

CS, CT, TE

Технические характеристики

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Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	

Colorimeters

The Lovibond® 2000+ Comparator System

Lovibond®

A unique colorimetric chemical analysis system which is portable, accurate, and equally suited to laboratory or field use.

- The system comprises
- ◆ Lovibond® 2000+ Comparator
 - ◆ Glass colour standards discs
 - ◆ Tablet or liquid reagents

Comparator, Lovibond® 2000+

A prism unit and integrated large cell attachment (for cells up to 40mm path length) are incorporated in the instrument. Although robust, it is pocket sized and lightweight, made of solvent and acid resistant material. The discs are simply inserted from the side in cassette fashion, making it a simple operation to change discs when required.

CS100-20 2000+ Comparator

Glass Colour Standards, Lovibond®

Comprise flat, chemically produced, coloured glass standards mounted in plastic discs and guaranteed fade-free. The range available is very extensive and we show below a selection only of the most popular. Please contact us should you require other discs or ranges not listed here.

	Disc code	Range	Method	Accessories required	Applications and remarks
Ammonia					
CS125-12	3/113	0 to 1.0mg/l N	Ammonia No.1 tablets	13.5mm cells	
CS125-16	3/125	0 to 10mg/l N	Ammonia No.2 tablets	5mm cells	Effluent discharges
Chlorine (in water)					
CS127-10	3/40A	0.1 to 1.0mg/l	DPD	13.5mm cells	
CS127-12	3/40S	1.0 to 4.0mg/l			
CS127-14	3/40B	0.2 to 4.0mg/l			
CS127-20	3/40E	0.02 to 0.3mg/l	DPD	40mm cell	
CS127-32	3/40K	0.5 to 6.0mg/l	DPD	13.5mm cells	
CS127-33	3/40HN	2 to 10mg/l		5mm cell	
CS127-60	NDPB	0.01 to 0.1mg/l	DPD	Nessleriser 2150	
CS127-62	NDPC	0.02 to 0.2mg/l		Pair Nessler tubes AF306	
CS127-66	NDP	0.05 to 0.5mg/l			
CS127-68	NDPD	0.1 to 1.0mg/l			
CS128-17	3/2ARP	5 to 50mg/l	Potassium iodide	13.5mm cells	Water mains. Food processing
CS128-19	3/2Iod	5 to 250mg/l			
CS128-21	3/2Hypo	2 to 16% w/w			
Hazen Scale					
CS130-08	NSH	10 to 90mg Pt/l sample	Direct comparison against Pair Nessler tubes AF306	Nessleriser 2150	American Public Health Association, ASTM, and British Standards
CS130-12	NSB	70 to 250mg Pt/l		Daylight 2000	
pH					
CS132-12	2/1E	4.4 to 6.0	Methyl red	13.5mm cells	
CS132-14	2/1F	4.8 to 6.4	Chlorophenol red		
CS132-16	2/1G	5.2 to 6.8	Bromocresol purple		
CS132-18	2/1H	6.0 to 7.6	Bromothymol blue		
CS132-20	2/1J	6.8 to 8.4	Phenol red		
Sugar					
CS136-20	3/29A	0 to 100mg/l	alpha-Naphthol*	5mm cells	Sugar in boiler or drain waters within refineries

*Details on request.

Accessories for the 2000+ comparator are listed on the next two pages.



CS100-20

Colorimeters

The Lovibond® 2000+ Comparator System, continued

Reagents

Tablets and liquid reagents for use with the Lovibond® discs.

