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## RHOPOINT Concrete Clarity Meter

-  DOI METER
-  HAZE METER
-  20/60° GLOSSMETER

Proud members of:



## QUANTIFY SURFACE QUALITY

The Rhopoint IQ Concrete Clarity Meter measures reflected image quality; it is the only hand held instrument that profiles *how* light is reflected from a surface. Glossmeters are usually used to measure the "shininess" of a surface but are not sensitive to common effects which reduce appearance quality.

**DISTINCTNESS OF IMAGE (DOI)** – A measure of how clearly a reflected image will appear in a reflective surface and is used to quantify effects such as orange peel and surface waviness.

*Orange peel dramatically reduces appearance quality without affecting gloss readings. The Rhopoint IQ Concrete Clarity Meter with DOI measurement can quantify the differences.*



Surface with poor DOI

*Image courtesy of Curviello Concrete*

*Haze is a common problem associated with coatings and polished materials. Surfaces with haze have a "milky" finish with a "shallow" reflected image. This important characteristic is directly measured with the Concrete Clarity Meter.*



Surface with high haze

*Image courtesy of Curviello Concrete*

**REFLECTANCE HAZE** – An optical effect caused by microscopic texture or residue on a surface.

**Visible Symptoms:** A milky finish is apparent on the surface with a loss of reflected contrast. Halos and patterns can be seen around reflections of high intensity light sources.

**Causes:** Resin transfer, lack of refinement, burnish and polishing marks, fine scratches, poor cleanliness/surface residue.

## CONCRETE POLISHING COUNCIL POLISHED CONCRETE APPEARANCE CHART\*



Replaces CPAA finished gloss chart

LEVEL	NAME	DISTINCTNESS OF IMAGE (DOI) GLOSS	IMAGE CLARITY VALUE, %	LEVEL
1	Flat (Ground)	Images of objects being reflected have a flat appearance.	0-9	<10
2	Satin (Honed)	Images of objects being reflected have a matte appearance.	10-39	
3	Polished	Images of objects being reflected do not have a sharp and crisp appearance but can be easily identified.	40-69	
4	Highly Polished	Images of objects being reflected have a sharp and crisp appearance as would be seen in a near-mirror like reflection. May require grouting.	70-100	

**DISTINCTNESS OF IMAGE (DOI) GLOSS** – DOI is the sharpness of images of objects produced by reflection at a polished surface, sometimes called image clarity.

**Measurement by Image Clarity Meter (ASTM D5767):** The DOI, Image Clarity Value, obtained from this test method, range from 0 to 100 with a value of 100 representing perfect DOI (image clarity).

**HAZE** – Haze is the cloudiness or milky appearance of images of objects produced by reflection in a polished surface.

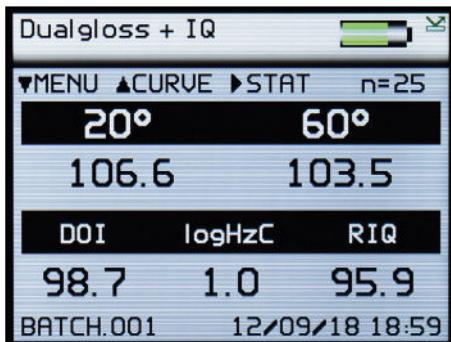
**Measurement by Glossmeter (ASTM D4039):** The Haze Index, obtained from this test method, is computed using the numeric difference between the value of specular gloss at 60° and the value of specular gloss at 20°.

**MEASUREMENTS FOR COMPLIANCE** – The Image Clarity Meter and Glossmeter must be calibrated and used in accordance with ASTM D5767 and ASTM D4039.

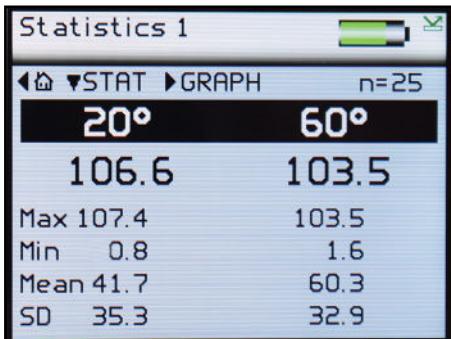
The minimum number of tests distributed across the polished surface should be three for areas up to 1000 ft<sup>2</sup> and one additional test for each 1000 ft<sup>2</sup> or fraction thereof. This applies to both the Image Clarity Value and Haze Index.

The mean (average) values of the test results should be used to evaluate compliance with this chart.

## FEATURES AND SPECIFICATIONS



Simultaneous measurement of all parameters, results are date/time stamped.



Statistics per measured parameter.



Graphical reporting for quick trend analysis.

### Easy Batching

User definable batch names and batch sizes for quicker and more efficient reporting.

### Rapid data transfer

Software-free data transfer.

USB connection to PC instantly recognises the device as a drive location which facilitates the quick transfer of files using Windows Explorer or similar.

