HORIBA

Gloss Checker

IG-330

Measurement at Amazing High Accuracy. Available at Incredibly Low Price.

Only HORIBA, with its proven track record for developing innovative high-performance gloss meters, could offer the economical IG-330 gloss checker.

By defying conventional wisdom, HORIBA has once again led the way to produce a gloss checker that is not only incredibly inexpensive but also incredibly easy to use. Light, compact, and incorporating "one-touch" calibration, it's as simple as a pocket calculator. And it can be used at 20° in addition to the standard 60° measuring angle. The IG-330 brings gloss measurement one step closer to perfection.

The gloss checker that transforms ambiguous gloss into hard numbers.

Amazingly low price

The incredibly low price was made possible by integrating leading-edge technology and HORIBA's unique measurement technology in a broad range of fields, and by simplifying the production system and promoting mass production.

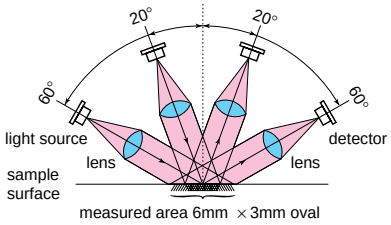
Incredibly easy to operate

Features "one-touch" calibration with no need to warm up. By just touching the measuring part to the sample, gloss value is displayed on a real-time basis. No technical skills are needed, so it is very easy to operate.

60°/20° measuring angle selection function

In addition to the standard 60° measuring angle, a 20° measuring angle is available for measuring high gloss surfaces (gloss exceeds 70).

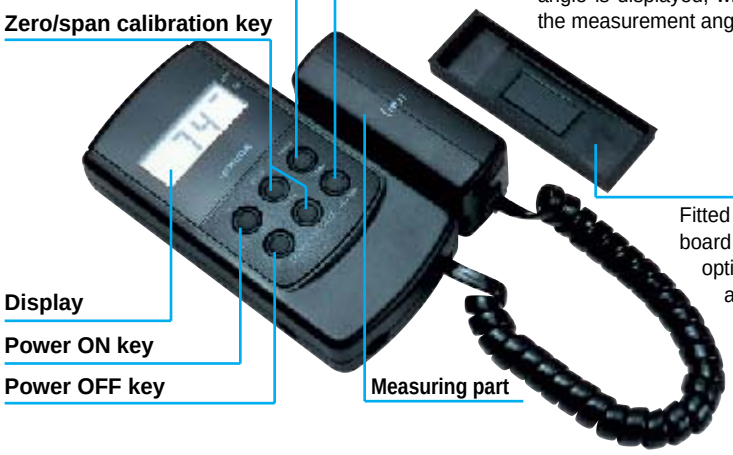
■ Optical system



Hold key
When pressed once, the display is held.

Zero/span calibration key

60°/20° selection key
When pressed once, the measurement angle is displayed; when pressed again, the measurement angle is changed.



Protective cap
Fitted with the calibration board inside, protets the optical system besides allowing calibration.

Display

Power ON key

Power OFF key

Measuring part

Light-weight, compact body with emphasis on efficiency

The compact, light weight body is easy to carry, whether around the production line or out of doors. The measurement part and the display part can be separated, further increasing work efficiency and safety.

Ideal for a broad variety of applications

- *Checking or diagnosing coated surfaces*
- *Checking building materials and finish*
- *Quality control of paint or ink*
- *Inspecting printed matter*

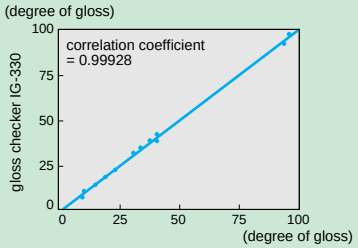
● What is glossiness?

Gloss is a quantity that expresses the degree of reflection when light hits a surface. It is detemined by comparing the strength of reflected light from the area being measured with that from the standard surface.

● What are the standards for gloss?

