



AESTHETIX



The ultimate surface appearance measurement solution



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Modular solution:

Surface Brilliance | Effect Finish | Texture
Custom application modules

Choice of deployments:

Laboratory, portable in-field, inline in
production or as part of a Cobot solution

Versatile measurement:

Flat surfaces, curved parts
and small surface areas



Manufactured by Rhpoint Instruments
in the United Kingdom 



Why is Aesthetix[®] the ultimate surface appearance measurement solution?

Multiple aspects of surface appearance contribute to how the quality of a surface is perceived. Consumers subconsciously observe the glossiness, colour, translucency and texture of surfaces when judging the aesthetic appeal of a product.

Product aesthetics is a major factor in driving consumer purchase. Designers and manufacturers invest significant resources in optimizing materials and processes for maximum consumer appeal.

Aesthetix[®] uses cutting-edge measurement technology to quantify overall surface appearance with the closest correlation to human perception.*

Multiple aspects of appearance can be measured with Aesthetix[®]



*Measurement technology co-developed with industrial and academic partners.

What is the Rhopoint Aesthetix®?

Aesthetix® is an advanced system that predicts the impact of surface quality on consumer perception using new measurement metrics.

This modular device measures all aspects of surface quality, including glossiness, texture, topography, surface patterns, and visual homogeneity. Adaptable to various workflows, it can measure flat, curved, and small areas with contact or non-contact methods. Aesthetix® can distill complex measurement into easy to understand perception parameters which can be used to set pass/fail tolerances. Enhanced with **Rhopoint Appearance Elements** software, it supports data sharing, storage, analysis, and reporting making it a comprehensive tool for surface quality assessment.

Aesthetix® Implementation



Research and Development

Use Aesthetix® perception metrics to understand what makes a perfect surface finish in the eyes of the consumer.

Set new standards with defined pass fail criteria.

Deploy Aesthetix® technology to suit your workflow



Quality control

A simple QA interface with job based work flow can be employed for routine surface inspection.

Coming soon!



Automation

Designed for automation, the Aesthetix® can be integrated as a non contact static, cobot or robot sensor.

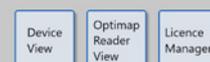


Portable inspection

Connected to a tablet, the Aesthetix® can be used as a portable off-site measurement system.

Advanced Data Management

Rhopoint Appearance Elements software is used to analyse measured results by comparing values, images and topographical information against reference standards.



Scalable data management

Rhopoint Appearance Elements provides a structured, fully indexed database for precise process optimisation and future AI-driven decision-making.



Local

A local database stores results, data and images from a single instrument. Data .csvs and images can be output for further analysis.



Network

A network database for multiple instruments and locations.

Coming soon!

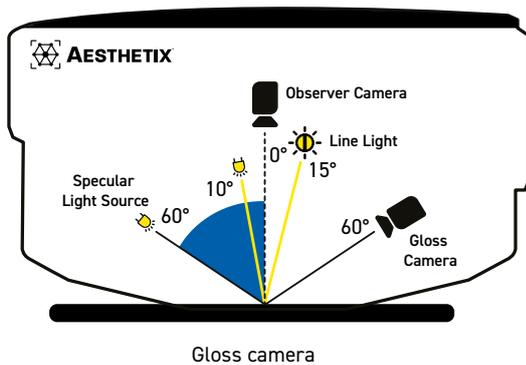


Cloud

Host your database on the Rhopoint cloud or use your organisation's cloud.

Coming soon!

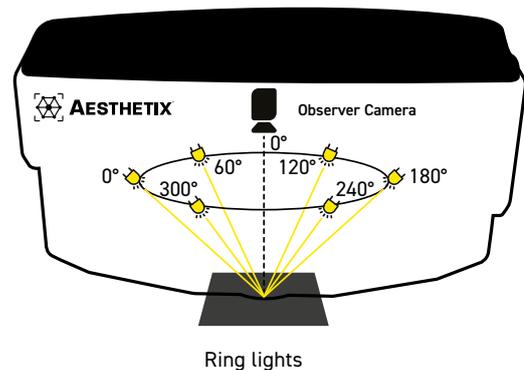
Technology



Dual Camera System: Designed to capture detailed information about the surface and how it interacts with light.

Observer Camera: Captures a highly detailed colour-correct image of the surface.

