



KONICA MINOLTA

Solutions for Controlled Visual Assessment

Colour Viewing Cabinets Create a Controlled and Consistent Environment for Visual Assessments



Giving Shape to Ideas

Seeing is Believing but Agreeing is the Real Objective

A consistent and controlled atmosphere for performing visual assessments is a key tool throughout specification, approval, manufacturing and Quality Control. As part of a robust colour and appearance management system visual assessments provide a vital link back to the eyes of the customer.

- Specification:** At the specification stage, agreeing standards under controlled lighting can remove inconsistencies supported by instrumental measurement both parties can agree and even set tolerances.
- Goods in:** Visual assessments can be performed at Goods in prior to accepting delivery or before any errors are compounded and further costs incurred.
- Manufacturing:** Dependent on the product and industry, visual assessments can be used once or many times throughout the manufacturing process as part of a wider scheme of QC processes.
- Approval:** At the end of the manufacturing process, many manufacturers will seek to complete a final assessment or even an in person visual approval with the customer. At this point the original specifications, measurements and approvals support the final sign off.

Konica Minolta supply a range of Colour Assessment Cabinets from Just Normlicht including traditional Fluorescent tube cabinets, LED cabinets and Hybrid systems. As LED illumination is increasingly common in Home, Retail, Public & Transport environments so too should products that will be viewed, used or sold in these environments be assessed under LED light. JUST Normlicht products allow for not only simulation of Standard Illuminants but can be programmed to simulate coloured effect lighting i.e. automotive footwell or to customer specified LED environments i.e. retail lighting design.

A lighting cabinet enables users to view colours under consistent lighting conditions. Controlled viewing should form part of any colour specification, quality control and approval process and is recommended when carrying out any visual assessments of colour samples. Using a colour assessment cabinet throughout these processes can help to eliminate quality and supply chain colour disputes.

At a Glance Systems for all Applications

Model	LED Color Viewing Light	LED Color Viewing Light XS	LED Color Viewing Light XL Hybrid	Color Viewing Light (4 lamps)	Color Viewing Light (5 lamps)	Color Viewing Light XL	Color Viewing Light XXL
Light sources	D50, D65, A, simulated TL84, UV*	D50, D65, A, simulated TL84, UV*	D50, D65, A, UV + tubes**	D65, A, TL84, UV	D50, D65, A, TL84, UV	D50, D65, A, TL84, UV	D50, D65, A, TL84, UV
Outside dimensions W x H x D (cm)	68 x 51 x 42	36 x 51 x 42	108 x 80 x 88	68 x 46 x 42	79 x 59 x 51	128 x 46 x 42	128 x 111 x 100
Illuminated area W x H x D (cm)	65 x 38 x 36	33 x 38 x 36	95.5 x 64.5 x 73	65 x 38 x 36	74 x 40 x 50	114 x 38 x 36	114 x 80 x 83
Weight (kg)	17.0	10.0	45.0	6.0	12.0	14.0	57.0
UV recognition	Controlled UV content for recognition of fluorescence (OBA's)	Controlled UV content for recognition of fluorescence (OBA's)	Controlled UV content for recognition of fluorescence (OBA's)	UV tube	UV tube	UV tube	UV tube
Calibration	Unique LED calibration method (Pat. Pend.) provides long-lasting, consistent light quality	Unique LED calibration method (Pat. Pend.) provides long-lasting, consistent light quality	Unique LED calibration method (Pat. Pend.) provides long-lasting, consistent light quality	—	—	—	—

Systems to match your needs

Fluorescent, LED & Hybrid

Portable or Extra Large



Color Viewing Light

The basic standard fluorescent tube based colour viewing cabinet with either 4 (D65 / TL84 / A / UV) or 5 Illuminants (D50 / D65 / TL84 / A / UV). The cabinet is fitted with a service hour meter and neutral grey glare free viewing surface. The 5 illuminant cabinet also features an Electronic control panel. Compliant to ISO 3664, ISO 3668, DIN 6173-2, ASTM 1729 (others on request).



LED Color Viewing Light & LED Color Viewing Light XS

The **LED Colour Viewing Light** is an excellent choice for labs, meeting rooms or the factory floor. The portable XS version can be taken to customers, exhibitions, suppliers. Where no standardised viewing environment is available this will allow you to control the conditions where products are specified and approved.

Just Normlicht LED cabinets use a unique calibration process to create stable and accurate LED lighting with a life span 10 times that of a fluorescent tube and is mercury free.

Using the optional software the system can be customised to illuminants over a large gamut. Simulation of standard Daylight e.g. D50, D65, D75 & UV to visualise Fluorescence of Optical Brighteners.



LED Color Viewing Light XL Hybrid

The **LED Color Viewing Light Hybrid XL** features the same calibrated stable LED system as the **LED Color Viewing Light** with three additional fluorescent light tubes (TL84 as standard, can be customized upon request). The Hybrid XL is also available as a hanging luminaire.



Color Viewing Light XL & XXL

Large format light cabinets using traditional fluorescent lamp technology (5 lamps D50 / D65 / TL84 / A / UV).



Things to Consider When Performing Visual Assessments



The Assessor

- The way that assessors use the cabinet should also be trained and assessed.
- Assessors should view samples at the same angle to mitigate surface effects, a positioning table or height adjustable chair can be used.
- Assessors should rest their eyes using the neutral cabinet background and be aware that being tired or unwell may effect their accuracy.
- The assessor should not wear brightly coloured clothes that will reflect back into the cabinet.
- Assessors should be routinely tested for colour vision (typically Munsell 100 Hue test) and colour blindness (Ishihara) with the necessary correction steps i.e. some assessors may need to delegate assessment of certain colours.



The Environment

- The environment where assessments are performed should be considered, stray light should wherever possible be eliminated e.g. using a floor to ceiling curtain.
- The cabinet should be free from clutter that may reflect different colours or distract the assessor.



The Sample

- The standard should be the same as the item under assessment, same size, same texture, same temperature and humidity.
- When assessing, the samples should be adjacent and any directional structure should be in the same direction.
- If partially opaque the samples should be folder or backed in the same way.



The Cabinet

- Cabinets should be correctly maintained as per the manufacturer's specification. Traditional fluorescent tube systems have a shorter tube life span and should be maintained and replaced using tubes from the manufacturer (not all fluorescent tubes are rated for visual assessment).
- Samples should be assessed under different illuminants to assess for metamerism or other inconsistency.



Custom Illuminants Using a Konica Minolta Illuminance Meter



Users can create custom illuminants for the **LED Color Viewing Light** cabinets using the **adJust LEDcontrol** professional software (optional). By using a Konica Minolta Sensing Illuminance Meter such as the CL-70f or CL-500A to accurately measure illuminance, colour temperature and chromaticity coordinates this data can be used to program a custom illuminant. By measuring the cabinet's simulation of that illuminant the visual assessment illuminant data can be used within SpectraMagic NX or Colibri to ensure that custom illuminants can be accurately assessed both under visual assessment and instrumental measurement.

A calibrated and traceable illuminance meter can also be used to monitor the cabinet over the medium term between service intervals.

