

**COLORIMETERS**

Colorimetry is the measurement of colour. Variations in the colour of a product can indicate differences in its purity, composition or deterioration. Seta-Lovibond colour comparators offer a choice of instruments suitable for all major colour test methods. The instruments are simple to use and eliminate the subjective assessment of colour associated with visual comparisons.

- Automatic operation
- Multiple colour scales including ASTM and Saybolt
- Rapid measurement < 25 seconds
- Objective colour measurement
- RS232 interface
- Integrated remote calibration



15260-4

**15260-4 SETA MULTICOLOUR AUTOMATIC COLORIMETER**

**ASTM D156; D1209; D1500; D5386; D6045; E308; IP 196; ISO 2049; ISO 2211; BS 2000 Part 196; BS 5339; BS 5859; FTM 791 102; DIN 51 411; NF T60-104; NF M07-003; JIS K2580**

An automated spectrometric colorimeter designed for rapid colour analysis of petrochemical products, the 15260-4 is selectable for Saybolt, ASTM, Pt-Co/Hazen/APHA, spectral data and CIE colour determinations.

Parameters are entered via a menu system, and subsequent testing is initiated by a single key press with results available within 25 seconds. Up to 32 results can be stored in the on-board memory. The instrument can also be controlled and data processed on an IBM compatible personal computer using the software provided.

**SUPPLIED WITH:** software, 33mm optical glass cell, 50mm optical glass cell, ASTM Colour 3.5 certified glass conformance filter, spare lamp, universal power supply and instruction manual.



SOFTWARE INCLUDED



CALIBRATION & VERIFICATION MATERIALS

**15320-2 SETA-LOVIBOND HIGH PRECISION COLORIMETER**

**ASTM D156; D1209; D1544; D1500; D6045; IP 17 Method A & B; IP 196; BS 5339; BS 5859; ISO 2049; DIN 51 411; NF M07-003; JIS K2580**

The 15320-2 is a high precision version of the 15260-4 Seta Multicolour Automatic Colorimeter. The instrument provides determinations in Saybolt colour, ASTM Colour, Pt-Co/Hazen/APHA Colour, Gardner Colour, Lovibond RYBN, IP Units, CIE values or spectral data.

An integral heater unit allows samples such as waxes to be maintained in a liquid state.

**SUPPLIED WITH:** software, 10mm, 100mm, 1 inch and 6 inch optical glass cells (one of each), Saybolt +10 calibrated glass conformance filter, spare lamp, universal power supply and instruction manual.



15320-2



SOFTWARE INCLUDED



CALIBRATION & VERIFICATION MATERIALS

Method	Colour Scale	15260-4	15320-2	Notes
ASTM D1500; D6045	ASTM Colour	0.5 to 8 Units	0.5 to 8 Units	Lubricating, heating and diesel fuel oils
ASTM D156; JIS K2580	Saybolt Colour	-16 (Darkest) to +30 (Lightest)	-16 (Darkest) to +30 (Lightest)	Light Coloured: Aviation Fuels, kerosenes, white mineral oils
ASTM D6045	Saybolt Colour	0 to 30	0 to 30	
ASTM D1209; D5386	Pt-Co/Hazen/APHA	0 to 500mg Pt/l	0 to 500mg Pt/l	Clear Liquids: Solvents, petroleum spirits, water
ASTM D1544; D6166	Gardner Colour	1 to 18 Units	1 to 18 Units	Pale Yellow to Red Liquids: Resins, varnishes, fatty acids
	Lovibond RYBN		R & Y = 0 to 70, B = 0 to 40, N = 0 to 3.9	
ASTM E308	CIE Values	Defined by spectrum locus		
Spectral Data (420 to 710nm)	Transmittance	0 to 100%	0 to 100%	Full spectrum and specified wavelengths
	Optical density	0 to 2.5	0 to 2.5	