	Description	Test	For Disc	Pack qty.
Tablets				
CS180-11	Ammonia combi pack, No.1 & No.2 (250 each)		3/113, 3/125	250
CS181-10	DPD No. 1 (3/40)	Chlorine	3/40 series	100
CS181-11	DPD No. 1 (3/40)			250
CS181-12	DPD No. 2 (3/40)			100
CS181-14	DPD No. 3 (3/40)			100
CS181-15	DPD No. 3 (3/40)			250
CS181-16	DPD No. 4 (3/40)			100
CS181-30	DPD No. 1 (NDP)	Chlorine	NDP series	100
CS181-32	DPD No. 2 (NDP)			100
CS181-34	DPD No. 3 (NDP)			100
CS181-38	DPD No. 4 (NDP)			250
CS181-55	Chlorine combi pack, KI and acidifying G.P. tablets (250 each)			3/1 ARP, 3/2 Ind.
CS184-22	Phenol Red	pH	2/1J	100
CS184-26	Bromo Thymol Blue		2/1H	100
	Description	Test	For Disc	Cap. ml.
Solutions				
CS192-12	Methyl Red	pH	2/1E	100
CS192-14	Chlorophenol Red		2/1F	100
CS192-16	Bromocresol purple		2/1G	100

Cells

For use with the Lovibond® 2000+ comparator. Supplied singly unless otherwise stated.

	Description	Path length mm
Moulded, optically clear, plastic		
CS210-11	Square section, 10ml, supplied with plug stopper, pack of 10	13.5
Moulded, optically clear, glass		
CS210-15	Square section, 10ml, supplied with plug stopper, pack of 5	13.5
Fused optical glass, W680 series		
CS215-14	Rectangular, without lid	5
CS215-18	Rectangular, without lid	10
CS215-22	Rectangular, without lid	13.5
CS215-28	Rectangular, without lid	25
CS215-36	Rectangular, without lid	40

Tablets and cells for all Lovibond® comparator tests are available – please contact us with your requirements.

Hach portable water laboratories – see WR840.

Water testing strips – see WS550/WS560.



Typical discs



Tablets



CS210-11, CS210-15 is similar



CS215

Colorimeters

The Lovibond® 2000+ Comparator System, accessories

Daylight Unit

Fits into the back of the comparator and provides simulated illuminant C artificial daylight for precise colour comparisons. Powered by rechargeable batteries with a battery low indicator. The unit cuts out on release of the switch button to preserve battery and bulb life. Three batteries included. For use with CS100-20 only.

CS255-14 Daylight unit

Daylight 2000 lighting units

Separate, bench-mounted artificial light sources for the 2000+ comparator or 2150U/2250U Nessleriser modules. Provide a constant and stable light corrected to CIE standard illuminant C, essential for precise colour comparisons. Supplied with low voltage power supply adapter. A 220-240V a.c. single phase supply is required for the adapter.

CS265-20 Daylight 2000 for comparator only
CS272-40 Nessleriser Daylight 2000 for Nessleriser modules only

Nesslerisers 2150, 2250

Complete Nessleriser systems comprising Nessleriser Daylight 2000 artificial light source, Nessleriser modules for 113mm or 250mm path length cylinders, daylight stand with reflective plate for use with natural light, and two cylinders with anti-meniscus plungers. For 220-240V a.c. single phase supplies.

CS270-15 2150, Nessleriser complete, for 113mm cylinders
CS270-20 2250, Nessleriser complete, for 250mm cylinders

Nesslerisers, Natural Daylight, 2150D, 2250D

Comprise Nessler modules for 113mm path length cylinders or 250mm path length cylinders and daylight stand with reflective plate for natural daylight use. Supplied without cylinders or plungers.

CS270-40 2150D, Daylight Nessleriser for 113mm cylinders
CS270-45 2250D, Daylight Nessleriser for 250mm cylinders

Nessler Modules 2150U, 2250U

For use only with Nessleriser Daylight 2000 light source and 113mm path length cylinders or 250mm path length cylinders. Supplied with two cylinders and anti-meniscus plungers.

CS272-14 2150U, Nessler Module for 113mm cylinders
CS272-19 2250U, Nessler Module for 250mm cylinders

Discs for use with above – see CS125 et seq.
Spare nessler cylinders – see next page.

Lovibond® 3-Field Comparators

For colour grading to: Gardner scale for drying oils, F.A.C. scale for fats, E.B.C. scale for beers – details on application.

Lovibond® Kits for water testing – see Water Testing section.

Lovibond® Minikits for water testing – see Water Testing section.

Turbidimeters for water testing – see Water Testing section.



