



Imaging Transmission Appearance Meter IDTX

Operating Instructions



Thank you for purchasing this Rhopoint product.

Please read these instructions carefully before operating this product and retain them for future reference.

The images shown in this manual are for illustrative purposes only.

English

This instruction manual contains important information about the setup and use of the Rhopoint ID Imaging Transmission Appearance Meter. It is therefore essential that the contents be read before powering up and using the instrument.

If this instrument is passed to other users you must ensure that the instruction manual is supplied with the instrument. If you have any questions or require additional information about this product, please contact the Rhopoint Authorised Distributor for your region.

The technology and components used in the device are based on state-of-the art optic and electronics. As part of Rhopoint Instruments commitment to continually improving the technologies used in their products, they reserve the right to change information included in this document without prior notice.

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Contents

Storage and Handling	3
About the Rhopoint ID Imaging Transmission Appearance Meter	4
Measurement Technology	4
Measurement Parameters	5
Accessories.....	8
Optional Accessories	8
Functional Overview	9
Icons Used	10
Power	12
Switching the Unit On/Off	12
Warming Up the Unit.....	12
Keeping the Instrument Clean	12
Taring the Unit	13
Measuring ASTM Haze, Sharpness, Clarity and Waviness with the Rhopoint IDTX.....	15
Measuring the Checking Standard	17
Taking an In-Contact Measurement	18
Assessing Distance Dependency or Matching End Use Applications	19
Measuring ASTM Haze & Sharpness.....	20
Starting a Measurement – Single Reading	21
Starting a Measurement – Multipoint Average	23
Settings Menu	25
Rhopoint ID-L Transmission Appearance Analysis Software	26
Connecting the Instrument to the PC	27
Using the IDTX Software on Multiple Screens	29
Setting Up the Connection.....	30
Navigating the ID Software	32
ID Instrument View.....	32
ID Results Table	33
IDTX Software – Live-view and Captured Images	43
IDTX Software – Visual Analysis of Results: Sharpness	43
IDTX Software – Visual Analysis of Results: Haze	44
IDTX Software – Visual Analysis of Results: Waviness.....	45
IDTX Software – Expanding the Viewing Window	47
IDTX	49

Storage and Handling



To ensure safe and reliable operation of this instrument it should be placed on a rigid, flat, level surface.



Prevent exposure of the instrument to direct sunlight for prolonged periods of time and to continuous humidity and condensation.



Do not place the instrument near electromagnetic fields or in an environment with excessive vibrations.



The instrument's metal body and touchscreen are resistant to a variety of solvents; however, the recommended cleaning method is by using a soft damp cloth.



Only use approved accessories and spare parts. All spare parts are available from Rhopoint Instruments Ltd and approved distributors.



Do not attempt to open the instrument. There are no user serviceable parts inside. Please contact Rhopoint Instrument or an approved distributor for your service requirements.

About the Rhopoint ID Imaging Transmission Appearance Meter

The Rhopoint ID Imaging Transmission Appearance Meter (IDTX) quantifies the transmission appearance of transparent, semi-transparent and translucent samples such as plastic, films, glass and liquids.

The instrument uses a high specification camera to take images of a specially designed target graticule through the sample to be analysed.

These images are analysed using digital imaging techniques to quantify the appearance qualities of the material in metrics that are highly correlated to human visual perception.

The images can then be analysed using the optional viewer software to compare the transmission characteristics of materials in conditions that replicate the final use of the material.

Uniquely the instrument can quantify the see-through quality of a sample in contact with an object or at variable viewing distances up to 45mm.

The instrument is supplied in 2 formats-

IDTX-E: a stand-alone, low cost instrument designed for the QA environments.

IDTX-L: a laboratory instrument with additional software for R&D environments.

Measurements made with the IDTX-E & IDTX-L are identical.

IDTX-E instruments can be upgraded at any time to IDTX-L version.

Measurement Technology

A backlit, high accuracy, reference target graticule functions as the viewed object, creating a highly defined pattern of light intensities with optimally sharp transitions between the backlit and masked areas.

A sample placed in direct contact (or at the desired separation) with the graticule is photographically imaged and analysed to quantify the reduction in sharpness of the backlit-to-masked (i.e. light-to-dark) transitions of the graticule compared with its reference image.

At a separation distance of 7.86mm (referred to as 8mm) the instrument measures transmission haze by calculating the reduction of contrast in black and white areas of the target graticule.

Measurement Parameters

Haze: Certain transparent materials exhibit an optical property known as haze; light scattered during transmission through the material causes any object viewed through it to have less contrast and appear grey and milky.

- When materials with high haze are observed the material becomes visually intrusive and the viewed object becomes less distinct.
- Samples with low haze have better transmission contrast and are much less visually intrusive, the viewed object has high contrast.

The Rhopoint IDTX measures Haze at any distance, however at 8mm distance using the supplied haze spacer the results conform to specifications written for traditional sphere instrument which comply to ASTM D1003.

Inter-instrument Haze agreement between traditional sphere instruments and Rhopoint ID for commercial plastic films (0-30 HU, <1000 μm) has been verified as <0.5% H (SD).

Inter-instrument Haze agreement between traditional sphere instruments and Rhopoint ID for transparent plastic materials (0-30 HU, <6mm) has been verified as <1.5% H (SD).

Sharpness: Quantifies any reduction in the optical sharpness of an object viewed through the tested material. Poor optical sharpness is often caused by surface roughness or irregularities in the material.

This optical effect is observed as an increase in blurriness when viewing an object through the sample. Sharpness values are expressed as a percentage (0-100%), 100% represents a material with perfect sharpness.

Many materials have optical properties where the amount of blurriness is dependent on the distance between the material and the viewed object.

Anisotropic Sharpness- the process of extruding materials can cause marked optical differences in the direction of extrusion and orthogonal to that direction. These differences can appear as a increased blurring in a single direction or faint lines in the material. The Rhopoint ID software quantifies this effect as sharpness- this can be expressed as an average S or in horizontal S_H or vertical S_V directions.

Clarity: Quantifies the blurriness of an object when viewed through a material, results are proportionate with Sharpness, but measurement scale is compressed and measurement resolution is reduced.

Clarity is a scale used by traditional haze and clarity meters, when measured using the 8mm adaptor plate Rhopoint ID Clarity measurements conform to specifications written for these meters.

Inter-instrument Clarity agreement between Rhopoint ID and traditional sphere instruments for commercial plastic films (<1000µm) is typically <0.4% C (SD).

Inter-instrument Clarity agreement between traditional sphere instruments and Rhopoint ID for thick transparent plastic materials (<6mm) is typically <0.5% C (SD).

Waviness this is an optical effect caused by large structures (0.1-2mm) on the surface of the material. If the structure is homogeneous it is often described as orange peel- the surface resembles the peel of an orange.

If the effect is anisotropic visible lines can often be seen when looking through the material

Unlike sharpness these larger structures can cause dynamic distortion when the film is moved over a target image/object which has straight edges- the edges appear to distort and wave as the material is moved.

Waviness measures the visible distortion of the ID graticule edges through the material- W is the standard deviation of the edge deformation in µm.

Waviness homogeneity is assessed by comparing W (average waviness) with W_H (horizontal waviness) and W_V (vertical waviness) using Rhopoint ID software.

Note: Sharpness and Clarity scales are only displayed on the instrument screen when the ASTM Haze spacer is in place, to measure at varying distances the IDTX PC software (provided with IDTX-L) must be used.

Transmission: The Rhopoint ID measures VISIBLE TRANSMISSION- this is the amount of light transmitted through the sample to be captured by the imaging camera.

The amount of light transmitted to the camera is dependent on the ID of the sample and the separation distance.

Visible transmission is correlated to the perceived intensity of light reflected from a viewed object when viewed through the sample.

Distance Dependence- The Rhopoint IDTX-L (see note) can quantify this relationship between distance and optical performance by measuring in contact or at defined separation distances.

The ability of the IDTX-L to measure at definable separation distances means that the suitability of materials for applications with different air gaps can be directly compared.

Thin films and plastic materials often demonstrate a reduction in sharpness and increase in haze which peak with a separation distance of 2-4mm between the sample and material.

Rhopoint instruments offer bespoke adaptor plates or 3D CAD models for local manufacture of 3-D printed plates.

Accessories

The instrument is supplied as a standard package complete with all accessories required to power and operate the unit.

IDTX-E & IDTX-L

- RHOPoint IDTX Imaging Transmission Appearance Meter
- Calibration certificate
- 1 x checking standards
- IDTX Haze 8mm spacer
- 5mm spacer
- DC power supply and mains cable (UK,. EU & US)
- USB with operating manual
- Cleaning cloth

IDTX-L

- USB 2 to LAN adaptor
- LAN cable
- USB with operating manual and software

Optional Accessories

Distance haze measurement pack (B3100-001): 2 x 5mm spacers and 5 x 2mm spacers

Abrasion tester (B3100-002)

Wet sample adaptor (B3100-003)

Functional Overview









1	Display and touch-screen
2	Camera optics
3	Illuminated graticule
4	Levelling feet



6	Power socket
7	USB socket
8	Power button

Icons Used

	S-Sharpness the blurriness of a viewed object (%).
	T-Visible Transmission the intensity of light from a viewed object.
	H-Haze the contrast of a viewed object, cloudiness, milkiness.
	H-Haze_{ASTM} C Is measured with the ASTM 8mm adaptor plate in place- measurements are verified to comply to ASTM D1003.
	W-Waviness is a measure of the wavy distortion of objects viewed through the material.
	C-Clarity the blurriness of a viewed object (%). Measurements made with the ASTM 8mm adaptor plate in place are verified to comply to specifications written for Sphere Haze and Clarity Meters (BYK)
	Return to Main Menu
	Return to Main Menu
	Switch to Settings Menu
	Take a single measurement
	Take 3 measurements & display statistics
	Tare
	Power off instrument

	Adjust volume

Power

The Rhopoint IDTX is powered by a low voltage DC power supply connected to the instrument's power input connector.

Switching the Unit On/Off

The Rhopoint IDTX has a built in CPU which takes approximately 30 seconds from power up to boot into measurement mode.

It is important that the power up and power down procedures are followed.

To power up the instrument press and hold the power button until the target graticule illuminates (3 seconds), release the button and the instrument will continue in the boot up sequence- please note the front screen remains OFF until the boot sequence is complete (25 seconds).

It is not advisable to switch off the power during boot up as the instrument may enter recovery mode. If this occurs contact Rhopoint Service for instructions on re-initializing the instrument.

To power down the unit press on the settings icon and then press and hold the power icon (2seconds) until the instrument begins the power down cycle, indicated by the screen turning off.

