

# COLOR & LUMINANCE



## TOPCON BM-7

### LUMINANCE COLORIMETER

READ LUMINANCE, CHROMATICITY AND COLOR TEMPERATURE AUTOMATICALLY—WITHOUT CALCULATIONS OR MULTIPLE READINGS—USING THE TOPCON BM-7.

H O F F M A N  
**H E C**  
ENGINEERING CORP.

SETTING THE STANDARD FOR LIGHT MEASUREMENT

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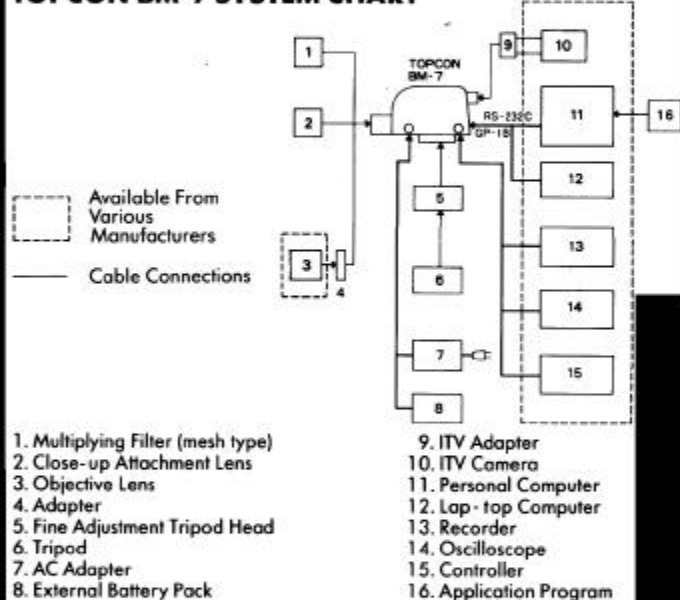
The TOPCON BM-7 is a fully integrated photometer/colorimeter that automatically reads luminance, chromaticity coordinates and color temperature, or CIELAB and CIELUV values, in a single measurement—by simply focusing on the device to be measured and reading the display.

The easy-to-read display is a 20-character, 4-line back-lit LCD that provides clear visibility in ambient light or in darkness.

Personal computers may be used to facilitate automatic measurement, thanks to the incorporation of standard GP-IB (IEEE-488) or RS-232C interface capable of linking the BM-7 to any system configuration. The BM-7 readings may be further analyzed via the triple-channel analog output (X2, Y, Z), providing adequate signal for recording or monitoring with an oscilloscope or other device.

The BM-7 is the most cost effective instrument of its type. Hoffman Engineering Corporation exclusively sells and services the BM-7 in the U.S., Canada and all of the Americas. Call us today and see color and luminance in a whole new light.

### TOPCON BM-7 SYSTEM CHART



Subject to change in design and/or specifications

## SPECIFICATIONS

**APERTURE SIZE:** 0.1°, 0.2°, 1° or 2° (select at purchase)

**FIELD OF VIEW:** 5°

**OBJECTIVE LENS:** f=80mm, F2.5 (AL-6 close-up lens optional)

**SPECTRAL LUMINANCE:** Closely matches the CIE spectral tristimulus values X, Y and Z

**DETECTOR SYSTEM:** Array of five silicon photodiodes

**MEASURING MODES:** xyL (x, y: CIE chromaticity coordinates; L: luminance in fL or cd/m<sup>2</sup>)

Source Mode

u'v'L (u', v': chromaticity coordinates; L: luminance in fL or cd/m<sup>2</sup>)

XYZ tristimulus values

Tc.duv (Tc: color temperature; duv: deviation from the blackbody locus)

Object Mode

CIE 1976 L\*a\*b\* E\*ab  
CIE 1976 L\*u\*v\* E\*uv

**MEASUREMENT TIME:** Fast/slow selectable response speed; manual measurement time for luminance is approximately 2-3 seconds.

**DISPLAY:** 20-character x 4-line back-lit LCD

**INTERFACE:** GP-IB (IEEE-488) or RS-232C (select at purchase) for external computer control or automatic data acquisition

**ANALOG OUTPUT:** Analog signal voltage output proportional to X2, Y, Z

**POWER SUPPLY:** AC adapter (standard)  
External battery pack (optional)

**POWER CONSUMPTION:** 14.5 VA (using AC adapter)

**OPERATING TEMPERATURE RANGE:** 0-40°C

| Aperture (Select at Purchase) | Effective Measuring Range For Luminance |                   | Minimum Luminance Required For Chromaticity Measurement |                   | Minimum Spot Size Diameter (Inches) |               |
|-------------------------------|---|-------------------|---|-------------------|-------------------------------------|---------------|
|                               | fL                                      | cd/m <sup>2</sup> | fL  | cd/m <sup>2</sup> | Objective Lens                      | Close-up Lens |
| 0.1°                          | 10-3,500,000                            | 35-12,000,000     | 600   | 2056              | 0.019                               | 0.004         |
| 0.2°                          | 2.5-875,000                             | 8.5-3,000,000     | 150   | 514               | 0.038                               | 0.008         |
| 1.0°                          | 0.1-35,000                              | 0.035-120,000     | 6   | 21                | 0.19                                | 0.04          |
| 2.0°                          | 0.025-8,750                             | 0.085-30,000      | 1.5   | 5                 | 0.38                                | 0.08          |

## ACCURACY

**LUMINANCE:** +/- 2% at color temperatures between 1800 and 3000 Kelvins.

**CHROMATICITY:** Calibrated to an accuracy of +/- .002 for CIE x and y, when using a standard with spectral content similar to that of the object under test. When no such standard is available, stated accuracy is +/- .005 between 1800-3000 Kelvins, when calibrated against a 2856 Kelvin standard. All calibrations are directly traceable to the National Institute of Standards and Technology (formerly the National Bureau of Standards).

**COLOR TEMPERATURE:** +/- 0.8% at Illuminant A (2856 Kelvins)

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