



## Competence in colour

### LICO 690 Professional Spectral Colorimeter

**Ordernumber: LMV187.99.40001**

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

- **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**

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 multi purpose in the laboratory or production. The intuitive operation by a highresolution touchscreen makes measuring easy in routine analysis. The measuring results can easily be transferred to an existing laboratory network via Ethernet interface.

#### 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
Cuvette compatibility	10 mm Rectangular cuvette
Cuvette compatibility	50 mm Rectangular cuvette
Cuvette compatibility	11 mm Round cuvette
Data storage	100 color references

Data storage	1000 photometric values
Data storage	20 wavelength scans
Data storage	20 time scans
Data storage	3000 color readings
Dimensions (H x W x D)	151 mm x 350 mm x 255 mm
Display	TFT WVGA Color Graphic Touch Screen
Display	800 pixel - 480 pixel
Display size	7 inch
Includes	cell adapter, dust cover, power supply, user manual
Interface	2x USB Typ A, 1x USB Typ B, 1x Ethernet
Max. Storage Humidity	80 %
Max. operating humidity	80 %
Operating Temperature Range	10 to 40 °C
Optical path length	10 - 50 mm
Optical system	0 ° / 180 ° rectilinear
Photometric accuracy	1 % at 0.5 to 2.0 Abs
Photometric accuracy	0.005 Abs at 0 to 0.5 Abs
Photometric linearity	1 % with neutral glass at 546 nm
Photometric linearity	< 0.5 % to 2 Abs with neutral glass at 546 nm
Photometric measuring range	± 3.0 Abs (wavelength range 340-900 nm)
Power Requirements (Hz)	50/60 Hz
Power Requirements (Voltage)	110 - 240 V AC
Power supply	110 V - 240 V
Repeatability	0.1 E*
Reproducibility	± 0.2 % transmission
Safety checks	CE
Scanning speed	8 nm/s (in steps of 1 nm)
Source lamp	Tungsten Halogen Lamp
Spectral bandwidth	5 nm
Standard Illuminant	AC;D65

Standard Observer	2°;10°
Storage conditions	-40 °C to 60 °C
User interface	English, French, German, Italian, Spanish, Czech, Dutch, Greek, Polish, Slovene, Slovak, Russian, Turkish, Chinese, Japanese, Korean
Warranty	2 years
Wavelength accuracy	± 1.5 nm (wavelength range 340900 nm)
Wavelength calibration	automatic
Wavelength range	320 nm to 1100 nm
Wavelength reproducibility	0.1 nm
Wavelength resolution	1 nm
Weight	4.2 kg

Subject to change without notice.