Warming Up the Unit

For highest accuracy measurement it is advised that the instrument light source is left to achieve stability for 4 minutes prior to initial tare.

Keeping the Instrument Clean

The measurement graticule is hardwearing but can be scratched with sharp objects; always place samples and spacers with care.

The measurement may be affected by grease residues or dust on the graticule. It is good practice to wipe the graticule before first use daily or more often if used in a high contamination environment.

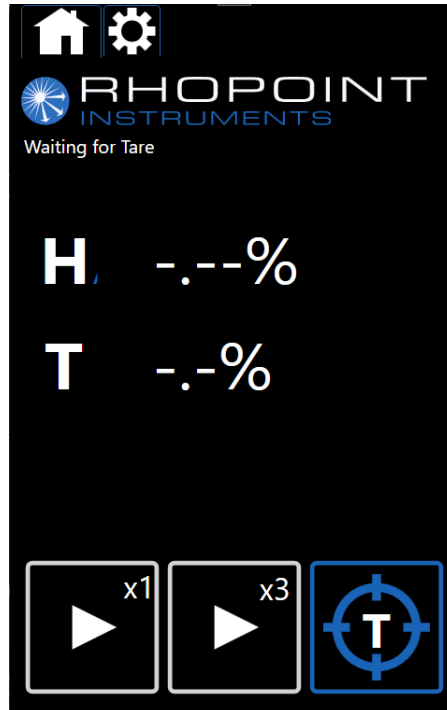
Please use the enclosed optical cloth.

For heavy contamination use any commercially available lens cleaning solution on the graticule.

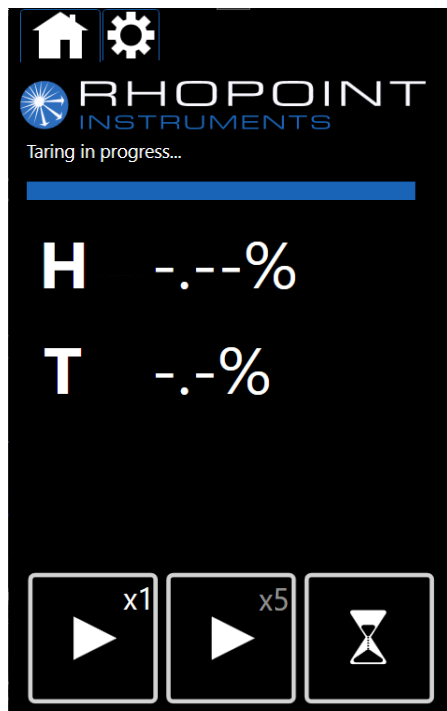
Avoid touching the camera lens- if this becomes contaminated please contact Rhopoint Service for further advice.

Taring the Unit

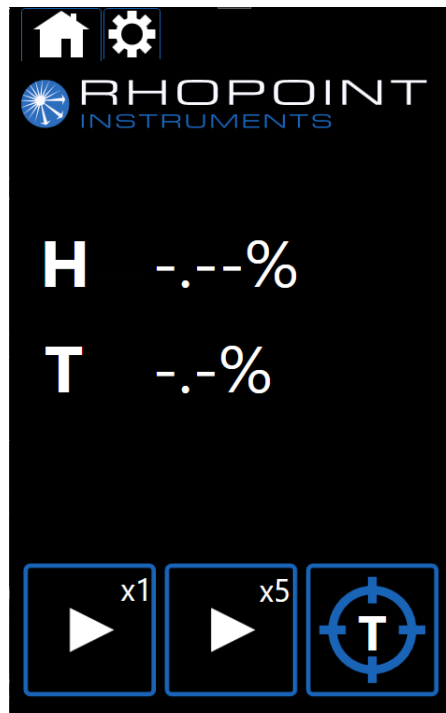
After power up it is necessary to tare (zero) the unit. Before the unit is tared the measurement buttons are unavailable (greyed out).



To tare the unit press and hold the tare symbol (3 sec) on the touch screen.



Once taring is complete measurement buttons are available and the instrument is ready for use.



Tolerance on tared values-

After tare the instrument will measure the graticule as follows- (average of 5 readings after 4 min warm up period)

H- 0.0% (+/- 0.1%)

T- 100% (+/- 0.3%)

S- 100% (+/- 0.2%)

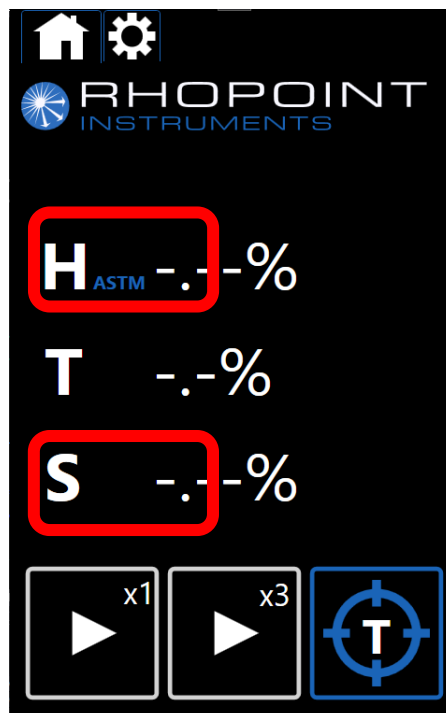
Measuring ASTM Haze, Sharpness, Clarity and Waviness with the Rhopoint IDTX

Place the 8mm Haze spacer on the instrument.



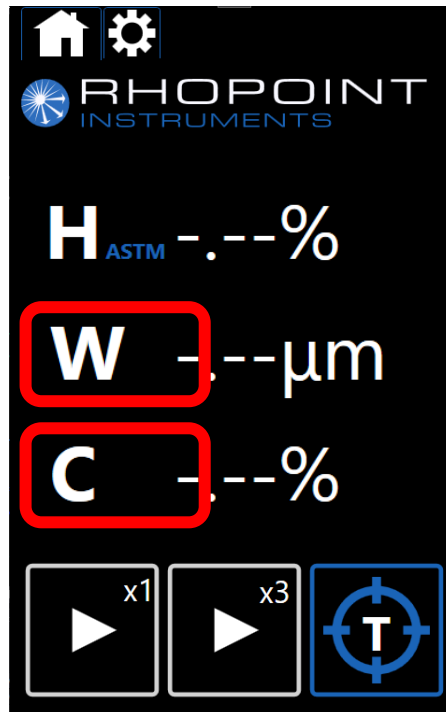
The spacer is held in place by magnets and automatically detected by the unit.

Once in place ASTM Haze measurement and Sharpness will become available on the instrument screen.



Touch the S or to toggle between sharpness and Clarity modes.

The ID-L instrument also has the ability to measure waviness- press the T button* to toggle between transmission and waviness.



*function only available in the Rhopoint ID-L Transmission Appearance Analysis Software

Measuring the Checking Standard

It is recommended that the checking standard is measured weekly or after moving or transporting the unit.

Visually inspect the standard before measurement- it should be free of dust and contamination

Place the standard on the instrument.



The standard is held in place by magnets; ensure that the back of the standard is aligned with the edges of the instrument body.

Press the READ icon.

Compare the measured values with those recorded on the check standard, if the values are within the stated tolerance the instrument is ready to use.

Please note that the Sharpness value is sensitive to positioning, slightly adjust the position of the standard if the value is out of tolerance.

Cleaning of the checking standard- the surface of the checking standard is delicate and should not be touched with any cleaning cloth.

If dust or debris is present on the standard blow the surface with an optical grade dry air aerosol.

If the standard becomes damaged or contaminated please contact service@rhopointinstruments.com for more advice.

In case of the standard measuring out of tolerance- repeat the tare process and re-measure, if the problem persists contact service@rhopointinstruments.com for more advice.

Taking an In-Contact Measurement

In-contact measurement is used to measure the optical impact on a viewed object when the sample is in direct contact. To perform a measurement, place the sample directly on to the measurement graticule.

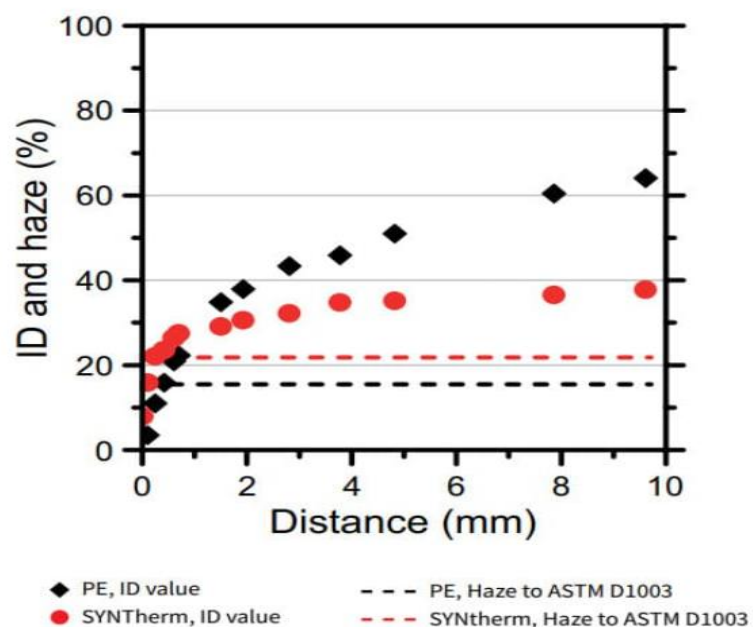
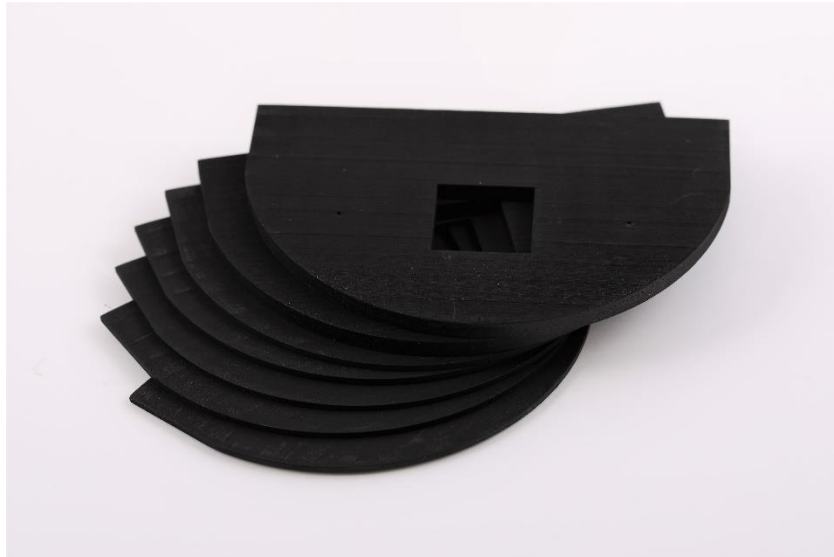


For fast easy manipulation high clarity samples with low distance dependency can be manually held and moved.

