



## Lico 690 Professional Spectral Colorimeter for up to 26 colour scales

**Product #:** LMV187.53.40001

**ZAR Price:** Contact Hach  
No availability shown

### Competence in Colour

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

Exact color 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 pharmacopoeia.

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 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.

#### All important colour scales included in one instrument

The Lico 620 with up to 5 colour scales is designed for fast routine measurements in the laboratory and in production facilities. It is already in use in a wide variety of areas in the chemical industries for quality and production control, e.g. to assess surfactants, oils, fats, resins and synthetic resins.

The Lico 690 Spectral Colorimeter is flexible to use and works with many applications, such as chemical, pharmaceuticals, oil industries and the food and beverage industry. 26 colour scales are directly integrated in the instrument: conventional scales like iodine, Hazen (Pt Co), Gardner, Pharmacopoeia as well as specific scales like Saybolt or ASTM.

#### Simple integration into the laboratory network through Ethernet connection

Lico instruments can be easily integrated to existing laboratory networks through an Ethernet interface.

#### High level of measurement reliability through a comprehensive set of test aids

Certified test filters, reproducible standard colour solutions and an integrated implementation of AQA (Analytical Quality Assurance) ensure optimum measurement reliability. Measured values can be evaluated in all scales, even post-measurement with archived spectral data.

#### Easy handling

The measurement process starts automatically when the sample cell is inserted, and the measurement vial is identified by the instrument. The easy-to-change cell compartment facilitates cleaning and/or replacement.

The operation of the Lico colorimeters requires only minimum training effort thanks to clear instructions on the colour touch-screen.

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### Specifications

Beam Height:	10 mm
Colour Scales:	26
Cuvette Compatibility 2:	10 mm rectangular sample cell
Cuvette Compatibility 3:	50 mm rectangular sample cell
Dimensions (H x W x D):	151 mm x 350 mm x 255 mm

Display:	TFT WVGA colour graphic touch-screen
Display Resolution:	480 - 800 pixel
Display Size:	17.8 cm (7 in.)
Display Type:	Colour graphic
Includes:	cell adapter, dust cover, power supply, user manual
Interface:	2x USB Typ A, 1x USB Typ B, 1x Ethernet
Manual Languages:	English, French, German, Italian
Max. operating humidity:	80 %
Max. Storage Humidity:	80 %
Memory:	3000 colour readings; 100 colour references; 1000 photometric values; 20 wavelength scans; 20 time scans
Model:	Lico 690
Operating temperature range:	10 - 40 °C
Optical Path Length:	10 - 50 mm
Optical System:	0° / 180° rectilinear
Photometric Accuracy:	0.005 Abs at 0 - 0.5 Abs
Photometric Accuracy 2:	1 % at 0.5 - 2.0 Abs
Photometric Linearity:	< 0.5 % to 2 Abs with neutral glass at 546 nm
Photometric Linearity 2:	≤ 1 % with neutral glass at 546 nm
Photometric Measuring Range:	±3.0 Abs (wavelength range 340 - 900 nm)
Power Requirement:	110 V - 240 V
Power requirements (Hz):	50/60 Hz
Power requirements (Voltage):	100 - 240 VAC
Reproducibility:	±0.2 % transmission
Safety Checks:	CE
Sample Cell Compatibility:	11 mm round sample cell
Scanning Speed:	≥ 8 nm/s (in steps of 1 nm)
Source Lamp:	Tungsten halogen lamp
Standard illuminant:	A/C/D65
Standard Observer:	2°
Storage conditions:	-40 °C - 60 °C
Stray radiant power ratio:	< 0.1 %T at 340 nm with NaNO <sub>2</sub>
User Interface:	Touch-screen, ext. USB keyboard
User Interface Languages:	English, French, German, Italian, Spanish, Czech, Dutch, Greek, Polish, Slovene, Slovake, Russian, Turkish, Chinese, Japanese, Korean
Warranty:	12 months
Wavelength Accuracy:	±1.5 nm (wavelength range 340 - 900 nm)
Wavelength Calibration:	Automatic
Wavelength Range:	380 nm - 720 nm used for colorimetric calculations
Wavelength Reproducibility:	≤ 0.1 nm
Wavelength Resolution:	1 nm
Weight:	4.2 kg
What's included?:	Instrument, power supply, printed basic user manual, CD with full user manual, 10 mm cell adapter, dust cover

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