CS265-20 with CS100, CS210, discs



CS270-20, CS270-15 is similar



CS270-40 with discs and tablets



CS272-19



Minikits

Colorimeters

Nessler Cylinders

Nessler Cylinders

Glass. With anti-meniscus plungers (except CS275-10). Supplied in matched pairs.

	Ref.	Path length mm
CS275-10	AF306	113
CS275-12	AF306/P	113
CS275-20	DB420	250

Nessler Cylinders, MBL

Borosilicate glass. With black enamel graduations and inscriptions.

	Ref. CRC	Cap. ml	Grad. at, ml
CS402-35	320	50	50
CS402-40	322	100	50 & 100

Flocculator – see WR230 series.

Turbidimeters – see WT095.

Manual Colorimeters, Tintometer® Model F

Lovibond®

For examining the colour of liquid and solid samples by either reflected or transmitted light. With comfortable viewing position and operation via the prismatic optical system with angled viewing tube, diffused tungsten-halogen light source for standardised illumination and external low voltage power supply giving cool running over prolonged periods of use. With full range of Lovibond glass filters:-

- 0.1 to 70 red
- 0.1 to 70 yellow
- 0.1 to 40 blue
- 0 to 3 neutral

Supplied in two formats:

- Model F for applications requiring examination of fats and fatty oils, bleached lac, liquid chemicals and pharmaceuticals
- Model F (BS684) is a dedicated version for grading animal or vegetable fats and oils according to BS684: Section 1.14, ISO15305 and AOCs Method Cc13e-92

Both models are supplied with a set of colour standard racks, sample chamber liner with a standard white reference, spare white reference, colour analysis book, 2 spare lamps and instructions.

Model F only is also supplied with 1 each 1" (25mm) and 5 1/4" (133mm) path length rectangular fused glass cells.

Model F (BS684) only is supplied with one each 1/16", 1/8", 1/4", 1/2", 1" and 5 1/4" cells.

Manual Colorimeters, Tintometer® Model F

As described. Overall 330 x 410 x 230mm W x D x H. Weight 8.3kg. A 110V or 220V single phase supply is required for the external power supply.

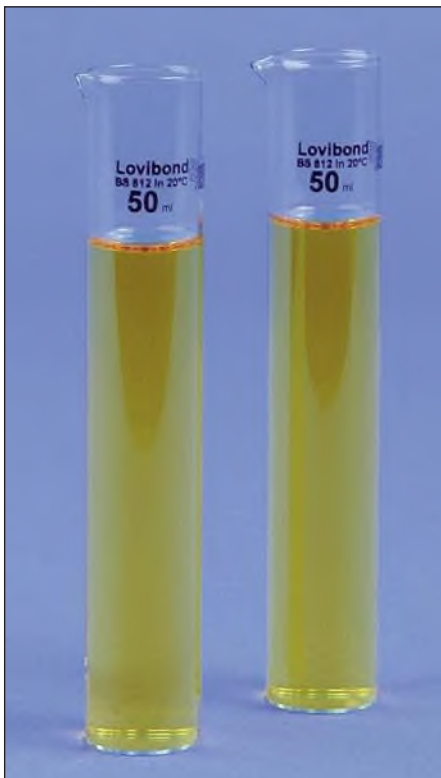
- CS700-20 Model F
- CS700-40 Model F (BS684)

Cells, W600 Series

For use with Model F series colorimeters.

	Path length
Optical glass, W600	
CS780-14	10mm
CS780-18	20mm
CS780-20	25mm
CS780-24	33mm
CS780-26	40mm
CS780-32	50mm
CS780-38	1 1/16"
CS780-42	1 1/8"
CS780-44	1 1/4"
CS780-46	1 1/2"
CS780-48	1"
CS780-58	5 1/4"
Borosilicate glass W600/B	
	For hot materials.
CS782-48	1"
CS782-58	5 1/4"

Lovibond® Tintometer® Colorimeters for petroleum products testing – see *Petroleum section*.



CS275-10



CS700 with cells

Colorimeters

Electronic Colorimeters, PFXi-195 Series

Lovibond®

Low cost spectrophotometric colorimeters for consistent, reliable, automatic, electronic measurement of colour for specific dedicated applications involving liquids or transparent solids. Ideal for routine analysis and quality control.

