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**RHOPOINT**



- | 20° GLOSSMETER
- | DOI METER
- | HAZE METER
- | GONIOPHOTOMETER



Rhopoint Instruments Limited  
is a member of the  
Rhopoint Group



The Rhopoint IQ GLOSS-HAZE-DOI-GONIOPHOTOMETER has been established as the reference instrument for measuring reflective appearance.

In a single fast measurement it captures information about the gloss and texture on a sample surface.

Combined gloss, haze and orange peel (DOI/RIQ values) information has made the IQ essential for controlling appearance finish in the paints and coatings sector, particularly for automotive and marine coatings.

The Rhopoint IQ *FLEX 20* brings this technology to a new format specifically designed for **curved surfaces** • **small & delicate parts** • **In-line measurement**.



### Designed for curved surfaces

Conventional gloss instruments are best suited to large flat areas and test panels, as curved surfaces cause measurement errors. The small footprint of the *IQ FLEX 20* makes it much more effective on curved surfaces than a conventional glossmeter; its compact size and shape also allows access to difficult to reach areas.



### Easy customisation for every application

The Rhopoint IQ *FLEX 20* can be customised with magnetically attached adaptor plates. These can be easily interchanged for different applications:

- Reduced measurement spot sizes (4 & 2mm) for small parts and curved surfaces.
- Bespoke 3D printed adaptor jigs for repeatable control of small parts, buttons and controls.
- Non-contact plates for in-line applications.
- Alternative rubber, felt or plastic adaptors can be specified for delicate surfaces.



### In-line Applications

Non-contact adaptor plates allow the measurement head to be fixed above moving products on line or robotised.

USB or Bluetooth remote control allows easy integration with production systems.





## THE RHOPOINT IQ FLEX 20 QUANTIFIES SURFACE QUALITY PROBLEMS THAT ARE INVISIBLE TO A STANDARD GLOSSMETER

The **Rhopoint IQ FLEX 20** 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.



*Orange peel dramatically reduces appearance quality without affecting gloss readings. These two test panels measure identically with a standard glossmeter.*

*The Rhopoint IQ FLEX 20 with RIQ/DOI measurement can quantify the differences.*



*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 Rhopoint IQ Flex 20.*

## THE RHOPOINT IQ FLEX 20 MEASURES

20° GLOSS • RSPEC • REFLECTANCE HAZE  
REFLECTED IMAGE QUALITY • DISTINCTNESS OF IMAGE  
GONIOPHOTOMETRIC CURVES

**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:* Poor dispersion, raw material incompatibility, additive migration, vehicle quality, stoving/drying/curing conditions, polishing marks, fine scratches, ageing, oxidation, poor cleanliness/surface residue.

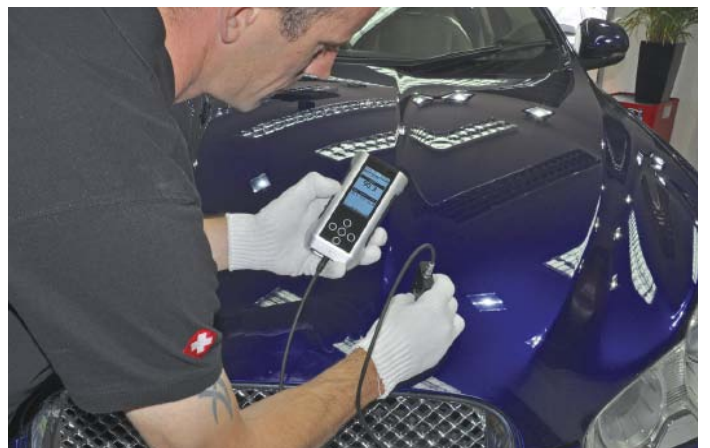
**REFLECTANCE HAZE COMPENSATION** – The instrument compensates for reflection from within the coating for highly reflective pigments, metallic coatings and speciality pigments, allowing the haze of **any** painted surface to be measured.

**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 such as automotive.

*Symptoms of poor RIQ:* Orange peel, brush marks, waviness or other structures visible on the surface. Reflected images are distorted.

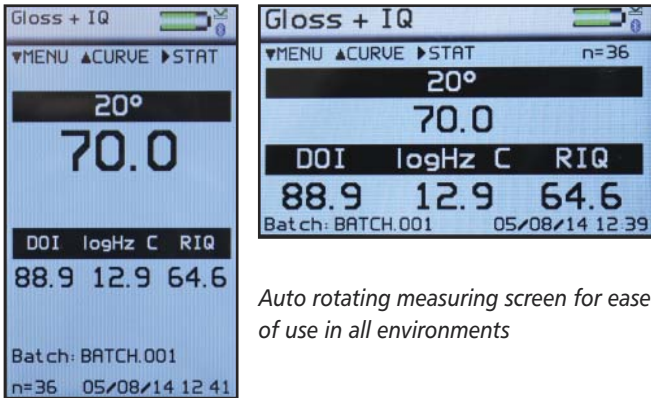
*Causes:* Application problems, incorrect coating flow, coating viscosity too high/low, sag or flow of coating before curing, incorrect particle size/distribution, overspray, improper flash/recoat time, inter coat compatibility, incorrect cure times and cure temperature.

