

Color Testing - Colorimeter 195/2 > Replaced by 16-3194

ASTM D 156, ASTM D 1209, ASTM D 1500, ASTM D 5386, ASTM D 6045, ASTM E 308, ISO 2049, ISO 6271, DIN 51411, DIN 51578 (obs.), FTM 791-0102 (obs.), IP 196, JIS K2580, NF M07-003, NF T60-104 (obs.)

Product group(s): Food, Fuel, Oil, Various

User group(s): Aviation Fuel, Benzene, Biodiesel, Biofuel, Chemicals, Diesel, Dyes, Engine Oil, Fuel, Gasoline, Hydraulic Fluid, Insulating Oil, Jet Fuel, Jet Lube, Kerosene, Light Oil, Lubricating Oil, Mineral Oil, Naphtha, Oil, Solvent, Turbine Fuel, Turbine Oil, Various

Scope: The color determination is used mainly for manufacturing control purposes. It is an important quality characteristic. The color may serve as an indication of the degree of refinement or indicate a possible contamination.

A colorimeter automatically measures the color of transparent samples according to a defined color scale. Results will be displayed in terms of nominal color values, CIE values and spectral data.

Additional standards can be added by **Color Scale Upgrades Kits**.

For the **verification** of the colorimeter the sample will be replaced by certified colored glass filters or reference fluids.

Reference Filters allow quick and simple conformance checks.

Reference Liquids are suitable for routine calibration, test data verification and to ensure good inter-laboratory & inter-instrument correlation.

- **ASTM Color Scale**
- **Saybolt Color Scale**
- **Tristimulus Method**
- **Pt-Co-/Hazen-/APHA Scale**
- **Gardner Color Scale possible**
- **CIE-Values & Spectral Data**
- **PC-Software included**

Tristimulus Method

covers the automatic determination of the color according to ASTM & Saybolt Color Scale Method

ASTM Color

for a wide range of petroleum products (incl. lubricating oils, heating oils, diesel oils etc.)

Saybolt Color

for colorless to slightly yellowish petroleum products (incl. aviation fuels, kerosine, mineral oils, hydrocarbon solvents, petro-waxes etc.)

Platinum-Cobalt / Hazen / APHA Color

for clear to dark amber colored liquids (like petroleum spirits, solvents and alcohols or oils, petrochemicals, water etc.)

Gardner Color

for pale yellow to red colored oils and chemicals (like resins, varnishes, drying oils, fatty acids etc.)



Automatic Colorimeter (195/2)

for the examination of liquid samples (<40°C) in an optical glass cuvette

Note: Reference filters or liquids may have to be ordered additionally to a color scale.

Technical Data

Measuring Principle:	9 interference filters, 420 - 710 nm
Path length:	0.1 - 50 mm
Illuminant:	A, C, D65
Interfaces:	1 parallel for printer & 1 RS232 for PC
Dimensions (WxDxH):	435 x 195 x 170 mm
Weight:	6.8 kg

Main Unit

16-2194	<p>Automatic Colorimeter 195/2 <u>Tristimulus Method</u> (automatic): ASTM D 6045 (Saybolt Color Scale & ASTM Color Scale)</p> <p><u>ASTM Color Scale</u>: ASTM D 1500 - JIS K2580 - IP 196 - ISO 2049 (former DIN 51 578 - FTM 791b-102 - NF T 60-104)</p> <p><u>Saybolt Color Scale</u>: ASTM D 156 - DIN 51 411 - JIS K2580 - NF M 07-003</p> <p><u>Pt-Co / Hazen / APHA Scale</u>: ASTM D 1209 - ASTM D 5386 - ISO 6271</p> <p><u>CIE Values</u>: (former ASTM E 308) X Y Z-tristimulus values, x y Y-chromaticity co-ordinates, L*a*b*-color space, DeltaE-color difference</p> <p>Upgradeable with: <u>Gardner Color</u>: ASTM D 1544 - ASTM D 6166 <u>Lovibond</u>: L*C*h* color space</p> <p>An automatic combination of ASTM Petroleum Oil Comparator & Saybolt Chromometer (ASTM D 6045 conform) with a limited measuring range (9 filters, max. path length 50 mm).</p> <p>Suitable for: fuel oil, diesel/gas oil, lubricating oil - aviation fuels, kerosine, mineral oil, solvent - oil, chemicals</p> <p><u>Consisting of</u>: Steel housing with solvent resistant enamel, 2-line LCD, membrane keypad, sample chamber and - 3 color scales (ASTM - Saybolt - Pt-Co-/Hazen-/APHA) - 4 CIE values - spectral data: transmittance & optical density (full spectrum and at specified wavelengths)</p> <p><u>Supplied with</u>: 2 cuvettes, optical glass (1 x 33 mm, 1 x 50 mm) 1 reference filter, calibrated (ASTM 3.5) 1 spare light bulb 1 PC-software (Windows) for control by PC or for saving and evaluation of test data</p> <p>Power supply: 115 / 230 V, 50/60 Hz</p>
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Options & Accessories

16-2178	<p>Reference Filters - ASTM Color, set of 3 <u>Nominal values (ISO 9001 certified)</u>: 0.5 / 3.5 / 5.0</p>
16-2259	<p>Reference Liquid - ASTM Color (0.5) 500 ml bottle, UKAS certificate, color stability about 1 year <u>Nominal value (officially certified)</u>: 0.5</p>
16-2260	<p>Reference Liquid - ASTM Color (1) 500 ml bottle, UKAS certificate, color stability about 1 year <u>Nominal value (officially certified)</u>: 1</p>
16-2261	<p>Reference Liquid - ASTM Color (3) 500 ml bottle, UKAS certificate, color stability about 1 year <u>Nominal value (officially certified)</u>: 3</p>
16-2262	<p>Reference Liquid - ASTM Color (5) 500 ml bottle, UKAS certificate, color stability about 1 year <u>Nominal value (officially certified)</u>: 5</p>
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16-2195	<p>Reference Filters - Saybolt Color (model 195), set of 5 <u>Nominal values (ISO 9001 certified)</u>: -8 / 0 / +10 / +18 / +25</p>

16-2269	Reference Liquid - Saybolt Color (-10) 500 ml bottle, UKAS certificate, color stability about 1 year Nominal value (officially certified): -10
16-2266	Reference Liquid - Saybolt Color (0) 500 ml bottle, UKAS certificate, color stability about 1 year Nominal value (officially certified): 0
16-2267	Reference Liquid - Saybolt Color (+12) 500 ml bottle, UKAS certificate, color stability about 1 year Nominal value (officially certified): +12
16-2268	Reference Liquid - Saybolt Color (+25) 500 ml bottle, UKAS certificate, color stability about 1 year Nominal value (officially certified): +25

Spare Parts

16-2181	Cuvette, 33 mm (L 33 x W 21 x H 40 mm), optical glass (ASTM, Lovibond® RYBN Color)
16-2131	Cuvette, 50 mm (L 50 x W 21 x H 40 mm), optical glass (Saybolt, Pt-Co / Hazen / APHA Color = model 195), (Lovibond® RYBN = model 880/995), (RCMSi)
16-2180	Halogen Light Bulb (Tungsten) 5 V / 10 W

Order Guideline

Minimum equipment:	1x 16-2194, Conformance filter / Reference Liquid
Spares (approx. 1 year):	Cuvette, 16-2180
Additional requirements:	PC, printer