- ◆ Choice of instrument versions with international colour scales:
 - Pt-Co/Hazen/APHA, Gardner, Iodine
 - Saybolt, ASTM colour, Pt-Co/Hazen/APHA
 - FAC, Gardner
 - EBC (CIE and 430nm), ASBC (CIE and 430nm) Series 52 (Brown)
 - Ph. Eu., USP, Pt-Co/Hazen/APHA
 - ADMI (spectral and tristimulus filter methods), Pt-Co/Hazen/APHA
 - CIE values (stand selection), L*C*h colour space, Hunter lab colour space, Judd rgb
- ◆ 9 built-in interference filters with automatic selection
- ◆ Operator prompting in choice of 9 languages - English, French, German, Spanish, Italian, Portuguese, Russian, Chinese and Japanese
- ◆ RS232, USB and LAN outputs
- ◆ Supplied with Windows™-based control/downloading/analysis software which also enables the generation of spectral and CIE programmes

Colorimeter PFXi-195/1

For liquid chemicals and industrial oils analysis.

Scales: Pt-Co/Hazen/APHA, Gardner, Iodine

Cells supplied: 1 x 10mm, 1 x 50mm path length.

CS725-15 PFXi-195/1

Colorimeter PFXi-195/2

For liquid chemicals and industrial oils analysis.

Scales: Saybolt, ASTM colour, Pt-Co/Hazen/APHA

Cells supplied: 1 x 33mm, 1 x 50mm path length.

CS725-25 PFXi-195/2

Colorimeter PFXi-195/3

For liquid chemicals and industrial oils analysis.

Scales: FAC, Gardner

Cells supplied: 1 x 10mm path length.

CS725-35 PFXi-195/3

Colorimeter PFXi-195/4

For liquid chemicals and industrial oils analysis.

Scales: EBC (CIE and 430nm), ASBC (CIE and 430nm), Series 52 (Brown)

Cells supplied: 1 x 10mm, 1 x 25mm path length.

CS725-45 PFXi-195/4

Colorimeter PFXi-195/5

For liquid chemicals and industrial oils analysis.

Scales: Ph. Eu, USP, Pt-Co/Hazen/APHA

Cells supplied: 1 x 40mm, 1 x 50mm path length.

CS725-55 PFXi-195/5

Colorimeter PFXi-195/7

For sugar solutions, syrups and honey.

Scales: ICUMSA (420, 560, 710nm), Honey colour (Pfund equivalents), Series 52 (Brown)

Cells supplied: 1 x 10mm path length.

CS725-75 PFXi-195/7

Colorimeter PFXi-195/8

For water and waste water analysis.

Scales: ADMI (spectral and tristimulus filter methods), Pt-Co/Hazen/APHA

Cells supplied: 1 x 10mm, 1 x 50mm path length.

CS725-85 PFXi-195/8

Colorimeter PFXi-195/9

For transparent liquids.

Scales: CIE values (standard selection), L*C*h colour space, Hunter lab colour space, Judd rgb.

Cells supplied: 1 x 10mm path length.

CS725-95 PFXi-195/9

Spare cells. Optical glass, W600

	Path length mm
CS780-14	10
CS780-18	20
CS780-20	25
CS780-24	33
CS780-26	40
CS780-32	50

CIE Colour Scales

All instruments allow the operator to select measurement of samples to CIE specifications of xy chromaticity co-ordinates, luminance factor, L*a*b* colour space (CIE LAB), Delta E, optical density, % transmission and % absorption.

Technical Specification

Spectral response	nm	420 to 710
Band width	nm	20
Repeatability (using deionised water):		
Chromaticity (x,y):		±0.0004
E:		0.04
Calibration		Single key press
Light source		5V, 10W tungsten halogen lamp
Illuminant		CIE illuminant A, C, D65 (B for PFXi195/4)
Sample chamber	mm	0.1 to 50 path length cells
Outputs		RS232, USB, LAN
Data storage		100,000 measurements
Power requirement		90-240V 50/60Hz single phase supplies
Overall W x D x H	mm	435 x 195 x 170
Weight	kg	6.8

All colorimeters are supplied with Windows™ control/downloading/analysis software, optical glass cells for the colour scales as indicated, certified glass filter for regular conformance testing, spare lamp and instructions.