**DISTINCTNESS OF IMAGE (DOI)** – A measure of how clearly a reflected image will appear in a reflective surface.

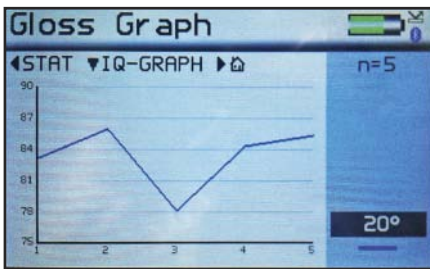


## Measurement

Fast measurement of all parameters. Full on-board statistics with graphical trend analysis and reporting.



*Auto rotating measuring screen for ease of use in all environments*



*Graphical reporting for quick trend analysis.*

Gloss Statistics	
20°	
85.4	
Max	86.0
Min	78.1
Mean	83.4
SD	2.3

IQ Statistics			
20°			
99.8	0.0	93.0	
Max	99.8	Max	0.0
Min	99.8	Min	0.0
Mean	99.8	Mean	0.0
SD	0.0	SD	0.0

*Displays full statistics for the number of readings in the current batch.*

## Goniophotometric Curves

Different types of surface textures produce identifiably shaped reflectance profile. This goniophotometric data can be downloaded to PC for further analysis and comparison via the USB cable or Bluetooth Data Widget.

## 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 Bluetooth

Instantly transmit measured readings directly to programs such as MS Excel on your PC / tablet / smartphone 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
ISPEC	87.2	87.3	87.1	87.1	87.2	87.2
Circle	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

## Power

20,000+ readings per charge. The instrument is rechargeable via USB/PC or mains.

## SAMPLE APPLICATIONS



**Automotive - Body**



**Yacht Manufacturers**



**Automotive Interior**



**Metal Polishers**

## SAMPLE APPLICATIONS



Mobile Phones



Tablet PC



Jig



Automotive Re-finish



Paints and Coatings



Automotive Coatings



Curved Surfaces



Plastics Industry

## SPECIFICATIONS

### GLOSS

20°

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

Resolution 0.1GU • Repeatability  $\pm 0.2$ GU  
Reproducibility  $\pm 0.5$ GU

Measurement range: 20°: 0-2000GU

### RSPEC

Peak Specular Reflectance: 20°  $\pm 0.09905^\circ$   
Measurement range: 0-2000GU

### HAZE

Near Specular Reflectance measured at 17-19°, 21-23°  
Switchable between Haze Units (HU) and Log Haze Units (LogHU)

Resolution 0.1HU • Repeatability  $\pm 0.2$ HU  
Reproducibility  $\pm 1.5$ HU

STANDARDS: ASTM E430, ISO 13803

### RIQ

Resolution 0.1 • Repeatability  $\pm 0.2$  • Reproducibility  $\pm 0.5$   
Measurement range: 0-100

### DOI

Resolution 0.1 • Repeatability  $\pm 0.2$  • Reproducibility  $\pm 0.5$   
Measurement range: 0-100

STANDARD: ASTM D5767

### GLOSS CALIBRATION STANDARD

Traceability: BAM Traceable

Uncertainty: 0.4GU

## INSTRUMENT SPECIFICATION

### Operation

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

### Construction

- All aluminium construction – enclosure, optics, standard holder

### Measurement

- Single button push to measure all parameters
- Fast measurement
- Results batching with user definable names

### 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

- PC compatible
- USB connection, no software install required

### Measurement Area - remote control via USB / Bluetooth

- 20° = 6mm x 6mm

### Options

- 2 or 4mm adaptor heads available

### Dimensions & Weight

- 150mm x 79mm x 34mm (without head) (H x W x D)
- 550g
- Packed weight approx: 1.5kg
- Commodity code: 9027 5000

### Languages



## INCLUDED ACCESSORIES

- Instrument with Flex head 20°
- Calibration tile with holder
- USB data cable
- Mini CD
  - Instruction manual
  - Bluetooth data app
  - Example Excel spreadsheets
- Instructional videos

## OPTIONAL EXTRAS

Reduced spot size adaptor plate: 2 or 4mm

Bespoke 3D adaptor jigs, designed and printed to suit customer application

In-line fixing kit

## EXTRAS

### FREE EXTENDED 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, please visit [www.rhointinstruments.com/support](http://www.rhointinstruments.com/support) for detailed information.



LOCAL AGENT

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