

# haze-gard i

## The objective standard for a clear view

Transparent products can have a milky or fuzzy appearance dependent on their light scattering behavior. The haze-gard i quantifies the visual perception with objective measurement criteria:

- Total transmittance
- Transmission haze
- Clarity

haze-gard i controls complete transparency by taking only one reading.



## Global communication

Haze and transmittance control according to international standard methods with one unit:

- ASTM D1003 - illuminants C and A  
Non-compensated method
- ISO 13468 - illuminant D65  
Compensated method

haze-gard i displays all results simultaneously - well prepared for any customer specification.

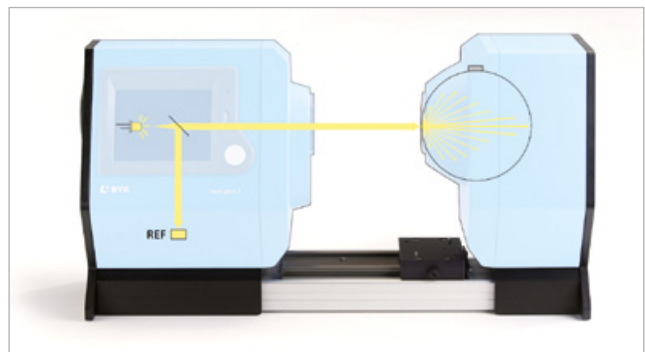


## Reliable and Precise

With state-of-the-art optics and LED technology the haze-gard i delivers an unprecedented performance:

- Reference beam, self-diagnosis and enclosed optics
- LED light source assures long-term stable results for many years: 10 year warranty on the lamp life!
- Automatic, long-term calibration - operator friendly and safe

Superior repeatability and inter-instrument agreement are guaranteed.



## Smart and Fast

The new touch display is designed to be intuitive and easy to use for any task:

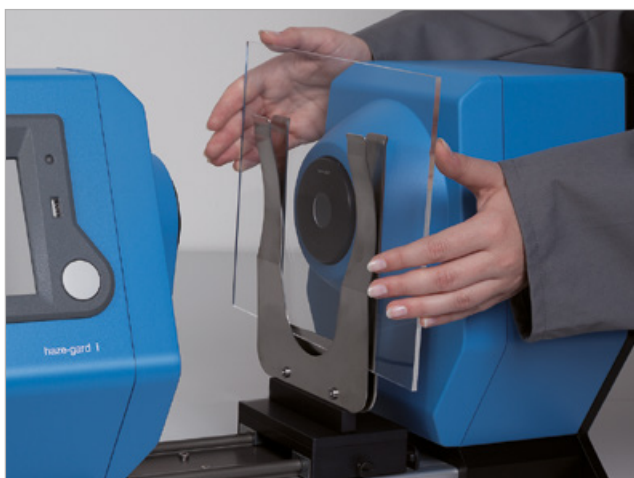
- Large touch display in color
- Symbols to select a menu function
- Dedicated measurement button
- Foot switch allows hands-free operation



## Open and Flexible

The open measurement compartment let's you work freely to analyze any sample size:

- Open design for small and large specimens
- Fast change and positioning of samples
- No influence of ambient light
- Versatile sample holder for films and sheets
- Sample holders for taber abrasion test and cuvettes for liquids optional
- Customized sample holders can be easily attached



## Horizontal or vertical set-up

Sample handling in any position is convenient and allows you highest flexibility.



## Onboard analysis

Measurement data can be analyzed and saved in projects directly in the haze-gard i for efficient work management:

- Large instrument memory (5000 readings)
- Complete statistics with averaging, min / max, standard deviation
- Limit input for different product specifications with colorful Pass/Fail analysis



## Professional connection

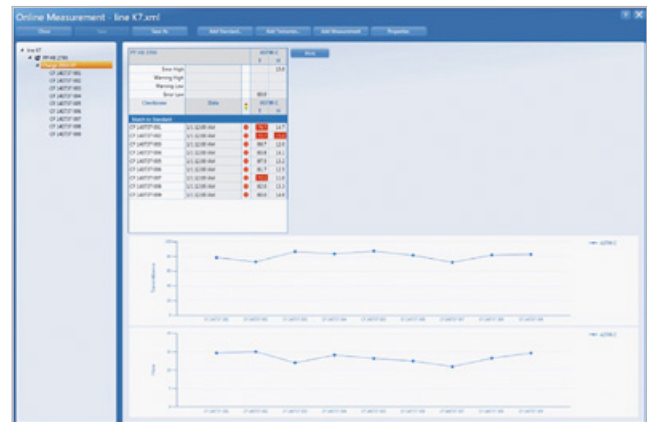
Data transfer can be performed in all sorts of ways to support you in routine lab work:

- Direct data transfer via USB-port to PC
- Direct LAN connection to your network for further analysis in Laboratory Information Management Systems (LIMS)
- Save data on a USB-stick

## smart-lab haze – data analysis software

Whatever the task, smart-lab haze will do it for you. From simple data tables of single test series to trend reports over time - anything is possible.