Wear gloves if it is necessary to avoid contaminating the samples.

Assessing Distance Dependency or Matching End Use Applications

To measure distance dependency the sample should be spaced away from the platen. It is recommended that the optional Rhopoint IDTX spacers are used. Multiple spacers can be stacked to achieve the required distances.



To match an end use application the distance between the sample and platen should be chosen to match those in the real world application.

Measuring ASTM Haze & Sharpness

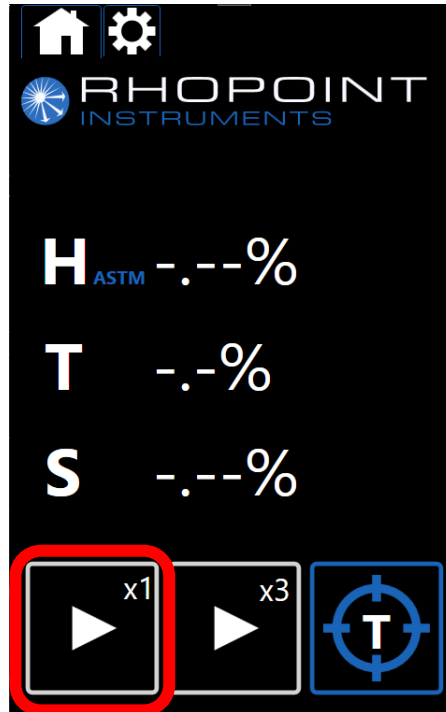
To measure ASTM Haze & sharpness the ASTM Haze spacer should be placed in position and the sample placed on top.



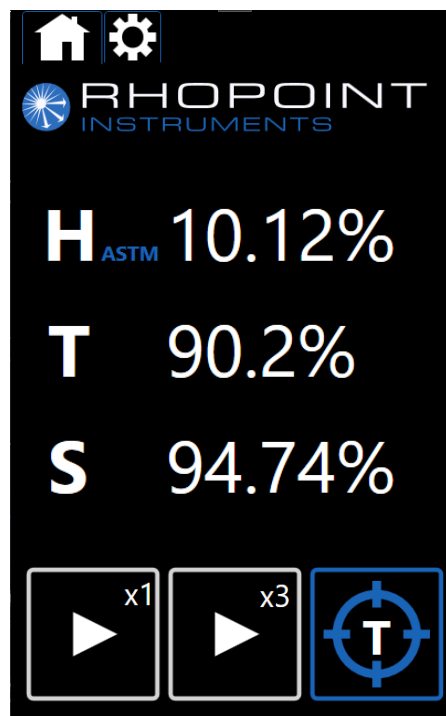
Measuring with the ASTM haze spacer in place is often the default method for many applications.

Starting a Measurement – Single Reading

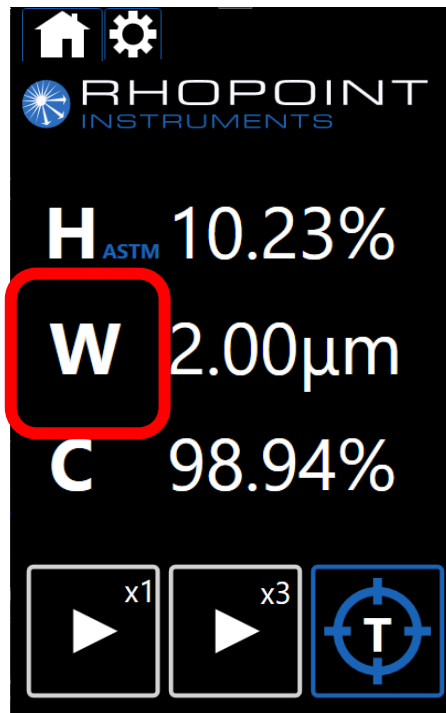
To initiate a single measurement- press the single read button on the touch screen.



The instrument will initiate a reading and report the result.



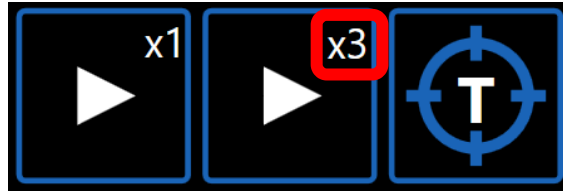
To view the waviness* and Clarity results for the same sample, press the T* or S icons to toggle the viewed values.



*function only available in the Rhopoint ID-L Transmission Appearance Analysis Software

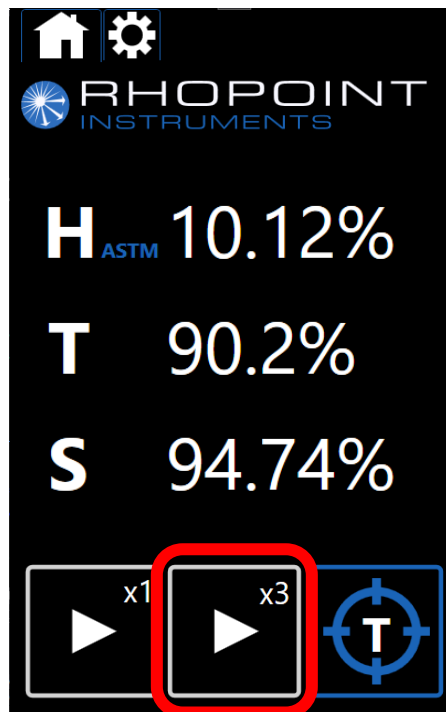
Starting a Measurement – Multipoint Average

The Rhopoint ID can calculate statistics for a measured batch of readings. To select the batch size click on the X3 number in the top corner of the middle button.

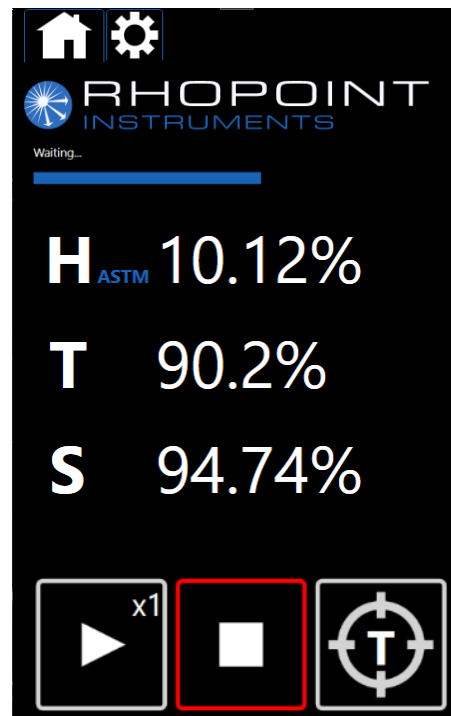
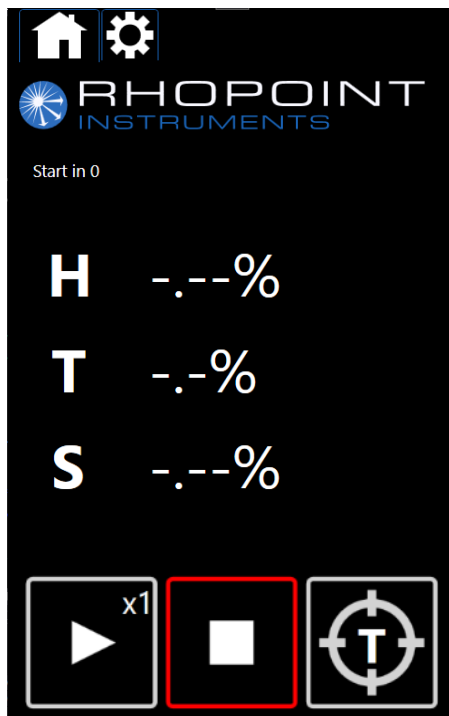


The unit has preset batch sizes of 3,4,5,10 or ∞ .

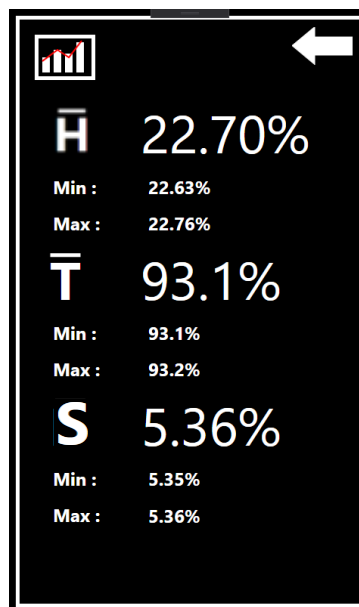
To initiate a multipoint measurement- press the middle button on the touch screen.



The instrument will initiate a reading and report the result.



The instrument introduces a delay before starting the first measurement and between readings- this allows the user time to manipulate the sample. To finish an ∞ batch press the stop button, the instrument will report the statistical analysis for the measured samples.



After completion the instrument will report basic statistics for the measurements- for more complex analysis it is recommended to use the ID-L instrument.

Settings Menu

To access the settings menu press the settings menu icon.



To power off the instrument press & hold the power icon.

To adjust the volume of the audible signal, use the volume slider.

To return to measurement screen press home icon.

“Unlock Keys” is reserved for upgrading the instrument from E to L and to access service centre calibration functions.

Rhopoint ID-L Transmission Appearance Analysis Software

Installation

The software is located on the supplied USB drive, the required files are located in the IDTX folder.