Gloss Camera: HDR images are used to characterize multiple aspects of surface glossiness.



Specular light source: Conforming to ISO 2813 and ASTM D523, this is used in the calculations for gloss, visual gloss, DOI, sharpness, Haze, visual haze.

6 x 45° ring lights: Used to light the surface for image capture, sparkle analysis and photometric stereo.

Line light: Used in the capture / analysis of orange peel and surface waviness.

10° spot light: Used in the analysis of scratches, holograms and haze.

Using Aesthetix[®] technology

The Aesthetix[®] instrument vision system comprises of a sensor unit connected via USB 3.0 supporting onsite inspection with a tablet, surface analysis with a laboratory PC and inline quality control via SPC.

This modular device measures all aspects of surface quality, including glossiness, texture, topography, surface patterns, and visual homogeneity. Adaptable to various workflows, it can measure flat, curved, and small areas with contact or non-contact methods.



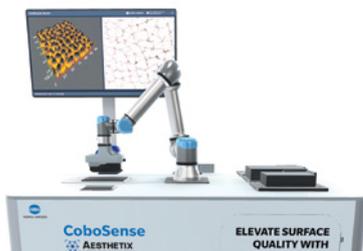
Interchangeable measurement adaptors allow for measurement of flat surfaces, small parts, small areas and curved surfaces.



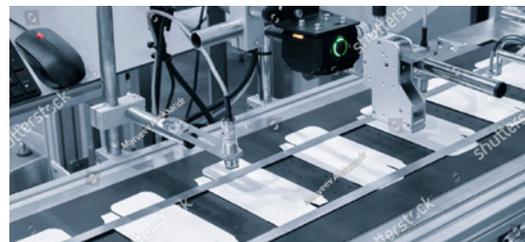
The instrument is able to accept custom jigs and adaptors for more repeatable measurement of small and complex parts.



For non-contact measurement of delicate surfaces, liquid coatings, gels, creams and pastes, Aesthetix[®] can be used with a height-adjustable stand.



High-throughput sample analysis can be achieved with Aesthetix[®] integrated into a laboratory cobot system.



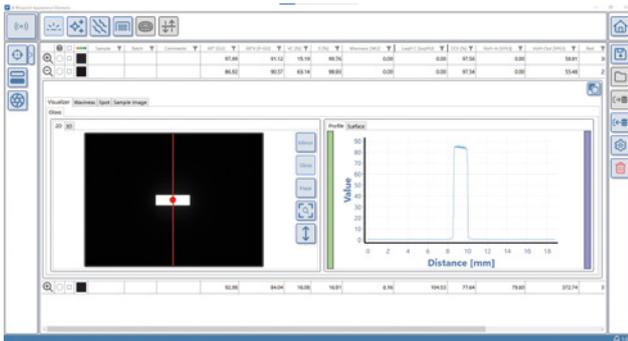
The Aesthetix[®] can be integrated into a production environment as a non-contact in-line sensor.

Minimum windows system requirement: OS: Windows 10/11 | Memory: 8 GB | Port: USB 3.0 or Thunderbolt | Screen Resolution: Recommended 1920 x 1080 | Portable inspection: Recommended Windows Surface Pro 9 | 4-5 hours usage per charge | Inline measurement: TCP/IP protocol | Siemens S7