At an incident angle of 60° on a gloss surface with a refractive index of 1.567, 10% reflectance equals a gloss value of 100, and at an incident angle of 20°, about 5% reflectance is 100, according to JIS.

Example of measurement of ceramic tile gloss



The above graph shows the results of measuring ceramic tiles, widely used as the standard surface for the medium-gloss range(secondary standard surface) because of the stability of surface conditions. The IG-330 produces extremely precise values.

Specifications

Optical system	incident angle 60°-Reception angle 60° incident angle 20°-Reception angle 20°
Measurement area	6mm × 3mm oval
Light source	LED(wavelength 890 mm)
Light receiving part	SPD(silicone photodiode)
Measuring range	0-100(resolution 1)
Display range	0-199
Reproducibility	±5% FS ± 1 digit
Power source	A3 dry-cell battery × 4
Continued use time	15 hours or more
Dimensions	**Main body:** 140(D) × 75(W) × 34(H)mm 5.5(D) × 3.0(W) × 1.3(H)in **Optical system:** 88(D) × 30(W) × 45(H)mm 3.5(D) × 1.2(W) × 1.8(H)in
Functions	"One-touch" calibration, Auto power off, Display hold

Please read the operation manual before using this product to assure safe and proper handling of the product.

- The contents of this catalog are subject to change without prior notice, and without any subsequent liability to this company.
- The color of the actual products may differ from the color pictured in this catalog due to printing limitations.

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HORIBA

Explore the future

GLOSS CHECKER

IG-320

JQA-E-90039 (Head Office/Factory) ISO 14001 Award of Certification
Horiba received these standards for excellence from the International Organization for Standardization.
ISO 9001 JQA-0298

Standardize Quality Measurement With Numerical Gloss Values-A Breakthrough in Appearance Control

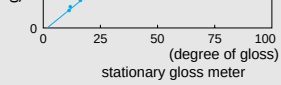
Standardize Quality Measurement With Numerical G

Along with color, gloss is one of the most important factors in expressing the surface characteristics of substances. In the past, gloss was gauged by eye, and was thus a very subjective parameter. The IG-320 Gloss Checker measure gloss and display the results as numerical data, eliminating subjectivity and helping you guarantee uniform production quality and enhance product reliability. The IG-320 encapsulate high perfomance, along with easy measurement and calibration all in a compact body. It is easy to hold and operate with one hand, and no trouble to carry around. The IG-320 Gloss Checker -gloss measurement whoever you are, wherever you are, whenever you want it.

■High-precision measurement

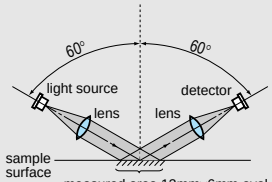
Near infrared rays, almost impervious to ambient light or the effect of different colors, are pulse-emitted through a lens as parallel light and strike the measuring surface. The light reflected from the sample surface converges in the detector which has a slit in the front so that only the light reflected from the direction of the sample surface is received. Detector output is band-amplified by a preamplifier, rectified, and converted into degree of gloss value for display as gloss value. The IG-320 offers stable and high-precision measurement with ±0.5% full scale reproducibility.

Example of measurement of ceramic tile gloss
(degree of gloss)

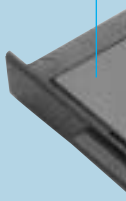


The above graph shows the results of measuring ceramic tiles, widely used as the standard surface for the medium-gloss range (secondary standard surface) because of the stability of surface conditions. The IG-320 produces extremely precise values.

Optical system



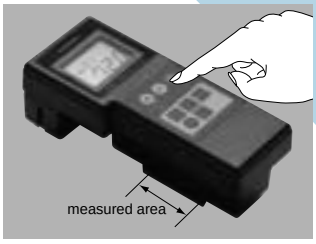
Protective cap (with standard surface for calibration)



1 Input
Turn the power on (by pressing the [ON] key).

2 Calibrate
Attach the protective cap. While holding down the [CAL] key, press the [DATA IN] key to calibrate automatically.