CS725

Colorimeters

CO7000 Medical Colorimeter

WPA

Designed for use by doctors and medical technologists in small to medium sized clinics and in the field.

- ◆ "Open" system accommodates both wet reagents and kits
- ◆ Easy operation via three buttons; reference, test and on/off
- ◆ Wavelength selection via 10 gelatine colour filters using a thumb wheel
- ◆ Accepts 10mm square or 16mm diameter round cells (also 10 and 12mm diameter tubes using accessory adapter set)
- ◆ Mains or rechargeable battery operation
- ◆ Tropicalised for field use in humid and hot environments

Catalogue No.	CT520-60	
Model	CO7000	
Wavelength	nm	400 to 700
Wavelength selection	nm	10 gelatine filters in a filter wheel 400, 440, 470, 490, 520, 550, 580, 590, 680 and 700
Precision	$\pm 0.05A$ at 1A	
Repeatability	$\pm 0.02A$ at 1A	
Range	Absorbance A Transmission T	-0.3 to 1.99 0 to 199%
Power	NiMH rechargeable battery or adapter requiring a 220-240V 50/60Hz supply	
Operating range	0 to +45°C up to 70% R.H.	
Overall L x W x H	mm	180 x 150 x 60
Weight	kg	0.6

Medical Colorimeter CO7000

As described. Supplied with rechargeable battery, mains adapter for 220-240V 50/60Hz supplies, spare lamp and instructions.

CT520-60 CO7000

Accessories and Spares

- CT504-06** 10mm plastic cuvettes, pack of 100
- TE154-32** 16mm o.d. glass test tubes, pack of 150
- CT522-40** Spare lamp for CO7000
- CT527-14** 10mm and 12mm dia. tube cell adapters set

Disposable micro and semi-micro cuvettes – see CA305.



CT520 in use

CO7500 Series Colorimeters

WPA

Compact, robust, low-cost colorimeter for educational or quality control use.

- ◆ Straightforward operation using five push-button controls, colour filter wheel with 8 wavelength filters, and large, clear digital display
- ◆ Accepts 10mm square or 16mm diameter round cells (also 10 and 12mm dia. tubes using accessory adapter set)

Catalogue No.	CT525-10	CT525-20
Model	CO7500	CO7500B
Wavelength	nm	440 to 680 - both models
Wavelength selection	nm	8 gelatine filters in a filter wheel 440, 470, 490, 520, 550, 580, 590 and 680 - both models
Bandwidth	nm	40 - both models
Repeatability	$\pm 0.2A$ at 1A - both models	
Ranges	Absorbance A Transmission T	-0.3 to 1.99 - both models 0 to 199% - both models
Kinetics	Yes - both models	
Outputs	Analogue Digital	0 to 2V for 0 to 2A and 0 to 1.99V for 0 to 199%T via 2 x 4mm sockets - both models RS232 - both models
Power	Adapter requiring a 220-240V 50/60Hz supply	NiMH rechargeable battery or adapter requiring a 220-240V 50/60Hz supply
Overall L x W x H	mm	180 x 150 x 60 - both models
Weight	kg	0.5 0.6

Laboratory Colorimeters CO7500 series

As described. Supplied with pack of 10 x 10mm plastic cuvettes, RS232 and 2 x 4mm analogue outputs, mains adapter and instructions. CO7500B additionally has a built in rechargeable battery, charged via the mains adapter. For 220-240V 50/60Hz single phase supplies.

CT525-10 CO7500 mains

CT525-20 CO7500B rechargeable battery

Accessories and Spares

- CT504-06** 10mm plastic cuvettes, pack of 100
- TE154-32** 16mm o.d. glass test tubes, pack of 150
- CT527-06** Spare lamp for CO7500 series
- CT527-14** 10mm and 12mm diameter tube cell adapters set



CT525

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