

# BC, CM, SPAD, CR, CECF

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## Discontinued Products

### Colorimeter BC-10

The Baking Contrast Meter BC-10 is a unique handheld colorimeter for fast and easy measurement the backing contrast of all kind of bakery products including breads, buns, cookies and other food products to control the baking process in the production line.

Very easy to use and battery powered, the BC-10 delivers a single baking contrast unit (BCU) or classic L\*a\*b\* colour values.



## CM-2300d

The CM-2300d is a portable sphere type spectrophotometer with horizontal alignment, which is most convenient to measure the colour of flat or large samples. The model is using the patented numerical gloss control (NGC) which delivers measurement data's including (SCI) and excluding (SCE) surface conditions in one measurement sequence.

Single handed operation is achieved with the "Navigation wheel" and the sample observation port allows perfect sample positioning. The large information display shows measurement data either as numerically or graphically.

## CM-2500c / CM-2500c CT

The CM-2500c is a compact portable spectrophotometer with  $45^\circ\text{a}:0^\circ$  geometry defined and standardised for colour measurement in several applications such as automotive interior materials, high visibility textiles, Coatings and Road marking.

Furthermore, this geometry is renowned for providing colour values having an excellent match with visual perception by fully excluding surface conditions by gloss or texture.

The perfect annular optical system of the CM-2500c (defined as  $45^\circ\text{a}:0^\circ$ ) achieves unsurpassed accuracy and repeatability, especially on textured or structured surfaces, regardless of measurement direction.

The CM-2500c body is light-weight and compact allowing one hand operation with a minimum of operation keys. The large information display shows measurement data either numerically or graphically.



## CM-2600d and CM-2500d

The CM-2600d and CM-2500d are portable sphere type spectrophotometers with horizontal alignment, which is most convenient to measure the colour of flat or large samples. Both models using the patented numerical gloss control (NGC) which delivers measurement data's including (SCI) and excluding (SCE) surface conditions in one measurement sequence.

Single handed operation is achieved with the "Navigation wheel" and the sample observation port allows perfect sample positioning. The large information display shows measurement data either as numerically or graphically. The CM-2600d offers additional 3mm measuring aperture to perfectly adapt to small sample sizes.

To analyze samples treated with optical brighteners (OBA's), the CM-2600d uses the patented numerical UV control (NUVC) system for accurate and fast UV content adjustments – a unique feature in a portable instrument.

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# Spectrophotometer CM-3700d

## State of the Art Spectrophotometer for maximum Performance

"State of the Art" Reference Spectrophotometer for highest levels in accuracy and reliability in a colour management network system.

The CM-3700d, once again proves Konica Minolta's leadership in optical technology with a true "State of the Art" instrument. In every detail, the CM-3700d has been designed for maximum performance in precise colour control. The large sphere, the aperture masks and the complete optical system are manufactured without compromise, and exceed the requirements of international standards such as CIE, ISO, ASTM, DIN or JIS.

The two flat holographic gratings with silicon photodiode arrays, one each for the sample and feedback channel, together with the high power xenon flash ensures highest absolute accuracy and repeatability, especially on very dark shades.

The superiority of the CM-3700d has been recognised by top ranking institutes and industry leaders. Another example of Konica Minolta's high-end manufacturing technology is the superior level of inter-instrument agreement "straight from the line the production line".



# Bench-top Spectrophotometer CM-3600A

The CM-3600A is a versatile benchtop spectrophotometer designed to meet the color measurement needs of laboratory, R&D and production users. The instrument provides accurate color data for all manner of solid and liquid samples and can even measure haze.



## High-Precision, High-Versatility Spectrophotometer

The CM-3600A Spectrophotometer is a high-precision and high-reliability bench-top instrument with horizontal alignment capable to measure colour either in reflectance or transmittance and thus offering a wide range of applications such as Plastics, Paints, Ceramics, Chemicals etc.

The CM-3600A utilize the patented Innovative Optical System technology including numerical gloss control (NGC) for simultaneous measurements with (SCI) and without (SCE) specular components. In addition numerical UV control (NUVC) is the unsurpassed technology for UV adjustments when measuring samples containing optical brighteners such as pulp, paper textiles and other chemicals.