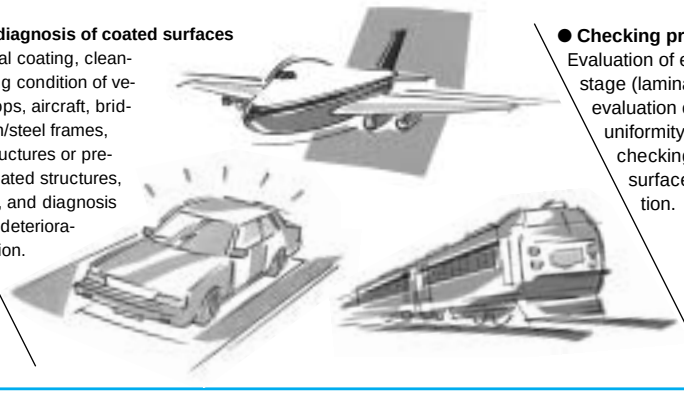
3 Measure and store data
Remove the protective cap and place the checker on the surface of the material to be measured. The degree of gloss value will appear on the display. Press the [DATA IN] key to store the value. Up to 99 measurement values can be stored.



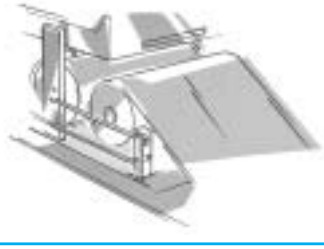
■Versatile applications

● **Quality control of paint and ink**
For quality testing, outdoor exposure testing, hue adjustment or luster testing.

● **Check and diagnosis of coated surfaces**
Check external coating, cleaning or waxing condition of vehicles, shops, aircraft, bridges, iron/steel frames, and structures or prefabricated structures, etc., and diagnosis of deterioration.



● **Checking printed matter**
Evaluation of embellishing properties in varnishing stage (lamination, endless processing, etc.); evaluation of time-induced change and uniformity of surface after drying process; checking paper surface condition.



loss Values-A Breakthrough in Appearance Control

Soft case (included)
Convenient for carrying and protecting the Gloss Checker.

4 **View data**
Press the [MEAS/MEM] key to view stored data.

5 **Computing average values**
Press the [AVERAGE] key to compute and display the average value of all the data stored at that time. Up to 99 average values can be stored. Note that when the average value is computed, all the stored measurement data are deleted.

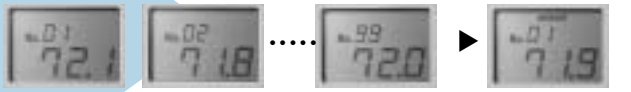
6 **Viewing average values**
To view average values, press the [MEAS/MEM] key. Select the number using the [UP] and [DOWN] keys.

7 **Deleting data and/or average values**
Press the [CLEAR] key and the [DATA IN] key at the same time to delete all stored data and average values.

■Data memory and computation of average values

Because the degree of gloss varies depending on the measuring point, multi-point measurement is necessary for highest accuracy. In the past, each measurement was written down and the average value computed. To end such inconvenience, the IG-320 features data memory and computation functions. Up to 99 (max.) measurement values can be input and stored. The stored data can be viewed or average values can be computed, stored and displayed at the press of a key. The IG-320 is then ready to store up to 99 more readings. These values can be averaged and automatically stored in the next memory position by pressing the "Average" key. A total of 99 average values (max.) can be stored and viewed at will. The IG-320 Gloss Checker does all the work to make measurement faster and easier for you.

Display of data item No.01 | Display of data item No.02 | Display of data item No.99 | Display of average of all 99 data items



■Easy to operate

No warm-up is needed. And calibration of the IG-320 is automatic. By simply putting the optics onto the sample surface, gloss value is displayed in real-time. No special skills are required.