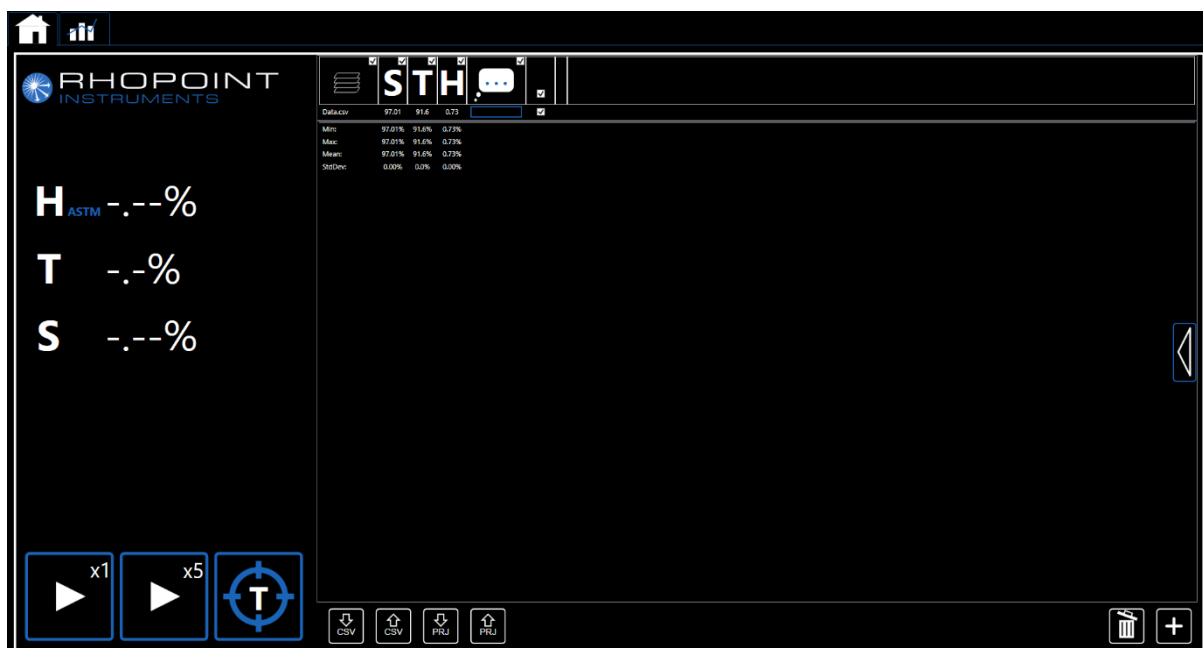
Copy the IDTX folder to your desktop.

Double click on the setup.exe located in the IDTX folder to install.

PLEASE NOTE THAT DURING INSTALLATION YOUR PC MAY RESTART WITH NO WARNING, ENSURE ALL WORK IS SAVED BEFORE PROCEEDING

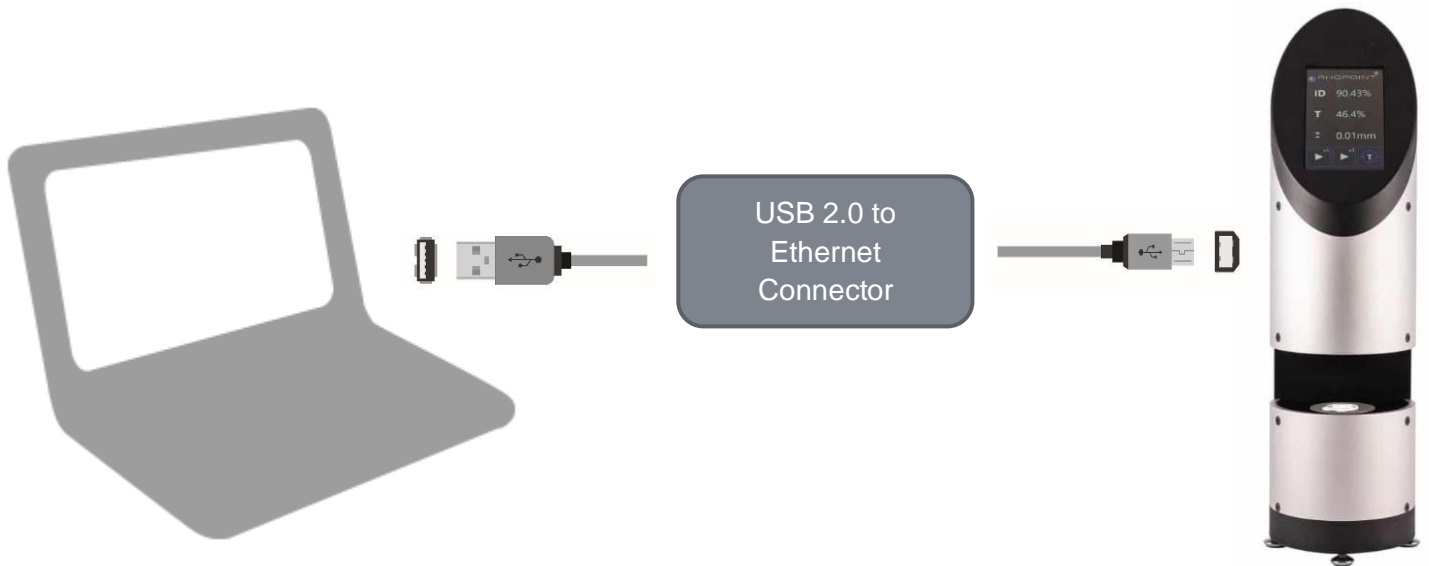
Setup

Once installed the software will automatically run and the IDTX folder can be deleted from the desktop.



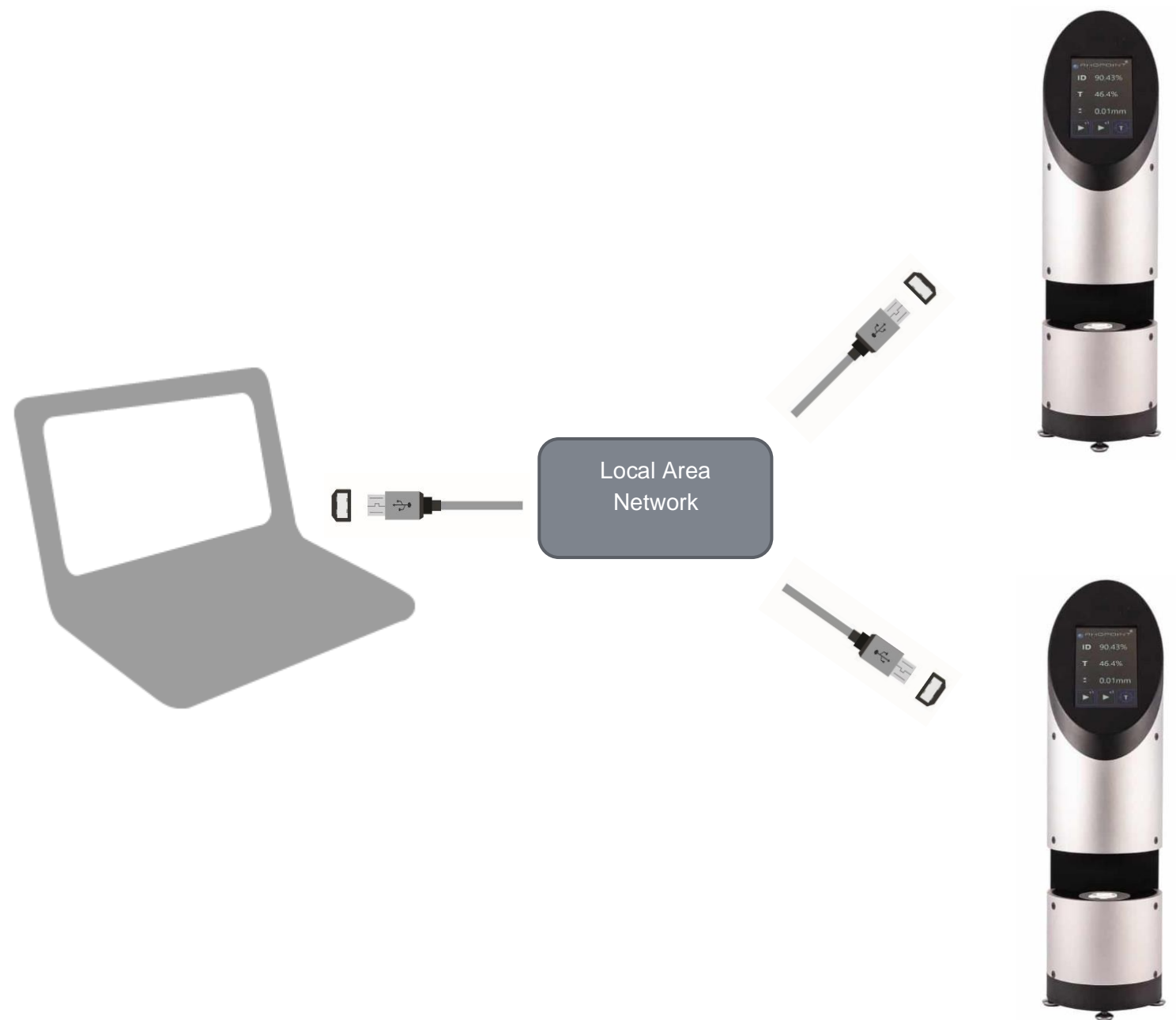
Connecting the Instrument to the PC

Direct connection: use the provided USB 2.0 (or similar) adaptor to connect the Rhopoint ID to the PC using the provided ethernet cable.

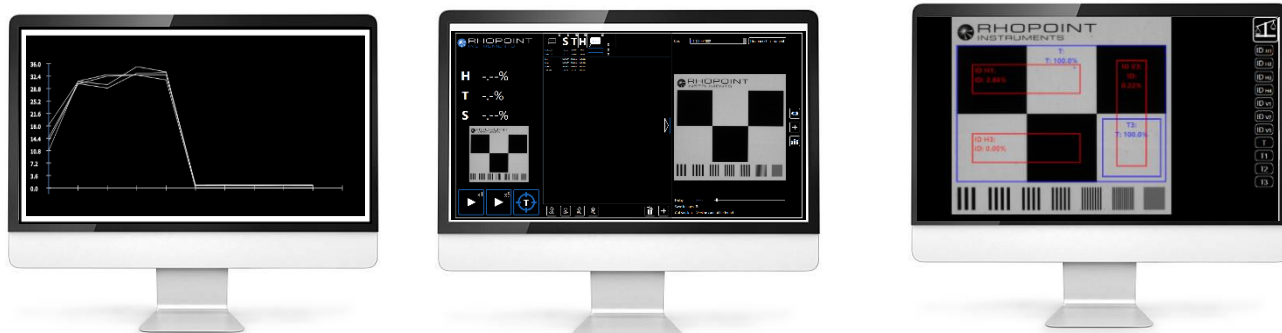


LAN Connection: the software can operate multiple instruments which are connected to a local network.

Connect the instrument directly to the required network using the provided ethernet cable (or similar).



Using the IDTX Software on Multiple Screens



Rhopoint IDTX Software supports the use of multiple screens for operation, viewing and manipulating data, comparing images and viewing graphs.

For effective data analysis it is preferable to run the software on a PC with multiple monitors.

Rhopoint ID-L Transmission Appearance Analysis Software

Installation

The software is located on the supplied USB drive, the required files are located in the IDTX folder.

Copy the IDTX folder to your desktop.

Double click on the setup.exe located in the IDTX folder to begin installation.