- Define your product specifications in standard management by setting up product groups with Pass/Fail limits
- Measure your products online and get instant QC reports displayed: Data table with statistic and line graph including Pass/Fail coloring
- Manage your lab work in projects to show production process stability using trend reports
- Transfer product specs and projects to haze-gard i and vice versa for daily work management





### Ordering Information

Cat. No.	Description
4775	haze-gard i

#### Comes complete with:

Hazemeter  
Guide carriage for sample holders  
Clarity calibration standard  
Traceable certificate  
Foot switch and power cable  
USB-cable and LAN-cable  
Software for download:  
smart-lab haze with 2 Licenses  
Operating manual  
Training

#### System requirements:

Operating system: Windows 7 SP1, 8.1 or 10  
Microsoft® .NET Framework 4.5.2  
Hardware: Core 2 Duo, 2.5 GHz, i7 recommended, or equivalent  
Memory: 4 GB RAM, 8 GB recommended  
Hard-disk capacity: 2 GB during installation  
Monitor resolution: 1280 x 1024 pixel or higher  
Interface: free USB-port or network access

### Training

BYK-Gardner offers you more than just an instrument. We train you in the operation of the haze-gard i and data analysis. A half-day training course for haze-gard i operation and smart-lab haze software is included.

### Standards

ASTM	D 1003, D 1044
ISO	13468, 14782

### Technical Specifications

<b>Illuminants</b>	CIE-C, CIE-A (ASTM D1003) CIE-D65 (ISO 13468, ISO 14782)
<b>Spectral Response</b>	CIE luminosity function y
<b>Geometry</b>	0° / diffuse
<b>Measurement Area</b>	ø 18 mm (0.7 in)
<b>Sample Port</b>	ø 25.4 mm (1.0 in)
<b>Measurement Range</b>	0 - 100 %
<b>Repeatability</b>	± 0.1 units (standard deviation)
<b>Reproducibility</b>	± 0.4 units (standard deviation)
<b>Memory</b>	5000 readings
<b>Interface</b>	LAN, USB 2.0, additional front USB-port for memory stick
<b>Power Supply</b>	115 V / 230 V self adapting
<b>Operating Temperature</b>	+10 to 40 °C (+50 to 104 °F)
<b>Storage Temperature</b>	0 to 50 °C (+32 to 122 °F)
<b>Dimensions</b>	62 x 33 x 22 cm (24 x 13 x 9 in)
<b>Weight</b>	18 kg (40 lbs)

## Versatile sample holders for specific needs



Sample holder for films and sheets.  
The precision guide carriage allows  
easy replacement of different holders.



Special holder for very thin films.

### Ordering Information

Cat. No.	Description
4788	Sample holder, for 4775
4784	Thin Film Holder, for 4775
4785	Taber Abrasion Holder, for 4775
4786	Cuvette Table, for 4775
6180	Cuvette for Liquids, 2.5 mm
6182	Cuvette for Liquids, 5 mm
6183	Cuvette for Liquids, 10 mm
6189	Cuvette for Liquids, 20 mm
4865	BYKWARE smart-lab haze

### Accessories

For films and sheets
Special holder for very thin films
For evaluation of abrasion resistance with the hazemeter
For measurement of liquids
Path length 2.5 mm, edge length 50 mm
Path length 5.0 mm, edge length 50 mm
Path length 10 mm, edge length 50 mm
Path length 20 mm, edge length 50 mm
Software for professional analysis and documentation



The measurement of haze is used to determine abrasion resistance of transparent materials. The haze-gard i Abrasion Holder facilitates positioning of the abraded area in the measurement beam.



Liquids are best measured using cuvettes and the cuvette table.



## Ordering Information

Cat. No.	Description
<b>4776</b>	Clarity Calibration Standard, for 4775
<b>4777</b>	Clarity Reference Standard, for 4775
<b>4790</b>	Haze Standard 1, for 4775
<b>4791</b>	Haze Standard 5, for 4775
<b>4792</b>	Haze Standard 10, for 4775
<b>4793</b>	Haze Standard 20, for 4775
<b>4794</b>	Haze Standard 30, for 4775
<b>4795</b>	Haze Standard Set, for 4775
<b>4778</b>	Transmittance Standard 10, for 4775
<b>4779</b>	Transmittance Standard 30, for 4775
<b>4780</b>	Transmittance Standard 50, for 4775
<b>4781</b>	Transmittance Standard 70, for 4775
<b>4782</b>	Transmittance Standard 90, for 4775
<b>4783</b>	Transmittance Standard Set, for 4775

## Accessories

Replacement Standard for clarity, certificate included
Test standard for checking purposes, certificate included
Approx. 1% haze, for checking purposes, certificate included
Approx. 5% haze, for checking purposes, certificate included
Approx. 10% haze, for checking purposes, certificate included
Approx. 20% haze, for checking purposes, certificate included
Approx. 30% haze, for checking purposes, certificate included
Set of 5 pieces in hard box, certificate included
Approx. 10% total transmittance, for checking purposes, certificate included
Approx. 30% total transmittance, for checking purposes, certificate included
Approx. 50% total transmittance, for checking purposes, certificate included
Approx. 70% total transmittance, for checking purposes, certificate included
Approx. 90% total transmittance, for checking purposes, certificate included
Set of 4 pieces in hard box (T30, T50, T70, T90), certificate included