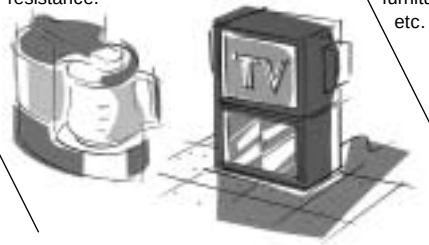
■Compact portable configuration

The supremely portable IG-320 has a compact configuration and weigh only 400 grams (0.88 pounds), yet it is superbly durable. It is powered by a standard 9V battery, which is easy to replace. A battery alarm tells you when it is time to change the battery.

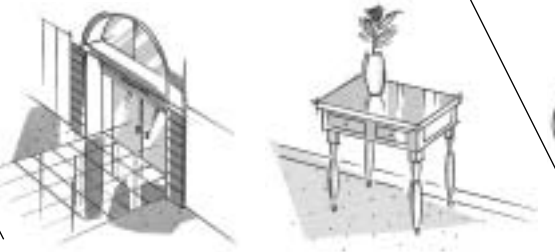
■Affordable price

The IG-320 comes with a soft carrying case and lens cloth as standard accessories, all at a very economical price. These handy gloss meters will prove invaluable both in the lab and in the field.

● **Checking external appearance of plastic molding**
For checking external appearance of molded resin products and evaluating weather resistance.



● **Checking building materials and finish**
Inspection of external appearance, completed product test and site finish test in production stage of enamel, sash, floor materials, stone materials, wood products, furniture, etc.

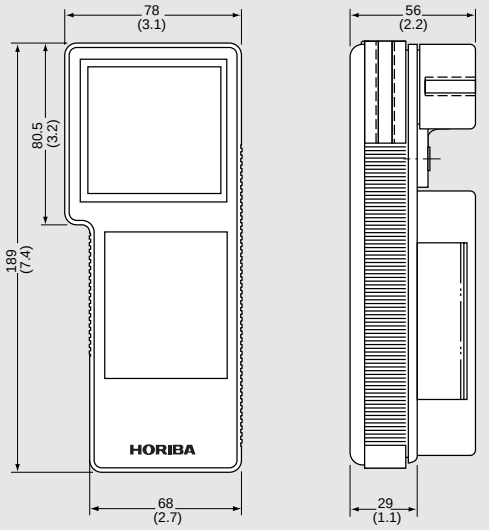


● **Other uses**
For checking quality and external appearance of film, tape, rubber, leather, etc.

SPECIFICATIONS

	IG-320
Optical system	Angle of incidence 60°, converging angle 60°
Measuring area	12mm × 6mm oval
Light source	LED (wavelength: 880nm)
Detector	SPD (silicon photo-diode)
Measuring range	0~100.0
Display range	0~199.0 (resolution:0.1)
Reproducibility	±0.5% F.S. Within ± 1 digit
Power source	S-006P dry battery(9VDC) for operation, CR-2025 lithium battery (3VDC) for memory
Continued use	At least 15 hours
Ambient conditions	0~40°C
Dimensions	78(W) × 189(h) × 56(d)mm 3.1(W) × 7.4(h) × 2.2(d) in
Weight	Approx. 400g, 0.88 lbs(with battery)
Additional functions	Display hold
	Battery alarm
	Overrange display
	Automatic calibration
	Built-in data memory (max.99)
	Computation of averages
	Automatic power cut-off
	Keystroke confirming tone

Dimensional Outlines Unit:mm(in)



Gloss Standards

Gloss is a quantity that expresses the degree of reflection when light hits a surface. It is determined by comparing the strength of reflected light from the area being measured with that from the standard surface. International Standards (ISO) and the American Society for Testing and Materials (ASTM) use the surface of a sheet of glass with a refractive index of 1.567 as the standard for gloss and set a figure of 100 for its gloss value. Since such glass is chemically unstable, however, the IG-320 use polished black glass with a gloss value of around 90 as the standard surface for calibration purposes and set the figure of 90 for this degree of gloss value.

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