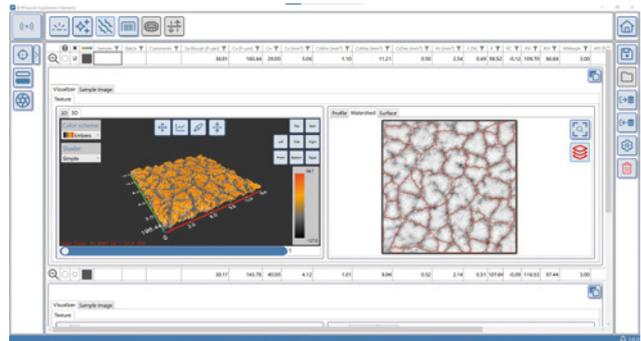


Rhpoint Appearance Elements

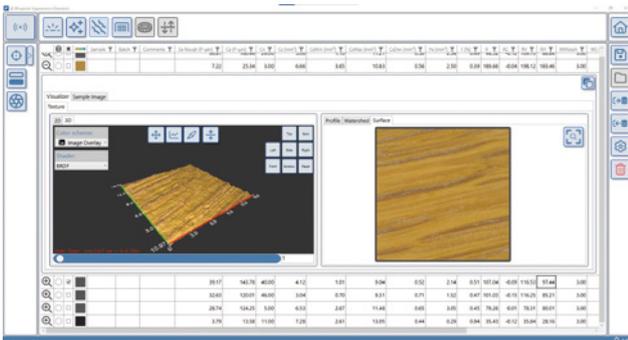
Rhpoint Appearance Elements software is at the heart of the Aesthetix[®] instrument vision system, capturing images for analysis with cutting-edge algorithms. Measurement images, graphs, and topographical surface maps illustrate the appearance qualities of the surface. Numeric results and images are stored in a local, network or cloud database, ensuring secure, scalable data management.



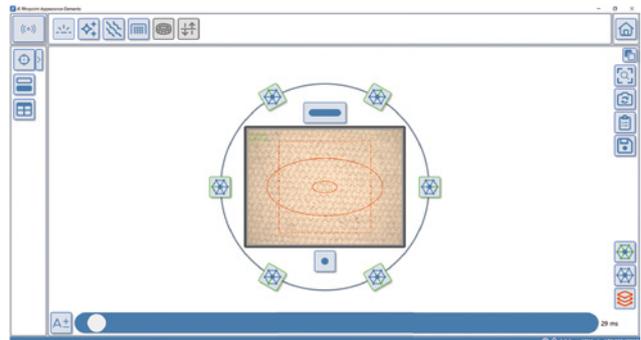
Surface brilliance module showing results, measurement images and graph.



Texture module with results, surface topography and segmented map.



Texture module with colour-correct surface image rendered on 3D surface map.



Aesthetix[®] live view facilitates accurate positioning, ideal for locating small surface areas of interest.

Coming soon! QA mode

Job: Laptop Stand TD-093/34 Black						Operator: Jason Brinton	
SEQUENCE	Part	60° [GU]	Log H C [logHU]	Measurements	Status	Completed	
1	Front Area Top	22.4	44.3	4/4	Pass	09.13.23 24/7/24	
2	Front Area Bottom	22.4	44.3	4/4	Pass	09.15.55 24/7/24	
3	Rear Right	22.4	44.3	2/4	Incomplete		
4	Rear Left				Not Started		
5	Middle Left				Not Started		

Part: Rear Right				Inspections Measure rear right part as shown. Avoid curved areas. Repeat 4 times	
#	60° [GU]	Log H C [logHU]	Time/Date		
1	19.6	42.5	09.18.35 24/7/24		
2	23.5	43.3	09.18.37 24/7/24		
3	20.5	45.7	09.18.38 24/7/24		
4					

Job Number: 2846-12
09.19.01 24/7/24

A streamlined QA interface displays specified parameters with pass/fail indicators. Measure within a defined workflow, and upon completion, generate a PDF report.

Surface Brilliance Module

A combination of perception metrics that comprehensively describe the reflectivity and visual quality of high-quality, high-gloss surfaces.



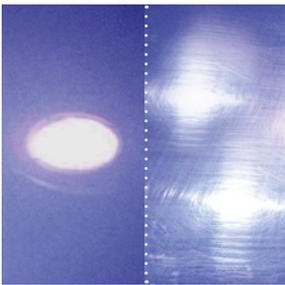
Gloss

Set around the industry standard of 60 degrees, Aesthetix® gives gloss values to match international standards with the addition of camera images to understand the surface.



Visual gloss

Traditional measurements often don't match perception. For example, black materials appear glossier than white with the similar values. Aesthetix® provides visual gloss units (pGU) to align with how gloss is actually perceived.



Haze

Haze refers to a cloudy or milky appearance on a coated or polished surface. Aesthetix® provides ASTM E430 compatible values and new perception based metrics which predict haze appearance in different viewing conditions (indoor vs outdoors).

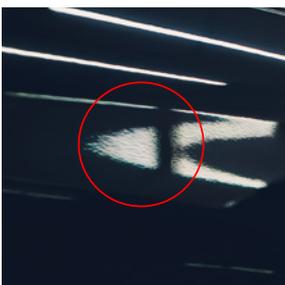
In a car showroom, polishing defects in paintwork are barely visible, but in sources of bright natural light, halos are apparent.