COLORIMETERS

SPECIFICATIONS		
<b>Seta Part No:</b>	15260-4	15320-2
<b>Measuring Principle:</b>	9 interference filters	16 interference filters
<b>Spectral Response:</b>	420 to 710nm	
<b>Bandwidth:</b>	20nm	20nm
<b>Repeatability Chromaticity: (x,y)</b>	±0.0004	± 0.0002
<b>Transmittance:</b>	±0.5%	± 0.25%
<b>Saybolt Values:</b>		± 1
<b>Measurement times:</b>	Less than 25 seconds	
<b>Calibration:</b>	Single key press, fully automated	
<b>Light Source:</b>	5V, 10W tungsten halogen lamp	
<b>Illuminants:</b>	CIE Illuminant A, B, C, D65	
<b>Observers:</b>	2°, 10°	
<b>Path Length:</b>	0.1 to 50mm	0.1 to 153mm
<b>Heater Unit:</b>	N/A	95°C Max
<b>Interface:</b>	USB, LAN, RS 232 port	
<b>Data storage:</b>	32 Data sets	
<b>Input voltage:</b>	Universal via external power supply unit	
<b>Display:</b>	240 x 128 character back lit LCD	
<b>Keypad:</b>	23 key membrane keypad, washable polyester, with audible feedback	
<b>Instructions:</b>	9 languages - English, French, German, Italian, Spanish, Portuguese, Russian, Chinese and Japanese	
<b>Size (HxWxD):</b>	17 x 20 x 44cm	17 x 52 x 20cm
<b>Weight:</b>	7kg	8kg

ACCESSORIES – Seta Colorimeters

OPTIONAL - Multicolour Automatic	
15262-0	GARDNER COLOUR SCALE
CALIBRATION, VERIFICATION & TRAINING - Multicolour Auto. SETA CERTIFIED COLOUR STANDARDS, (for details see page 114).	
CALIBRATION, VERIFICATION & TRAINING - High Precision SETA CERTIFIED COLOUR STANDARDS, (for details see page 114).	
15301-0	ASTM COLOUR CONFORMANCE FILTERS, set of 3, (for details see page 114).
15302-0	SAYBOLT COLOUR CONFORMANCE FILTERS, set of 5, (for details see page 114).

CONSUMABLES – Seta Colorimeters

2 Years/2000 Tests - Multicolour Automatic		Qty
15260-303	OPTICAL GLASS CELL, 33mm (ASTM D1500)	1
15260-304	OPTICAL GLASS CELL, 50mm (ASTM D156)	1
15260-301	LAMP, 5V, 10W, lens ended	1
2 Years/2000 Tests - High Precision		Qty
15320-001	OPTICAL GLASS CELL, 100mm (Pt-Co/Hazen/APHA/Saybolt)	1
15260-303	OPTICAL GLASS CELL, 33mm (ASTM D1500)	1
15320-003	OPTICAL GLASS CELL, 6 inch (IP Units)	1
15320-004	OPTICAL GLASS CELL, 10mm (Gardner)	1
15260-301	LAMP, 5V, 10W, lens ended	1

15311-2 SAYBOLT UNIVERSAL CHROMOMETER

ASTM D156; DIN 51 411; FTM 791 101; NF M07-003

- Two section field of view
- Three position filter turret

A colorimeter with an integral light source, for visual determination of the colour of highly refined, un-dyed liquid petroleum products, including gasolines, jet fuels, naphthas and kerosines.

Comprises of a graduated glass sample column with a clear glass base, and a plain glass tube with a three position turret containing colour filter discs. An eyepiece provides a split-field view of both the column and tube. Illumination is from a light source in the base of the unit. The height of a column of sample is adjusted until it matches the colour disc in the reference tube. The height is then read off the graduations and expressed in Saybolt units.

SUPPLIED WITH: 3 whole-colour filter discs and 1 half-colour filter disc, daylight filter, mains lead and instruction manual.

SPECIFICATIONS			
<b>Voltage:</b>	220/240V, 50/60Hz	<b>Size (HxWxD):</b>	74 x 19 x 17cm
<b>Power:</b>	60W	<b>Weight:</b>	4.8kg
<b>Fuses:</b>	2 x 0.5A		

ACCESSORIES – Saybolt Universal Chromometer

CALIBRATION, VERIFICATION & TRAINING	
SETA CERTIFIED COLOUR STANDARDS, (for details see page 114).	



15311-2

CONSUMABLES – Saybolt Universal Chromometer

2 Years/2000 Tests		Qty
15311-202	'O' RING, Viton, pack of 5	1
15311-204	BULB, 60W, pack of 2	1
15311-206	GASKET, for tube, pack of 12	1

CHROMOMETERS