These patented technologies assure highest accuracy and repeatability levels combined with superior reliability due to reduced number of moving parts and thus offer an unmatched price performance ratio.

# Bench-top Spectrophotometer CM-3610A

A vertically aligned Spectrophotometer with benefits for measuring the color of light or thin samples such as fabrics, papers etc. The vertical configuration also has applications in color matching masterbatch pellets for minimising edge loss.



## High-Precision, High-Versatility Spectrophotometer

The CM-3610A Spectrophotometer is a high-precision and high-reliability bench-top instrument with vertical alignment capable to measure colours either in reflectance or transmittance and thus offering a wide range of applications such as Plastics, Textiles, Paints, Ceramics etc.

The CM-3610A utilize the patented Innovative Optical System technology including numerical gloss control (NGC) for simultaneous measurements with (SCI) and without (SCE) specular components. In addition numerical UV control (NUVC) is the unsurpassed technology for UV adjustments when measuring samples containing optical brighteners such as pulp, paper textiles and other chemicals.

These patented technologies assure highest accuracy and repeatability levels combined with superior reliability due to reduced number of moving parts and thus offer an unmatched price performance ratio.



# Spectrophotometer CM-3600d / CM-3610d

## Built for Precision, priced for Economy

With their innovative technology these high precision instruments set new standards in price performance ratio with highest levels of flexibility and user friendliness.

The introduction of this innovative instrument has drastically changed the standard for bench-top spectrophotometers throughout industry. Unlike other "lower cost model" instruments available in the market, the CM-3600d can meet true "high-end" class standards at an affordable price. This is possible only through utilising Konica Minolta's innovative and patented optoelectronics such as numerical gloss control, numerical UV-control and other "world first" technologies. The use of this technology allows much lower production costs by drastically reducing the number of mechanical parts when compared to traditional instruments, whilst maintaining the highest levels in accuracy and precision, previously only available in much higher priced instruments. This has made the CM-3600 series the "global reference instrument" in leading companies around the world.

Enhanced Performance with patented "Konica Minolta Innovative Optical System" Technology includes many "world first" features.



## Performances

- Simultaneous measurement of specular included and excluded with "Numerical Gloss Control" without mechanical moving parts
- Instantaneous and trouble free UV calibration with "Numerical UV-Control" without mechanical moving parts
- Simultaneous data for UV-excluded, UV-included and UV-adjusted
- Highest levels of Inter-Instrument agreement as standard

## Versatility

- Full wavelength range from 360-740 nm with 10 nm pitch
- Large 6" sphere (152 mm); d:8° geometry in perfect accordance to CIE recommendations

- Reflectance, transmittance and diffuse transmission measurement modes
- Changeable apertures with Ø 4, 8 and 25.4 mm as well as motorised zoom optic for adjustment of measuring spot
- Viewfinder for easy sample observation
- Available in horizontal (CM-3600d) and vertical (CM-3610d) design
- Compact and lightweight (CM-3600d:12 kg)

## Bench-top Spectrophotometer CM-3630

The CM-3630 bench-top spectrophotometer ensures perfect compliance to optical standards [ISO 2469](#) and [ISO 2470](#) used in the Pulp and Paper Industry. Together with the designated software values for colour, brightness, whiteness and yellowness indices are calculated and displayed in full accordance with several international and national standards such as ISO, SCAN, DIN, TAPPI, CPPA and AFNOR.

Numerical UV-Control makes calibration and adjustments to whiteness and tint a fast and easy procedure. In fact, in just a few seconds your instrument is perfectly calibrated, much faster and with conventional instruments. Since everything's done numerically, and with the significant reduction in moving parts, it is almost maintenance free



## CM-512m3A

The CM-512m<sup>3</sup>A is a portable multi-angle spectrophotometer especially designed for colour measurement of metallic and effect paints and plastics. It uses 0° viewing and illumination at 25°, 45° and 75° angles geometry, optimized for fast and accurate measurements in the automotive production line QC.