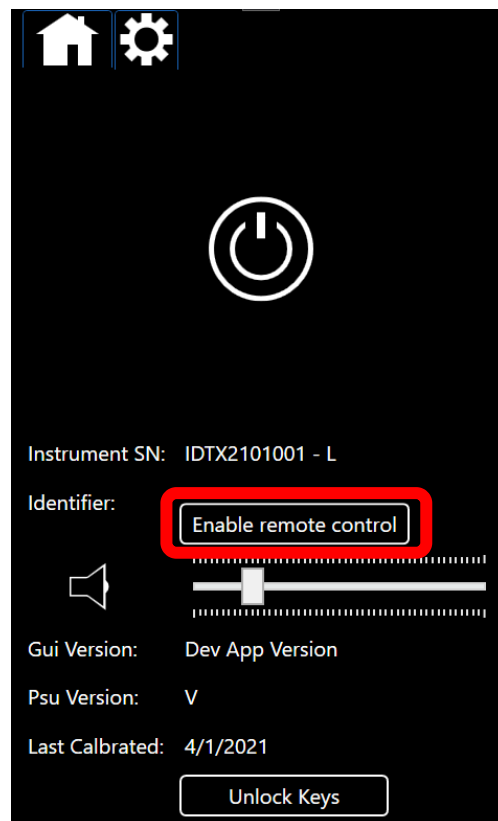
PLEASE NOTE THAT DURING INSTALLATION YOUR PC MAY RESTART WITH NO WARNING, ENSURE ALL WORK IS SAVED BEFORE PROCEEDING

Setup

Once installed the software will automatically run and the IDTX folder can be deleted from the desktop.

Setting Up the Connection

1. Power up the ID instrument and click the settings button on the instrument touch screen.



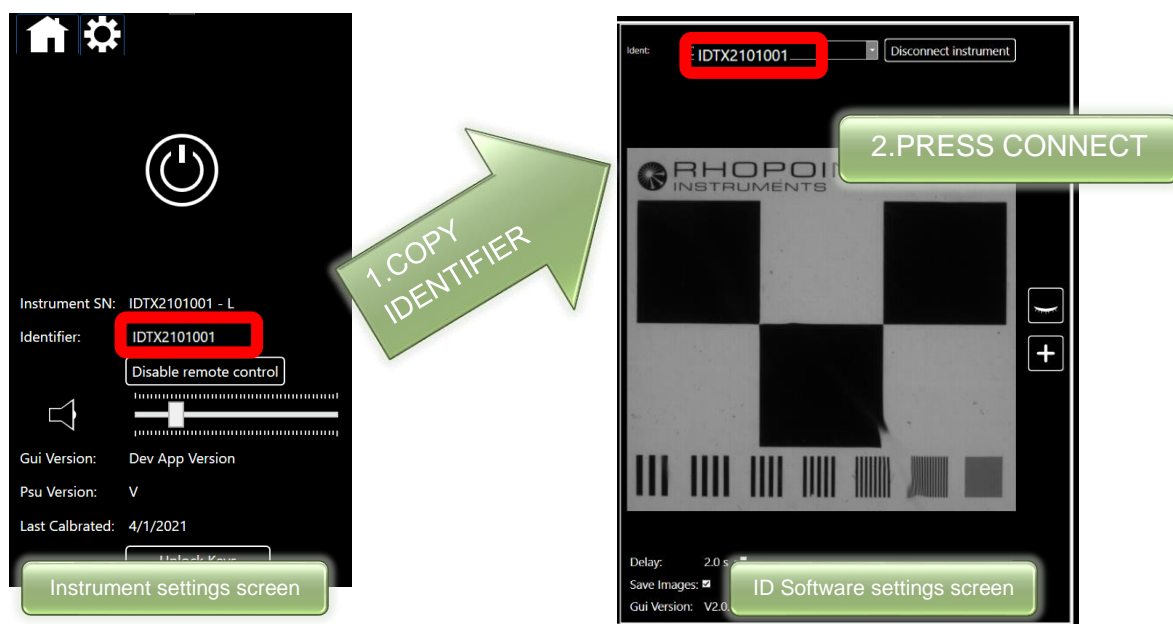
1. Click on the Enable remote control button

2. Now expand the settings tab **on the PC software**.



3. Type the identifier from the instrument set up screen into the ident box on the PC software- then press “connect”

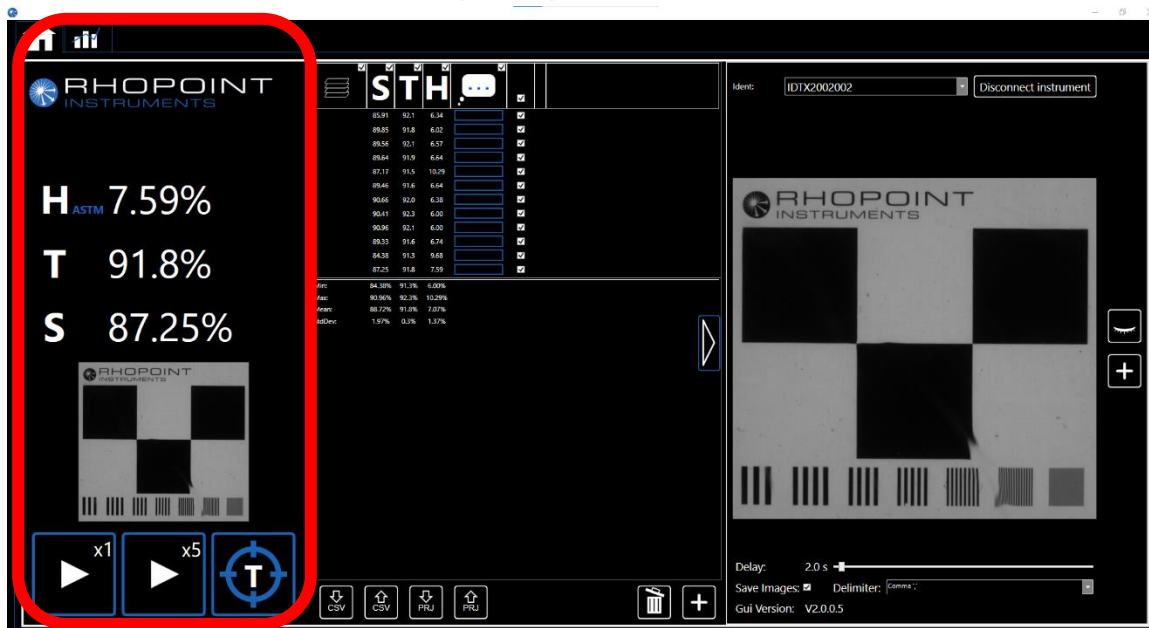
4.



NOTE: If the instrument is connected via a LAN the text .local may need to be added directly after the instrument serial number (no space)

The instrument and software will connect- the TARE button on the instrument and software will turn from grey to blue.

Navigating the ID Software



ID Instrument View

The left panel in the instrument software replicates the touch screen of the instrument and has similar functionality. Interacting with software instrument view screen will change the on screen display and vice-versa, the information remains synchronized during operation.

1. Buttons-

- Mouse click the “play” buttons to begin single or multiple measurement operations.
- Click the (X5) on the top right of the multiple reading “play” button to change the auto-measurement batch size.
- Click and hold the tare button to tare the instrument (wait until the button has stopped spinning before releasing the mouse button)..

2. Measurement Parameters

- Click on the **T** or **W** icon to switch between transmission and waviness values.
- Click on the **S** or **C** icon to switch between sharpness and clarity values.

3. Live view/measurement image

The Instrument View includes a live view from the camera or a image from the selected/last taken measurement.

To select a measurement see- **ID Results Table- View a measurement.**

To switch on/off live view see- **ID Settings & Live View Console- Toggle Live View.**

ID Results Table



The center Panel of the software contains the results for all measurements taken in the current batch. The bottom section contains statistics for all the results listed in the table.

View a Measurement

Clicking a previously taken measurement in the table will update the **ID Instrument View** and the **ID Setting and Live View** with the results and image for the selected measurement. If the instrument is in Live View mode, the results will update but the camera will continue to show a live view of the graticule.

Deleting a Measurements

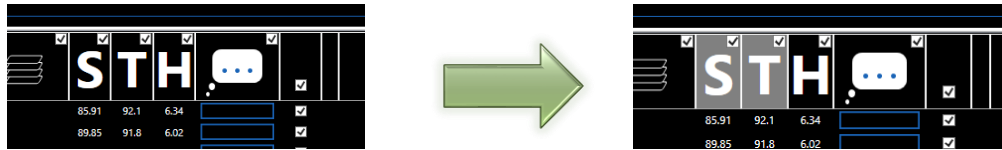
Pressing delete on a keyboard will delete the currently highlighted measurement.

Click in the tick box for each measurement will select it for deletion.

Pressing the trash can icon will delete all “ticked” measurements.

Display Graph

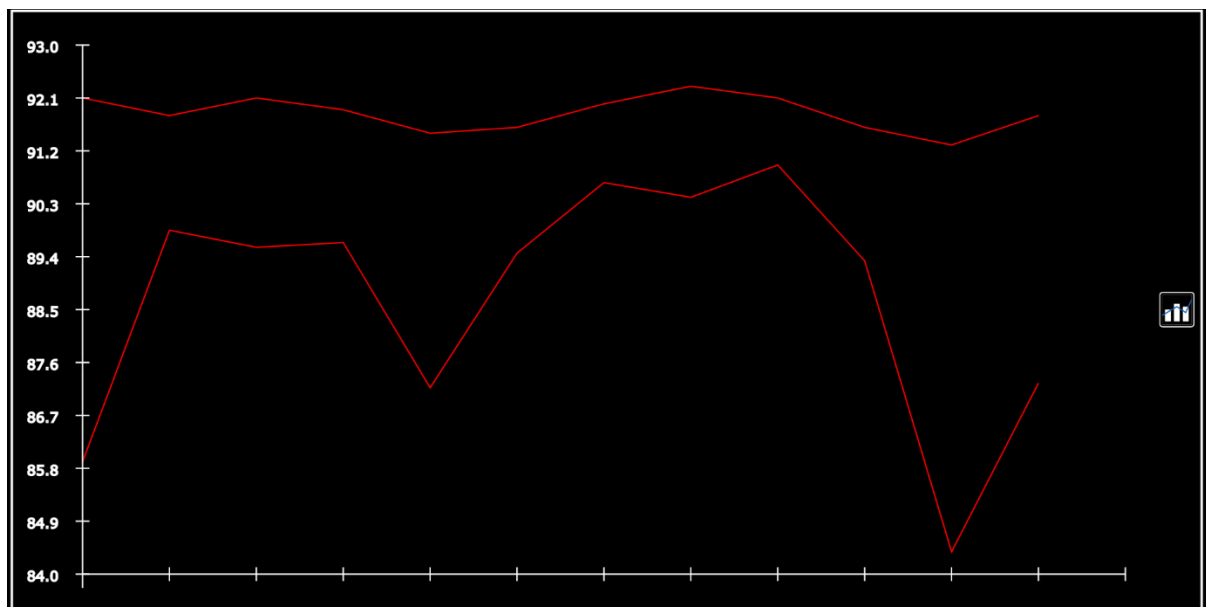
Select the parameters for graphing by clicking the header in the results table.



