	
<b>Interface</b>	USB and <i>Bluetooth</i> <sup>®</sup> wireless technology	
<b>Dimensions</b>	155 x 73 x 48 mm (6.1 x 2.9 x 1.9 in)	
<b>Weight</b>	0.4 kg (0.9 lbs)	

<sup>1</sup> for 45° and 75° glossmeters see page 23

<sup>2</sup> for S-Type glossmeters see page 22

**Ordering Information**

Cat. No.	Description
<b>AG-4405</b>	USB-cable
<b>AG-4545</b>	BYKWARE easy-link

**Accessories**

For data transfer from the glossmeter to a PC, USB-A  
 Software for direct data transfer and documentation in Excel<sup>®</sup> (see page 26)

**Save!****Special Introductory Offer**

– valid only for a limited time.

AG-4442 micro-gloss 60°  
 AG-4446 micro-TRI-gloss

**Save!**

Trade-in any gloss meter (all brands accepted) and receive a discount toward the purchase of a new micro-gloss. Please call us for additional information.

## Calibration Holder

Replacement holder with high gloss calibration tile.

### Ordering Information

Cat. No.	Description
AG-4441	Calibration holder 20°
AG-4443	Calibration holder 60°
AG-4445	Calibration holder 85°
AG-4447	Calibration holder TRI
AG-4455	Calibration holder 45°
AG-4457	Calibration holder 75°

#### Comes complete with:

Holder with integrated calibration tile and traceable certificate



## Checking Standard

In order to control the performance and linearity of the glossmeter it is recommended to use a checking standard periodically. The control interval is dependent on the usage conditions of the glossmeter.

The gloss tiles are built into an aluminum track that the glossmeter fits into to guarantee accurate and repeatable measurements. The included certificate is traceable to international institutes.

**Certified** For Certification Service and Preventive Maintenance see pages 267 – 270.

### Ordering Information

Cat. No.	Description
AG-4422	Checking standard 20°
AG-4462	Checking standard 60°
AG-4464	Special checking standard 60° S
AG-4487	Checking standard 85°
AG-4434	Checking standard TRI
AG-4438	Special checking standard TRI S
AG-4433	Checking standard mirror
AG-4458	Checking standard 45°
AG-4459	Checking standard 75°

#### comes complete with:

Checking standard in aluminum track with traceable certificate

### Technical Specifications

Dimensions	
170 x 103 x 17 mm (6.7 x 4.1 x 0.7 in)	High and semi gloss tile
170 x 103 x 17 mm (6.7 x 4.1 x 0.7 in)	High and semi gloss tile
170 x 103 x 17 mm (6.7 x 4.1 x 0.7 in)	High gloss and low gloss tile, approx. 5 GU at 60°
170 x 103 x 17 mm (6.7 x 4.1 x 0.7 in)	High and semi gloss tile
170 x 103 x 26 mm (6.7 x 4.1 x 1 in)	High gloss and 3 semi gloss tiles 20, 60, 85°
170 x 103 x 26 mm (6.7 x 4.1 x 1 in)	High gloss and 3 semi gloss tiles 20, 60, 85°, 60° tile approx. 5 GU
170 x 103 x 26 mm (6.7 x 4.1 x 1 in)	High gloss and 3 semi gloss tiles 20, 60, 85°, highly reflective
170 x 103 x 17 mm (6.7 x 4.1 x 0.7 in)	High and semi gloss tile
170 x 103 x 17 mm (6.7 x 4.1 x 0.7 in)	High and semi gloss tile