Sharpness / DOI

A NEW sharpness parameter (SU) gives improved sensitivity to ultra-fine texture on the highest quality surfaces, whilst DOI units are compatible with Rhopoint IQ ASTM E430 measurements.

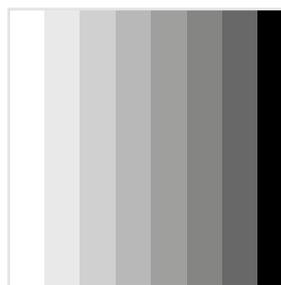
Left - A crisp, sharp reflection is seen in a smooth surface. Right - Very small surface texturing distorts the reflected image causing it to be blurred and indistinct.



Waviness

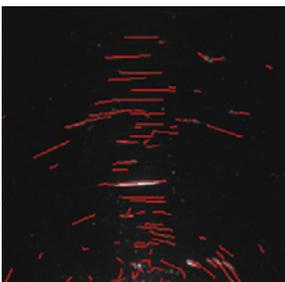
Waviness in surface finishes presents as a wavy texture resembling the peel of an orange.

Aesthetix® offers TAMS Waviness, PCI orange peel scale, and tension values to accurately characterise orange peel for various applications.



Luminance

Aesthetix® displays surface average Y value from the CIE 1931 XYZ scale/ This represents how light or dark the surface appears, independent of its hue or saturation.



Polishing Defects

Swirls, holograms and scratches on a surface are identified, tolerated by length and quantified.

Count: 25 Mean length: 0.87 mm
Defect Area: 0.32%

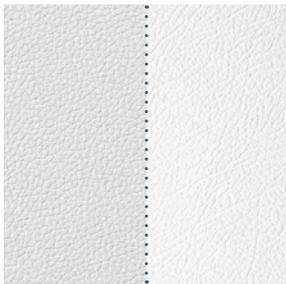


Colour

A colour-accurate image of the surface is captured and the average RGB values are reported in the [Rhopoint Appearance Elements](#) software.

Texture Module

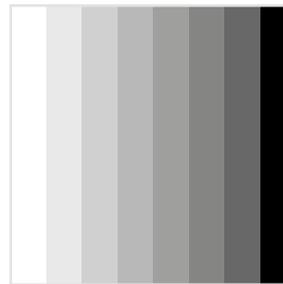
Materials with surface texture such as automotive interior plastics, leather, powder coatings need to have uniformity of appearance and pattern to have maximum visual appeal. The Rhopoint Aesthetix® analyses surface texture to help manufacturers create consistent products with optimum visual appearance and tactile qualities.



Ca = 90 μm Ca = 40 μm

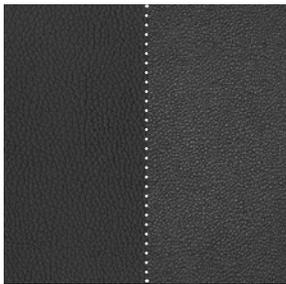
Cell amplitude

This is the average amplitude of all cells identified within the texture of a material. This parameter is used to understand the depth and relief of the surface texture, which directly influences visual and tactile perception.



Luminance

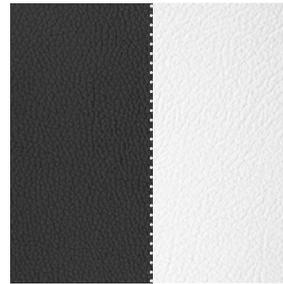
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Cs = 3.4mm² Cs = 0.7mm²

Cell count and size

Quantifying cell size and distribution helps in evaluating the uniformity, coarseness and overall appearance of the surface, essential for quality control and ensuring consistency in product manufacturing.