Click on the **Graph** tab



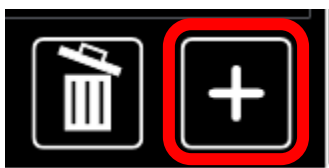
A graph of the selected parameters is displayed.

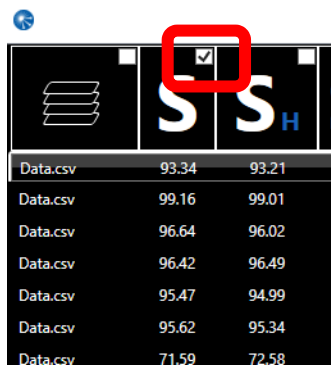


Customise the Results Table Parameters

The **Results Table** can be customized to any selected results or comments from the **Full Data Table**.

To view the Full Data Table- click on the “+” button next to the trash can.



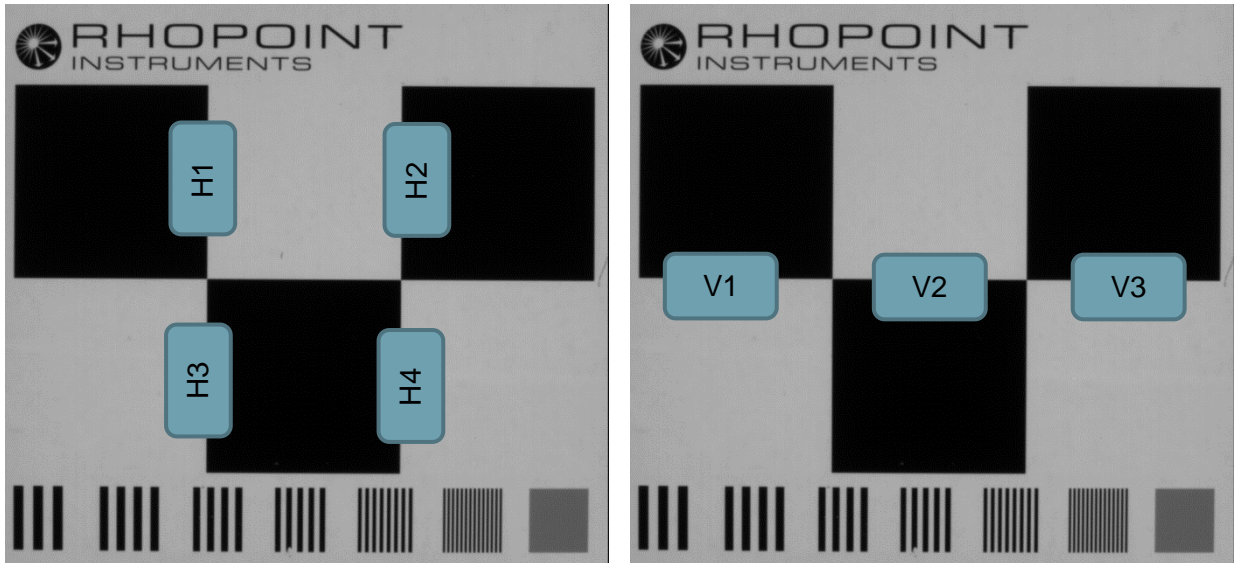


Data.csv	93.34	93.21
Data.csv	99.16	99.01
Data.csv	96.64	96.02
Data.csv	96.42	96.49
Data.csv	95.47	94.99
Data.csv	95.62	95.34
Data.csv	71.59	72.58

Clicking on the tick box in the top corner of any parameter will include/exclude it from the **ID Results Table**.

Full Data Table- all measurement Parameters

Sharpness, Clarity & Haze parameters are calculated from image analysis of 7 areas of the target graticule.



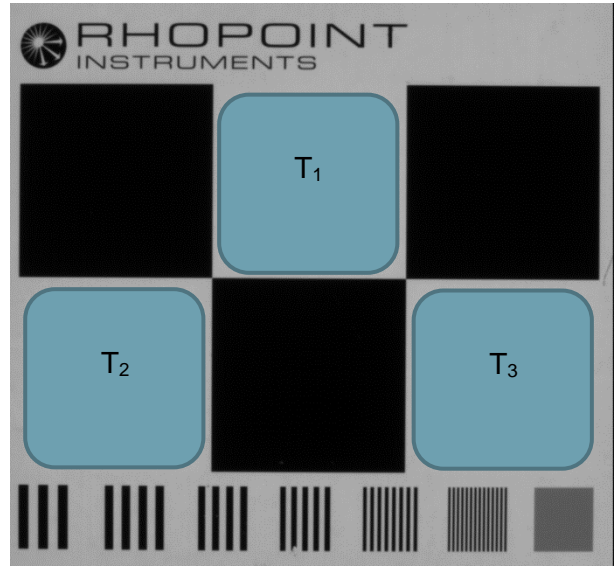
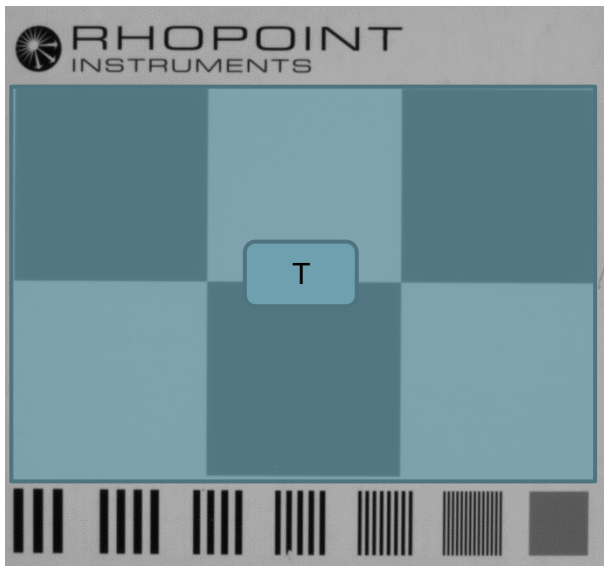
Haze

Symbol	Parameter	Calculation
H	Haze	Average of H_H & H_V
H_H	Horizontal Haze	Average of H_{H1} H_{H2} H_{H3} H_{H4}
H_V	Vertical Haze	Average of H_{V1} H_{V2} H_{V3} H_{V4}
H_{H1} H_{H2} H_{H3} H_{H4}	Horizontal Haze $H_{H1}, H_{H2}, H_{H3}, H_{H4}$	Calculated using Michelson contrast of B/W zones adjacent to edge transition
H_{V1} H_{V2} H_{V3} H_{V4}	Vertical Haze H_{V1}, H_{V2}, H_{V3}	Calculated using Michelson contrast of B/W zones adjacent to edge transition
S	Sharpness	Average of S_H & S_V
S_H	Horizontal Sharpness	Average of S_{H1} S_{H2} S_{H3} S_{H4}
S_V	Vertical Sharpness	Average of S_{V1} S_{V2} S_{V3} S_{V4}

$S_{H1} S_{H2} S_{H3} S_{H4}$	Horizontal Sharpness H1,H2,H3,H4	Calculated using edge spread function of vertical graticule edges
$S_{V1} S_{V2} S_{V3} S_{V4}$	Vertical Sharpness V1,V2,V3	Calculated using edge spread function of horizontal graticule edges
W	Waviness	Average of W_H & W_V
W_H	Horizontal Waviness	Average of $W_{H1} W_{H2} W_{H3} W_{H4}$
W_V	Vertical Waviness	Average of $W_{V1} W_{V2} W_{V3} W_{V4}$
$W_{H1} W_{H2} W_{H3} W_{H4}$	Horizontal Waviness H1,H2,H3,H4	Calculated using edge deformation analysis
$W_{V1} W_{V2} W_{V3} W_{V4}$	Vertical Waviness V1,V2,V3	Calculated using edge deformation analysis
C	Clarity	Average of H_H & H_V
C_H	Horizontal Clarity	Average of $C_{H1} C_{H2} C_{H3} C_{H4}$
C_V	Vertical Clarity	Average of $C_{V1} C_{V2} C_{V3} C_{V4}$
$C_{H1} C_{H2} C_{H3} C_{H4}$	Horizontal Clarity H1,H2,H3,H4	Calculated using regression analysis- C% (BYK) vs. ID Sharpness
$C_{V1} C_{V2} C_{V3} C_{V4}$	Vertical Clarity V1,V2,V3	Calculated using regression analysis- C% (BYK) vs. ID Sharpness

Transmission

Transmission values are calculated using the following zones



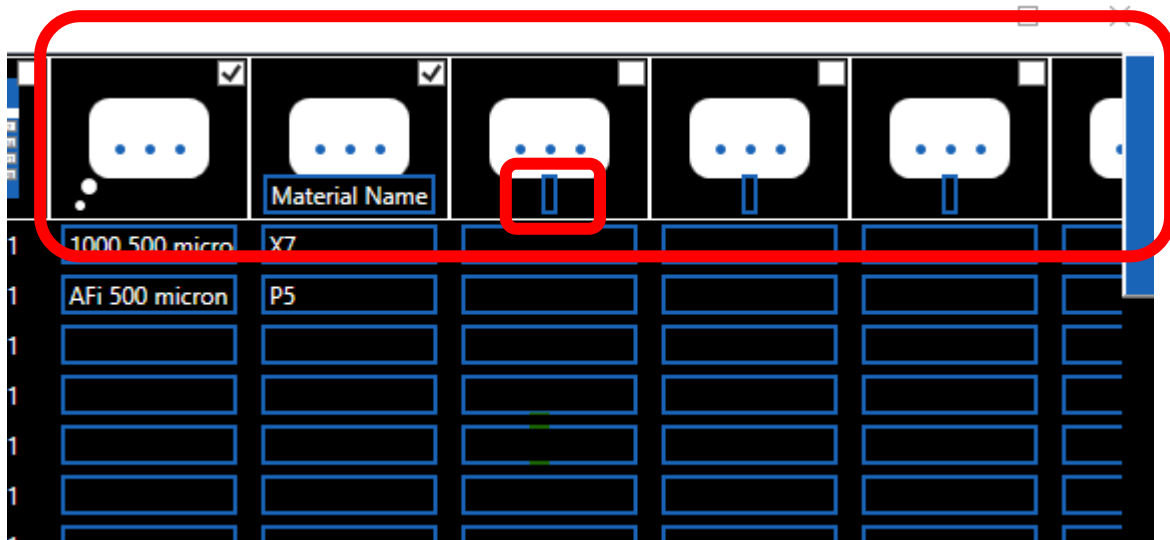
Symbol	Parameter	Calculation
T	Transmission	Pixel intensity full graticule area/ Pixel intensity tare image
T ₁	Transmission zone 1	Pixel intensity area T ₁ / Pixel intensity T ₁ tare image
T ₂	Transmission zone 2	Pixel intensity area T ₂ / Pixel intensity T ₂ tare image
T ₃	Transmission zone 2	Pixel intensity area T ₃ / Pixel intensity T ₃ tare image

User Defined Columns

The Rhopoint ID software has 6 fields where customers can input their own process data to improve traceability during data analysis.

