

LC01

COLORIMETER + SPECTROPHOTOMETER FOR THE MEASUREMENT OF THE INDICES a/b , L AND LYCOPENE

The Maselli LC-01 Colorimeter + Spectrophotometer is a new laboratory instrument developed to measure the color indices a/b - L, as well as the Lycopene content in the tomato products. It is designed to be precise, rugged and simple to use, while the continuous internal reference system eliminates the need for frequent calibrations. Its new and innovative method to accurately measure the Lycopene directly in the actual product makes the LC01 an indispensable tool to monitor this important carotenoid during each stage of tomato processing. The interface with Windows using a touchscreen, makes using the software easy and direct, so that all its functions and potential, such as spectra, graphs, data storage, transmission and printing can be used to the full. The stainless steel enclosures and waterproof display permit the LC01 to also be used in the processing area. The LC01 design utilizes the most advanced technologies to achieve precise and reliable measurements, such as the vertical optical assembly, the extended life and stability of the LED light sources and the high resolution optical detector. The instrument can be calibrated using the classic tomato standard BCR red ceramic tile, while using its PVC sample holder with optical glass window for the measurements. The absorbances measured can be processed and transformed into personalized concentration units. In the same way, also the standard colour scales (X, Y, Z and L, a, b) can be transformed into specific indices using personalized functions.





TECHNICAL SPECIFICATIONS

COLOR MEASUREMENT

Approximate spectrum: 380...900 nm

Repeatability:

(data referring to 20 measurements on neutral grey transmittance calibration standards 25%)

Values DX,DY,DZ: <0.07

Colour scales: HunterLab (L, a, b)
Tristimulus XYZ
Score TP,TJ,TS,TC

Indices: a/b

Illuminator: C

Observer: Standard CIE 1931 2°

PIGMENT MEASUREMENT

Lycopene concentration in mg/100 g of tomato, other carotenoids (β-Carotene) and chlorophyll

Accuracy: 5% better than the reading

Repeatability: better than ± 0.25 mg/100 g

Measurement Limits:

Lycopene 0...80 mg/100 g

Optical group thermal stability:

Automatic from 5 °C...40 °C (41 °F...104 °F)

Calibration:

- Grey and black target for initial calibration
- "Reference Tile" B.C.R. 400 to check calibration

Inputs/Outputs:

- 1 Serial RS232 port
- 1 Parallel Centronics port
- 1 USB port, type A
- 1 Ethernet port, RJ-45
- 1 PS/2 connector for external keyboard/mouse

Power:

External Power Supply (provided)
AC 100...240V
47...63Hz 50VA

CONSTRUCTION SPECIFICATIONS

Measurement System

Color: Spectrophotometer with 45°/0° geometry for measurement of reflected color

Pigment: Spectrophotometer with 45°/0° geometry for diffused reflection measurement, with automatic turbidity compensation, for measurement of pigment

Measuring time: 10 s

Display: 10.4" touch-screen monitor, 800x600 pixels

Light source: 8 high efficiency LEDs, electronically temperature compensated
Wavelengths 380...900 nm

Viewing area: ø 10 mm

Detection Element:

Photodiode with expanded sensible surface

Temperature measurement element:

Internal Pt100 and Pt1000

Language:

Ability to select from choice of three languages (Italian, English, Spanish) for the display of menus and messages

Construction:

AISI 304 stainless steel enclosures

Weight: 11.7 kg (26 lb)

Analysis basin:

PVC, with optical glass window

Analyzable product: volume ~100 cc
turbidity > 200 FTU

Product temperature limits:

5 °C...40 °C (41 °F...104 °F)

Processing system:

Construction:

outer shell in AISI 304 stainless steel

Monitor:

touch-screen
Flash memory 512 MB
Industrial PC board



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