### Direct data input via BT wireless

Instantly transmit measured readings directly to programs such as MS Excel on your PC / tablet to greatly simplify the reporting process.

	1	2	3	4	5	6
DATE	05/10/2012	05/10/2012	05/10/2012	05/10/2012	05/10/2012	05/10/2012
TIME	11:52:20	11:52:25	11:52:30	11:52:36	11:52:41	11:52:47
20°	87.2	87.3	87.1	87.1	87.2	87.2
60°	92.6	92.6	92.6	92.6	92.6	92.5
85°	98.1	98.1	98	98.1	98	98
HAZE	0	0	0	0	0	0
LogHaze	0	0.6	0	0	0.6	0.1
DOI/RIQ*	99.8	99.8	99.8	99.8	99.8	99.8
RSPEC	87.2	87.3	87.1	87.1	87.2	87.2
CDiode	250	250	250	250	250	250
Calibrated	05/10/2012	05/10/2012	05/10/2012	05/10/2012	05/10/2012	05/10/2012
Serviced	12/09/2012	12/09/2012	12/09/2012	12/09/2012	12/09/2012	12/09/2012
S/N	1002322	1002322	1002322	1002322	1002322	1002322

### Statistical analysis via novo-gloss multi gauge software



This software provides an easy means to measure, import and compare data and export the measurements into several other formats.

**GLOSS** – A measurement proportional to the amount of light reflected from a surface.

**Geometry:** The correct measurement geometry should be used according to the sample finish – mid gloss: 60°, high gloss: 20°.

**20°** Improved accuracy and resolution on high gloss & metallic samples (>70GU when measured at 60°)

Measurement range: 0-2000 GU

**60°** Universal angle – all gloss levels

Measurement range: 0-1000 GU

**Measurement range:** 0-100 GU 100-2000GU

**Resolution:** 0.1 GU

**Repeatability:** ±0.2 GU

**Reproducibility:** ±0.5GU

### HAZE

Near Specular Reflectance measured at 17.2-19°, 21-22.8°

Switchable between Haze Units (HU) and Log Haze Units (LogHU)

Resolution 0.1HU • Repeatability ±0.5HU • Reproducibility ±1.5HU

### DOI

Resolution 0.1 • Repeatability ±0.2 • Reproducibility ±0.5

Measurement range: 0-100

### REFLECTANCE HAZE COMPENSATION

– The instrument compensates for reflection from within the coating for highly reflective pigments, metallic coatings and speciality pigments, allowing the haze of **any** reflective surface to be measured.

### REFLECTED IMAGE QUALITY (RIQ)

– RIQ is used to quantify effects such as orange peel and surface waviness. This new parameter gives higher resolution results compared to Distinctness of Image (DOI) measurement and better mimics human perception of surface texture, especially on high quality finishes.

Resolution 0.1 • Repeatability ±0.2 • Reproducibility ±0.5

Measurement range: 0-100

### RSPEC

– The peak gloss measured over a very narrow angle.

**Usage:** It is very sensitive to surface texture and can be used to identify subtle differences in smooth surfaces.

Peak Specular Reflectance: 20° ±0.09905°

Measurement range: 0-2000 GU

### INSTRUMENT SPECIFICATION

#### Operation

- Full colour easy to read screen
- Adjustable brightness
- 6 button touch sensitive interface

#### Construction

- All aluminium construction – enclosure, optics, standard holder
- Integrated calibration holder with in-position detector for error free calibration

#### Statistical Analysis

- Max, min, mean, SD
- All measured parameters

#### Graphical Analysis

- On board trend analysis
- Gloss and IQ values

#### Power

- Rechargeable lithium ion
- 17+ hours operation
- 20,000+ readings per charge

#### Recharge Time

- Mains charger: 4hrs

#### Memory

- 8 MB = 999 readings
- User definable alphanumeric batching

#### Data Transfer

- BT wireless
- PC compatible
- USB connection, no software installation required

#### Dimensions & Weight

- 65mm x 140mm x 50mm (H x W x D)
- 790g
- Packed weight: 1.75kg
- Packed dimensions: 180mm x 330mm x 280mm (H x W x D)
- Commodity code: 9027 5000



### INCLUDED ACCESSORIES

- Calibration tile with certificate
- USB data cable
- Novo-Gloss Multi Gauge Software
- USB

- Instruction manual
- Bluetooth data app
- Example Excel spreadsheets
- Instructional videos

### EXTRAS

#### FREE EXTENDED WARRANTY

#### FREE LIGHT SOURCE WARRANTY

Guaranteed for the life of the instrument

#### CALIBRATION AND SERVICE

Fast and economical service via our global network of accredited calibration and service centres. For detailed information, please visit [www.rhopointinstruments.com/support](http://www.rhopointinstruments.com/support)

### INFORMATION

- Order Code  
A6000-013-CCM

- Languages Available



**RHOPOINT**  
INSTRUMENTS



Made in the UK

The Rhopoint IQ 20/60° Concrete Clarity Meter has been manufactured by **Rhopoint Instruments Ltd** since 2011