The first column has a fixed name “Comments” all other fields can be named by the user- these names will be transferred to the data output .csv.

Click into the small blue box under the speech bubble to input a field name.



View Statistics- Statistics are shown for all measurements in the data table.

	H	T	S				
	16.18	75.2	46.17	---	55:37		
	16.31	75.2	48.39	---	55:41		
	16.10	75.1	45.30	---	55:44		
	16.27	75.2	47.24	---	55:48		
	16.32	75.2	47.20	---	55:51		
	16.39	75.2	45.03	---	56:01		
	15.86	75.2	46.98	---	56:06		
Min:	15.86%	75.1%	45.03%				
Max:	16.39%	75.2%	48.39%				
Mean:	16.20%	75.2%	46.62%				
StdDev:	0.17%	0.0%	1.10%				

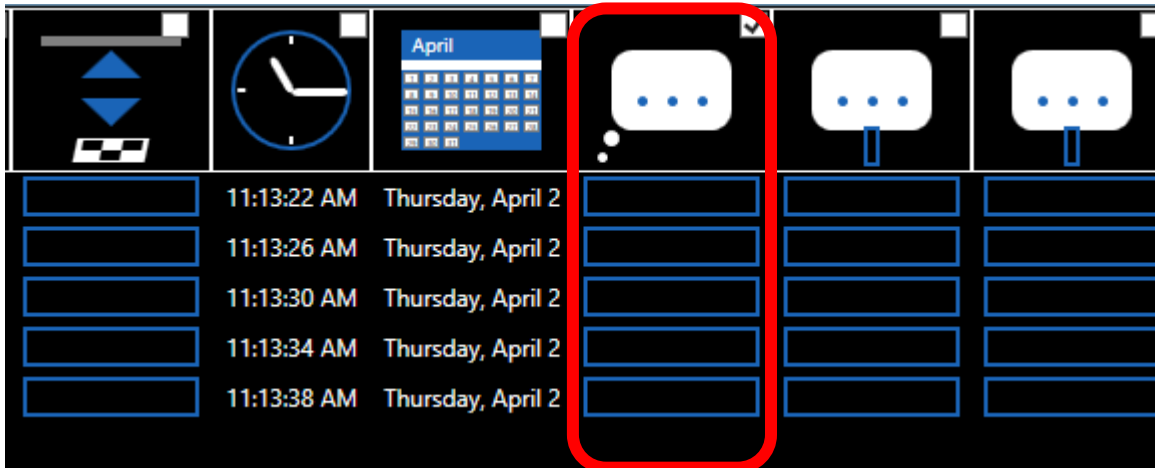
Add measurement distance- To add a measurement distance to the measurement data the distance text box should be used.

	11:13:22 AM	Thursday, April 2				
	11:13:26 AM	Thursday, April 2				
	11:13:30 AM	Thursday, April 2				
	11:13:34 AM	Thursday, April 2				
	11:13:38 AM	Thursday, April 2				

Add a comment- To add a comment to the measurement data the comments text box should be used.

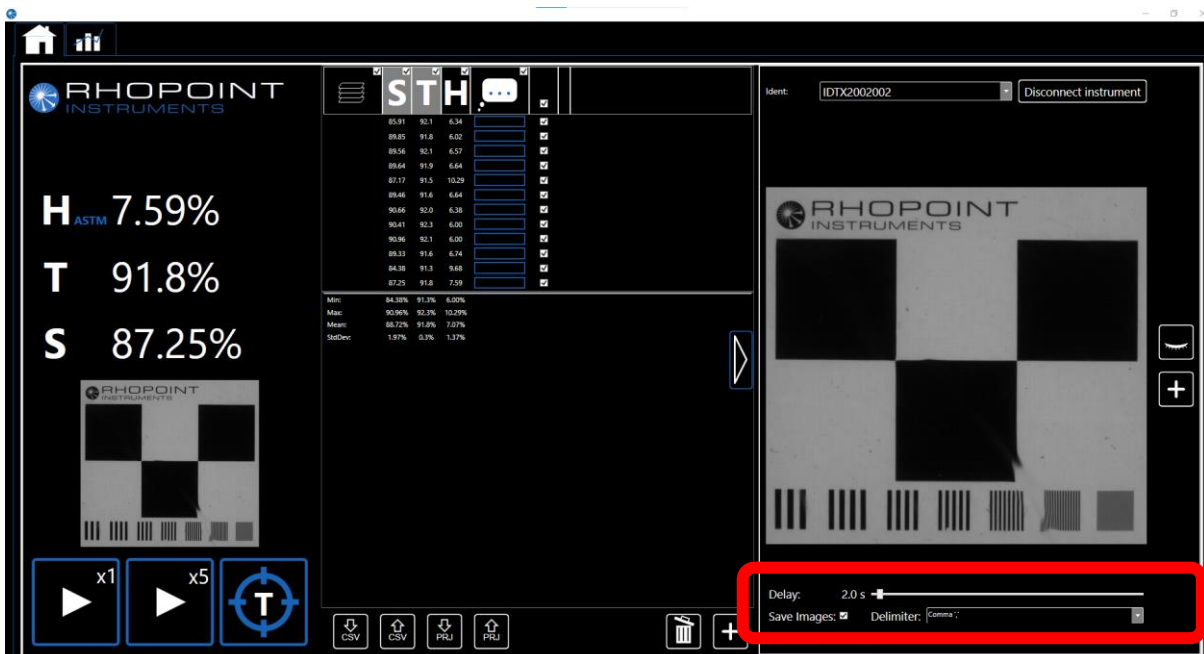
	H	T	S				
	16.18	75.2	46.17	---	07:55:37		
	16.31	75.2	48.39	---	07:55:41		
	16.10	75.1	45.30	---	07:55:44		
	16.27	75.2	47.24	---	07:55:48		
	16.39	75.2	45.03	---	07:56:01		
	15.86	75.2	46.98	---	07:56:06		
Min:	15.86%	75.1%	45.03%				
Max:	16.39%	75.2%	48.39%				
Mean:	16.20%	75.2%	46.62%				
StdDev:	0.17%	0.0%	1.10%				

As each new measurement is taken it is added to the bottom of the table.

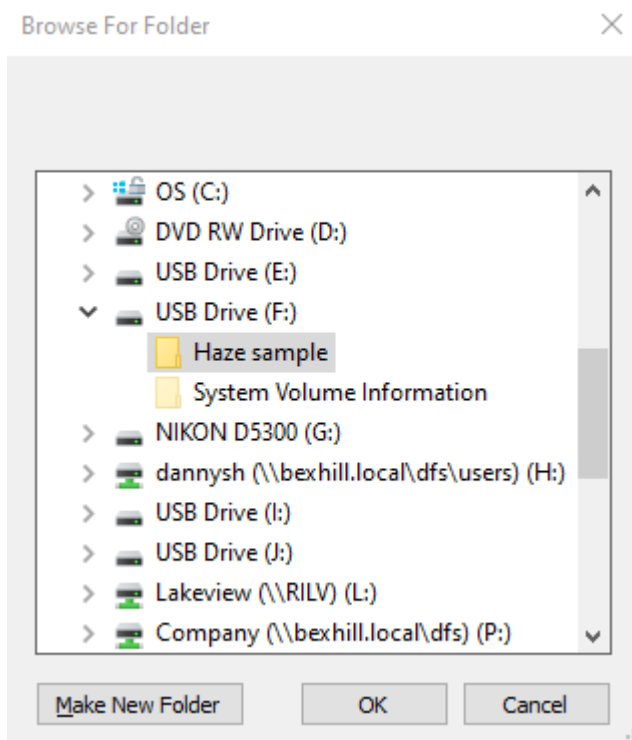


Save/Export Data- To save the readings and all associated images, click the SAVE Project button (PRJ) or to save the data only press the SAVE CSV button

Delimiter- The data will be saved with the selected delimiter- this can be changed using the drop down menu to suit regional PC settings.



When saving a project (Images and data) you will be presented with a create new folder window, simply name the new folder and click the folder icon and then press OK. The folder will contain all of the images and the data in csv format.



When saving a CSV it will be a single file containing all of the data.

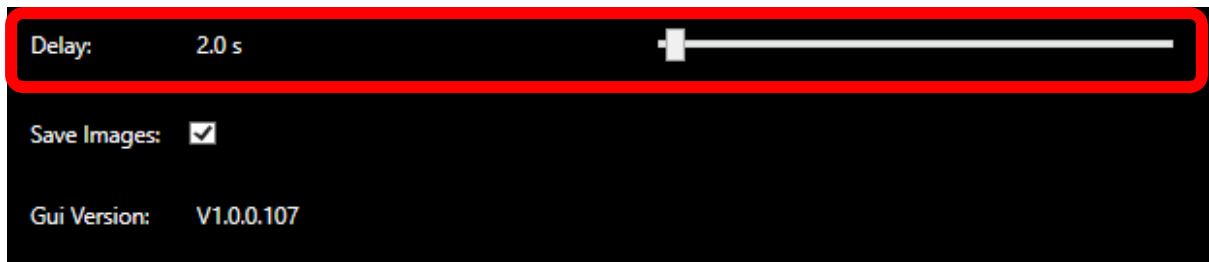
Load measurements- To load additional data into the table, press the LOAD Project or CSV button, this data is added to the bottom of the data table, use this feature to combine and compare batches. To view saved data in isolation- first clear the table.



Clear the Table- To clear all data from the table press the BIN icon.



To adjust the delay between readings adjust the slider in the viewing window.

