

Professional Spectral Colorimeter

High-performance Spectral Colorimeter for professional colour measurements of clear, transparent liquids with reference beam technology. More than 25 colour scales included.

Lico 690 the new version of the spectral colorimeter Lico 500.



Exact colour calculations which conform to several DIN-ISO-ASTM standards or AOCS Methods are done with only one measurement. Traditional visual colour values like the iodine colour value, Hazen or Gardner are displayed as well as modern colour systems, e.g. CIE- $L^*a^*b^*$ or colour measurements corresponding to European or US pharmacopeia.

Also transmission, extinction measurements and wavelength scans are possible so that the instrument has a multipurpose in the laboratory or production. The intuitive operation by a high-resolution touch screen makes measuring easy in routine analysis. The measuring results can easily be transferred to an existing laboratory network via Ethernet interface.

- Competence in colour
- All important colour scales included in one instrument
- Automatic cuvette identification
- High level of measurement reliability through a comprehensive set of test aids
- Simple integration into the laboratory network through Ethernet connection
- Easy to change cuvette adapter

Funcionalidad

- Easy operation using 7" TFT colour touch screen display (800x480 pixel)
- Color Scan 380-720 nm in steps of 10nm
- Data log: 3000 colour values, 100 colour reference values, 1000 photometric readings, 20 wavelength scans, 20 time scans
- Reference Beam Technology
- Password protection, GLP documentation
- USB-Ports 2 x type A, 1 x type B and 1x Ethernet

Color measurement methods

- Iodine, Hazen/APHA, Gardner-color
 - Saybolt, Mineral oil, Klett-color
 - Hess-Ives, ADMI, Yellowness-index
 - AOCS- Red/Yellow, Chlorophyll A
 - CIE-Lab, Hunter-Lab, XYZ; Standard Illuminant A, C or D65 and Standard Observer 2° or 10°
 - European and US Pharmacopoeia
- NEW:** ICUMSA, Acid Wash und Chinese Pharma

Photometer methods

- Wavelength Scan 320-1100nm incl. Difference Mode
- Time Course Mode, Single and Multi Wavelength Mode

Included accessories

- Universal power supply 100-240V, 50-60Hz
- Dust cover and User Manual

Optional Accessories

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| • Disposable plastic cuvettes, PS, 10 x 10mm, 1000 pcs. | LYY214 |
| • Round cuvettes for LICO, glass, 11 mm, disposable, 560 pcs. | LYY621 |
| • Rectangular cuvettes, 50x10 mm, PMMA, disposable, 50 pcs. | LZM130 |
| • ADDISTA color / Set of 6 certified Test solutions for LICO | LZM282 |
| • Set of four glass filters for stray light, absorbance and wavelength test. | LZM339 |
| • Starter Kit
(1x ADDISTA color, 10x Glass round cuvettes 11 mm, 10 PMMA Rectangular cuvettes, 50 mm) | LZM354 |
| • Replacement halogen bulb | LZV565 |
| • Replacement Rectangular cuvette compartment (LICO 6xx) | LZM368 |
| • Replacement Cuvette adapter Z (LICO 6xx) | LZM369 |
| • Replacement POWER SUPPLY, 100-240V | LZV844 |
| • Protective film for display | LZV874 |
| • Ethernet Cable, grey 2 m | LZV873 |
| • SIP 10 Sipper set with cell LZV510 | LQV157.99.30001 |
| • Flow-Through Cell 450 µl,
QS, light path=10mm, ZH=10mm, h=40mm; 11 x 4mm Window | LZV510 |
| • Flow-Through Cell 370 µl,
QS, light path=50mm, ZH=10mm, h=40mm; 3mm° Window | LZV649 |
| • Flow-Through Cell 160 µl,
QS, light path=10mm, ZH=10mm, h=39mm; 8 x 2mm Window | A24209 |
| • Tube Set Sipper, acid resistant | LZQ098 |
| • Tube Set Sipper, drinking water | LZQ100 |
| • PD 24 Thermodrucker, USB, 220-240 V | 5835900.00 |
| • USB barcode hand-scanner | LZV566 |
| • KEYBOARD - USB QWERTY | LZV582 |
| • USB memory stick | LZV791 |
| • USB cable for SIP 10 | LZQ104 |



Technical specifications

Beam Height	10 mm		
Color Scales	Acid Wash;ADMI;ASTM D 1500;Chinese Pharma;DAB 1996;EBC;Gardner;Hazen;Hess Ives;ICUMSA;Iod;Klett;Saybolt;USP24;Yellowness Index;AOCS y/r	Data storage	3000 color readings 20 time scans 20 wavelength scans 1000 photometric values 100 color references
Cuvette compatibility	10 mm Rectangular cuvette 50 mm Rectangular cuvette 11 mm Round cuvette		
Dimensions (H x W x D)	151 mm x 350 mm x 255 mm		
Display	TFT WVGA Color Graphic Touch Screen 800 pixel - 480 pixel		
Max. operating humidity	80 %	Repeatability	0.1 E*
Operating Temperature Range	10 to 40 °C	Reproducibility	± 0.2 % transmission
Optical path length	10 - 50 mm	Safety checks	CE
Optical system	0 ° / 180 ° rectilinear	Scanning speed	8 nm/s (in steps of 1 nm)
Photometric accuracy	1 % at 0.5 to 2.0 Abs 0.005 Abs at 0 to 0.5 Abs	Source lamp	Tungsten Halogen Lamp
Photometric linearity	< 0.5 % to 2 Abs with neutral glass at 546 nm 1 % with neutral glass at 546 nm	Spectral bandwidth	5 nm
Photometric measuring range	± 3.0 Abs (wavelength range 340-900 nm)	Standard Illuminant	AC;D65
Power Requirements	(Hz) 50/60 Hz	Standard Observer	2°;10°
Power supply	110 V - 240 V	Storage conditions	-40 °C to 60 °C
Interface	2x USB Typ A, 1x USB Typ B, 1x Ethernet		
Includes	cell adapter, dust cover, power supply, user manual		