This special geometry is truly symmetric and therefore unaffected by instrument orientation. In addition, the optical system is optimized to give very accurate results even on curved surfaces. Therefore samples such as front and rear bumpers, vehicle mirror bodies' or door handles can be measured fast, accurately and repeatedly. The CM-512m<sup>3</sup>A is extremely rugged as it is free of moving parts.

# Chlorophyll Meter SPAD-502

## Easy and Damage-Free Chlorophyll Measurement on Plants

The Chlorophyll Meter SPAD-502 is a compact, easy-to-use meter for measuring the chlorophyll content of plant leaves without damaging the plant. Chlorophyll content is an indication of the plant condition and can be used to determine when to add fertilizer to produce larger crop yields of higher quality.



## Colorimeter CR-10

The Color Reader CR-10 is an affordable handheld colorimeter for quick and easy colour control on almost any samples and materials. Just measure the target followed by the sample to compare to see the colour difference in objective CIELAB colour values displayed on the LCD screen.

Despite the simple operation, the CR-10 is a true colorimeter in full compliance with CIE and DIN 5033 norms as one can expect from Konica Minolta.



The CR-10 represents the entry point to objective colour measurement. Compared to many other entry level devices, the CR-10 is a true colorimeter in full compliance with CIE and DIN 5033 norms.

Extremely simple to use, the CR-10 allows fast colour difference measurements between a target colour and a sample in just 2 steps. On the LCD screen colour difference are shown in CIELAB  $\Delta L^* \Delta a^* \Delta b^*$  and  $\Delta E^*_{ab}$  or  $\Delta L^* \Delta C^* \Delta H^*$  and  $\Delta E^*_{ab}$  values

The 8mm measuring area and the sphere geometry (8°:di) suits almost any samples size or surface. The illumination by tungsten lamp, according to CIE standard illuminate D65 and 10° observer assure long life. To print out measurement data, the CR-10 can be connected to an external printer.

## Colorimeter CR-14

The Color Reader CR-14 is an affordable handheld colorimeter for quick and easy colour control on almost any samples and materials. Just measure the target followed by the sample to compare to see the colour difference in objective CIELAB colour values displayed on the LCD screen.

Despite the simple operation, the CR-14 is a true colorimeter in full compliance with CIE and DIN 5033 norms as one can expect from Konica Minolta.



Small colour variations of white are especially obvious but difficult to quantify objectively. The CR-14 allows you to control the shade of white, near white and yellowish products such as foods and raw materials easily. It uses the internationally standardised and well known Whiteness and Yellowness Indices from CIE, ASTM and Hunter. Alternatively, values can also be shown as Y x y (CIE31) colour coordinates.

The CR-14 can handle any products in solid, pasty or even powder form and thus is very flexible. In order to prevent it from dusty environment, the measuring aperture is covered by an optical glass - alternatively you can also use the optional vinyl protection cover. Like all Color Readers, the CR-14 is very simple to use, compact, light-weight and battery-operated.

The 8mm measuring area and the sphere geometry (8°:di) suits almost any samples size or surface. The illumination by tungsten lamp, according to CIE standard illuminate D65 and 10° observer assure long life. To print out measurement data, the CR-14 can be connected to an external printer.

# Colour Reader CECF-9

## Your personal electronic colour fan!

The Konica Minolta CECF-9 is an “electronic colour fan”, to identify and/or search the closest colour from up to 5000 stored colour shades of any colour fan such as RAL etc. It is therefore an ideal instrument for “Point of Sale (POS) application such as Paint shops or Do-it-yourself stores.

Unlike other products of this kind, the CECF-9 uses a sphere geometry, 8 mm aperture and tungsten lamp illumination which accurately measures small, structured and inhomogeneous samples of any material with much higher reliability and repeatability.





## Spectrophotometer CM-3220d

The CM-3220d is a very compact, lightweight, rugged and extremely easy to use table spectrophotometer for colour matching and quality control in the laboratory for "Point of Sale" applications.

Special attention has been put on easy operation with only essential features as well as robustness and total reliability. Nevertheless, compared with other instruments targeting this market segment, the CM-3220d offers xenon flash illumination, very good inter instrument agreement and the reliability levels one can expect from Konica Minolta only.



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