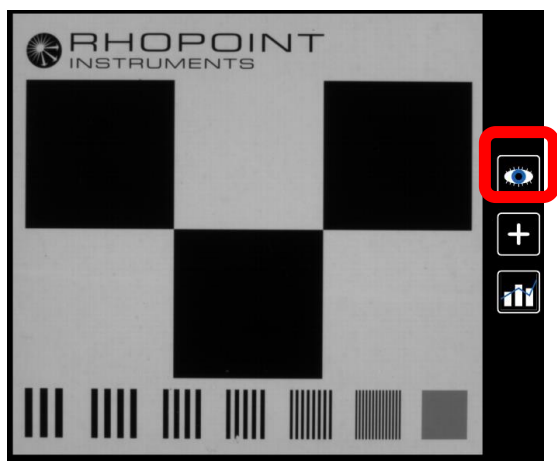


IDTX Software – Live-view and Captured Images

Click on the EYE icon to toggle on/off the camera live view.

The live-view is useful for positioning samples before measurement.

Note- With live view switched **on** it is not possible to view images of saved measurements.



IDTX Software – Visual Analysis of Results: Sharpness

Click in the data table to select images of previous measurements.

Once a measurement is selected the keyboard arrow keys can be used to quickly review all the images and measurements.



The images recorded by the IDTX meter are correlated to the viewing sensation when observing an object through the test material.

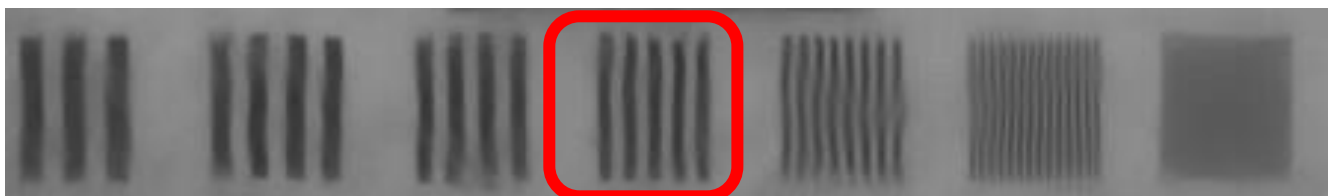
Sharpness - The graticule has a visual scale for comparison and visualisation of Sharpness.

High Sharpness - Sharp view of object (S-95%)



In the (above) captured image the lines in frequency pattern 6 are visible and undistorted.-

Low Sharpness - Fuzzy- out of focus object.(S 30%)

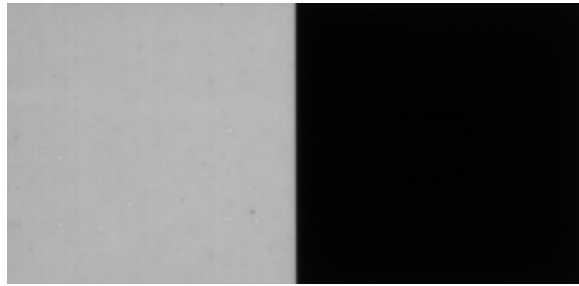


In the (above) captured image the lines in frequency pattern 4 are visible and undistorted.

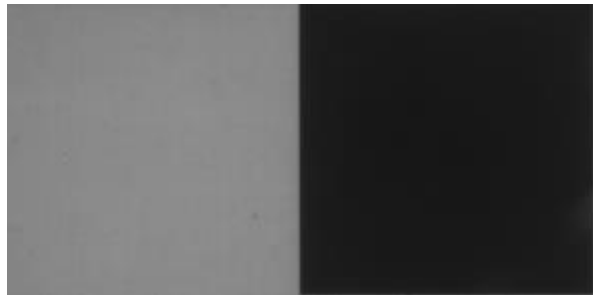
IDTX Software – Visual Analysis of Results: Haze

Low HAZE (1.2%)- Material is less visible, viewed object has high contrast.

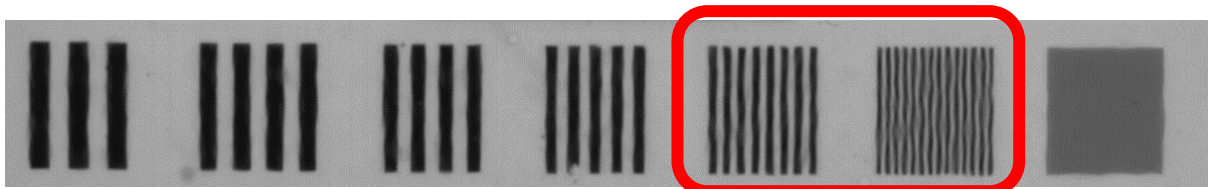
The black and white squares of the graticule have high contrast when compared.



High Haze (28.35%)- The material has a white or milky appearance; the viewed object has low contrast. The black and white graticule squares have less contrast and appear greyer.



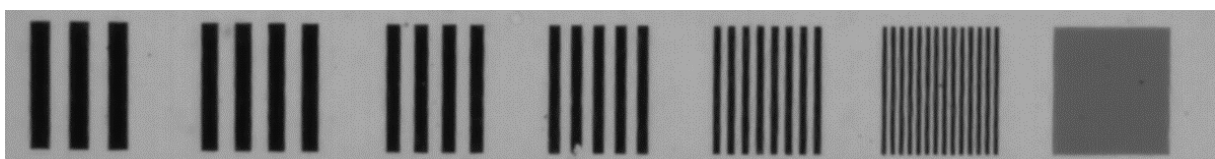
IDTX Software – Visual Analysis of Results: Waviness



Plastic materials can exhibit local surface effects such as orange peel which can be seen as small waves when a pattern or object is viewed through the material.

The picture above shows the visual evaluation line pairs on the graticule- orange peel is causing the graticule to appear wavy (19 μ m SD waviness).

The picture below shows the visual evaluation line pairs on the graticule- there is very little waviness for this sample- (3.5 μ m SD waviness).



IDTX Software – Expanding the Viewing Window



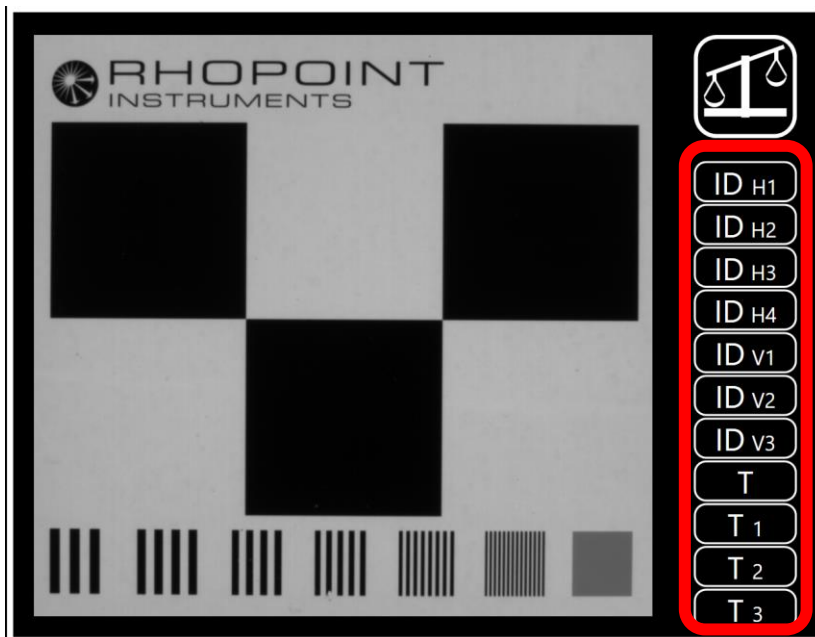
Click on the + icon to expand the image window.

The image for the measurement selected in the data table is expanded

Sharpness is calculated from average of 7 individual zones.

It is possible to view the Sharpness for each individual zone using the toggle buttons on the right.

If horizontal values are different from vertical values it is an indication of anisotropy (visible directionality) in the material



The on instrument T value is calculated using the transmitted light through all black and white areas- this area can be viewed by toggling the T button.

Three smaller white only transmission areas are also available by toggling T1-T3.

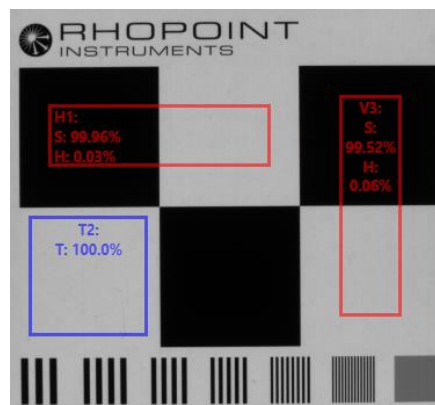
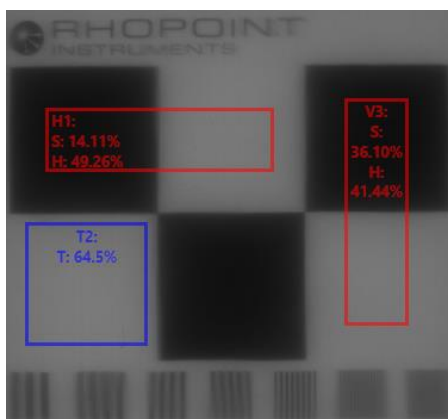
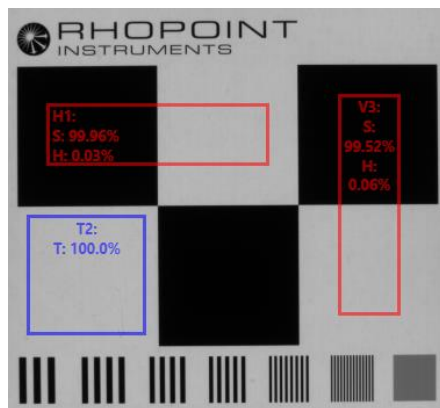
Comparing Multiple Images



Click on the compare icon in the expanded image window.

The software will replicate and fix the current view.

Multiple windows can be opened to visually compare different materials.



IDTX Notes

EU DECLARATION OF CONFORMITY

WE Rhopoint Instruments Ltd, Rhopoint House,
Enviro 21 Park, Queensway Avenue South,
St Leonards on Sea, East Sussex, TN38 9AG

DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE PRODUCT

ID Imaging Transmission Appearance Meter

**TO WHICH THIS DECLARATION RELATES ARE IN CONFORMITY WITH THE
FOLLOWING STANDARDS**

EN 61326-1:2013
EN 61000-4-2:2009
EN 61000-4-3:2006
EN 61000-4-4:2012
EN 61000-4-11:2004
EN 61010-1: 2010
EN 50581:2012

FOLLOWING THE PROVISIONS OF DIRECTIVES

2014/30/EU Electromagnetic Compatibility (EMC Directive)
2011/65/EU Restriction of hazardous substances (RoHS Directive)

Rhopoint Instruments Ltd
10/10/2019



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Tony Burrows, Managing Director