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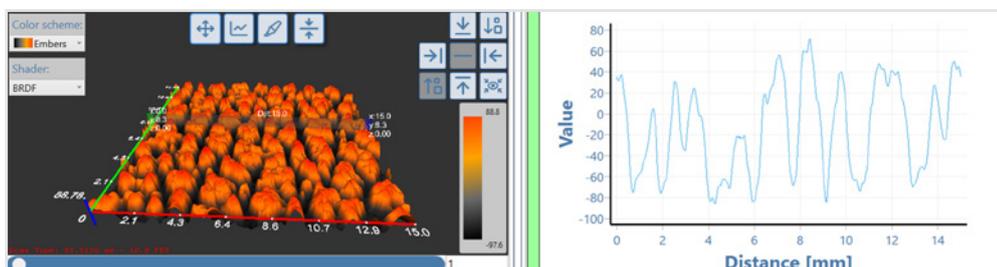
Reflectivity

Rhopoint Aesthetix® measures overall surface reflectivity (contrast between the hills and valleys of the pattern). The degree of reflectivity in leather can affect how it looks under different lighting conditions.



Gloss

Set around the industry standard of 60 degrees, Aesthetix® gives gloss values to match international standards with the addition of camera images to understand the surface.

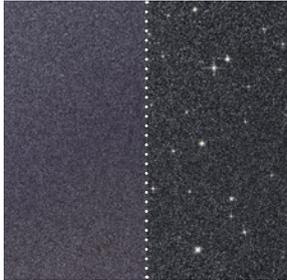


Perceived Roughness

The standard deviation of amplitude for all measured pixels in the 15x15mm field of measurement.

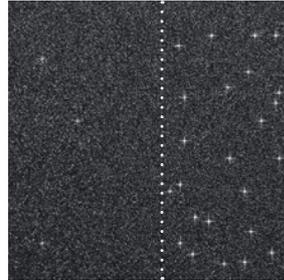
Effect Finish Module

Coatings with effect pigments exhibit sparkle and coarseness. Sparkle refers to a visual texture observed when mirror like elements within a surface reflects light.



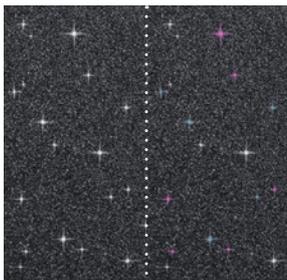
Coarseness

Coarseness describes the non-uniform grainy appearance of a surface when viewed in diffuse lighting conditions. Coarseness tends to increase with pigment loading.



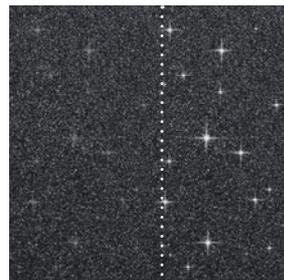
Density

Sparkle density is a measure of the concentration of visible sparkle points on a surface when viewed under directional lighting conditions.



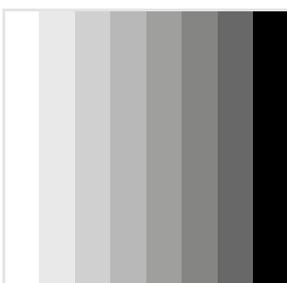
Colour

The value indicates the average RGB colour of the visible sparkles in the field of measurement.



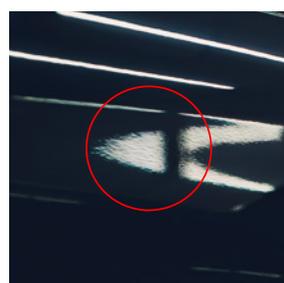
Visibility

The Aesthetix® reports sparkle visibility; an average intensity value for any sparkling elements which have been identified as visible in the material.



Luminance

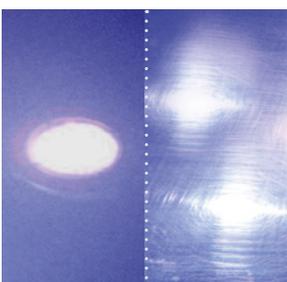
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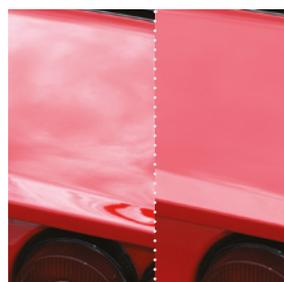
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TRY BEFORE YOU BUY

We offer two options for you to try out the Aesthetix® before buying.

1

Online demonstration: Online presentation of the Aesthetix® with your samples measured LIVE on Microsoft Teams. Includes a consultation with an application specialist.

2

Factory sample testing: Send in samples of your material for testing and receive a comprehensive test report.

[Arrange a demo](#)

Ready to receive a quote?

[Click here](#)

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