

Gloss Checker

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Models IG-310 & IG-330

Previously gloss level values were only roughly measured by the naked eye. The gloss checker has been developed to measure gloss level values much more accurately. When the naked eye is used, the gloss level becomes very subjective. When utilizing these gloss checkers, a much higher level of accuracy is obtained .

Common uses:

Some of the common uses for a gloss checker involve the quality control of many types of surfaces, painted or unpainted, checking of building materials and finish, external appearances of finished surfaces and diagnosis of coated surfaces. Gloss checkers are especially useful in measuring before and after results. The gloss checkers will not work on areas that are curved or irregular.

How Gloss Checkers Work:

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 a degree of gloss value for display as gloss value.

How to Use

IG-310

This unit is powered by a single 9 volt battery. Remove the battery compartment by loosening the fastening screw with a coin or like object. Remove the old battery and insert a new battery checking that the polarity is correct. Reattach battery compartment by securely snapping in the catch and fastening the screw.

Prior to beginning any measurement , the IG-310 should be calibrated. You may also need to recalibrate at different times during your measurement process. You must calibrate the unit when the unit is not used for a long time, when the battery was replaced, and when using the unit in a very cold location (0 -10 degrees Centigrade) or a very warm location (30 to 40 degrees Centigrade).

To calibrate the IG-310, remove the protective cap and turn the power on. Hold the unit in the air and observe the indication on the display. If the display does not indicate zero, adjust the Zero control with a coin or similar object until the display reads zero. Hold the unit as not to touch the measurement section. Replace the protective cap on the unit, aligning it with the catch. Observe the display and adjust the span control with a coin or a similar object until the display shows the calibration value. This value is printed on the protective cap. If the standard plate should become contaminated, wipe it with a supplied lens cloth or other soft, dry cloth. Remove the protective cap and you are now ready to begin measurements.



Using the IG-310:

Place the unit on the area to be measured. The gloss value will be shown on a display. To freeze the displayed value, press the hold button. The display will be held until the hold button is released. Continue moving the gloss meter to check on overall area. An example would be to check at least three spots on a standard floor tile to measure the polished area. If the readings are similar, you now know that the polish on that portion of the floor is even. For a fair reading you should check a few of the surrounding tiles. Once you are done taking your measurements press the power off button and prepare the unit for storage. Check for moisture, and any contamination on the bottom section, the lens and the protective cap. If any of these parts are dirty, wipe it with a soft cloth. Strong contamination can be removed by moistening the cloth with a light, neutral detergent solution. DO NOT use excessive force and DO NOT use any solvents or abrasive cleaners. After the unit is cleaned, store in the soft case provided. If the unit is to be stored for long periods of time with out any use, remove the battery.

How gloss is evaluated by the IG-310:

Gloss as measured by the IG-310 is a numerical value which expresses the intensity of the luminous reflection on the surface of an object. The value is determined by comparing the value with a standard plate to the intensity of reflected light on the measured object. According to JIS, a glass plate with a refractive index of 1.567 is defined as having a gloss of 100 units. Due to the chemical imbalance of glass with a refractive index of 1.567, the IG-310 uses a polished black glass with a gloss rating of about 90 as a standard reference surface for calibration. The IG-310 uses a measurement angle of 60 degrees -60 degrees which makes it suitable for a wide range of applications. The surfaces that are being measured must be flat. Curved surfaces or surfaces with considerable irregularities may not have reliable results when measured.

IG-310 Specifications:

Measurement range:	0 to 1000, resolution 1
Optical system:	Incidence angle 60 degrees - Viewing angle 60 degrees
Measurement Area:	12 x 6 mm, elliptical
Display:	2-1/2 digit LCD, Range 0-199
Measurement precision:	Plus/Minus 2% of full - scale, (reproducibility) Plus/Minus 1 Digit
Power source:	9-V battery (6F22) Battery life more than 30 hours (Room temperature)
Warm up interval:	10 seconds from power on
Temperature range for use:	0 degrees to 40 degrees C (no dew formation)
Temperature for storage:	-10 degrees - 50 degrees C
Features:	Display hold Battery alarm (LO BAT)
Weight:	Approx. 370 g



IG-330

The IG330 is a gloss checker that features a detachable sensor unit along with other differences from the IG-310.

The major differences: Detachable sensor unit with curled cable
60 degree and 20 degree measurement
4 AA batteries
Smaller unit.

How to use

The IG-330 must also be calibrated prior to each use. Install the batteries correctly and connect the coiled cord between the sensor unit and the controller. Turn the gloss checker on and put the protective cap on the sensor unit. Place the sensor unit on a flat surface and press the center of the sensor lightly. This will start the calibration process by adjusting the unit sensitivity. The readout should now be blinking. Free the span key twice. The readout will still continue to blink. Remove the protective cap, pick up the sensor unit and hold it in the air. Press the zero key twice. The display should now read 0- and is now read for use. Please note: if the readout is blinking "AL", it does not mean that the gloss checker is "out of order". Please return to the beginning of the calibration process and start again. "AL" may blink up until the 0 key is pressed twice. Please continue as this is normal. Also, do not rush this procedure. Press each key firmly and slowly. Do not use a normal telephone cord as proper readings cannot be taken. Use only Manganese or Alkaline batteries. Do not use rechargeable batteries and do not mix old and new batteries together.

Once the unit is calibrated you are now ready to take measurements. Although the sensor is a detached unit, you must take care to make sure that you hold it flat to the surface of the material that you are measuring. Failure to do so will result in improper readings or no readings at all. Once you are ready, press lightly on the center of the sensor. The display should now give an accurate reading for gloss level.

As noted above, there are two angles of measurement in this unit. Use the 60 degree angle first. If the reading is greater than 70, switch to the 20 degree angle. This will allow a more accurate measurement in these high gloss ranges. The difference between the gloss levels becomes more difficult to detect at a 60 degree angle (compared to human eyes). The 20 degree angle is more sensible to surface conditions and the tilt of the sensor.

Again, as with the IG-310, you cannot obtain accurate reading if the surface being measured is irregular, etched or not flat.

IG-330 Specifications:

Measurable range:	0-100
Optical systems:	60 degree: 60 degree optical range 20 degree: 20 degree optical range
Measurable spot:	60 degree: Oval size of 6 mm x 3 mm 20 degree: Oval size of 4 mm x 3 mm
Display:	LCD for digital display in 2-1/2 digits range 0 -199
Repeatability:	Plus/Minus 5% of full scale Plus/Minus 1 digit
Power source:	4 AA batteries. 15 hours continuous operation R6P battery type at 25 degrees C ambient temp.
Warm up time:	10 seconds
Ambient temperature range:	10 -40 degrees C without condensation.
Features:	Hold mode in which reading blinks Measurement mode selection 60/20 degrees "AL" displayed for errors "LO BAT" displayed for low battery Automatic power off after 5 minutes with out use
Weight:	Approximately 350 g

When a gloss checker is used in the stone restoration industry, it becomes an useful tool. Designed to check gloss levels, it becomes a way of making a standard for polished stone. If used properly, either the IG-310 or the IG-330 will enhance your performance capability.