

COLOR AND APPEARANCE.

INT

VIEWING DEVICES
FOR PRECISE EVALUATION
OF COLORED SURFACES
AND MATERIALS.

固润光电



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JUST. SETTING STANDARDS FOR OVER 40 YEARS.

Compliance with meeting the requirements and conditions of industry standards has been the mission of JUST Normlicht for over 40 years. This important link in the color quality control chain includes complying with ISO 3664:2009, ISO 3668, ASTM D1729, DIN 6173-2 plus other international standards (ASTM, ISO, BSI etc.) for general color evaluation.



Classic Line transparency viewers

The Classic Line transparency viewer with two brightness levels and in three sizes was introduced to the market at the end of the 1970s. Classic Line light panels were the first slide viewers with standardized lighting used by photographers, traditional repro and for catalog production.



Color Control Professional Transparency Viewer with 5000 Kelvin

This progressively adjustable slide viewer was equipped with two brightness levels and was acclaimed by the Design Center Stuttgart and included in the „German Selection 1985“.



Color Proof Light

It was in the mid-1980s when JUST first introduced the asymmetrical color proof lights with directed light which enabled virtually glare- and reflection-free color matching. Symmetrical Color Proof Lights with diffused light were used in meeting rooms.

What started as “the standard” for the graphic arts industry, JUST Normlicht color proof lights soon found their way into other sectors such as the automotive, furniture and textile industries. A true color reproduction based on an original template is a prerequisite in order to meet the ever more demanding quality assurance requirements.



Lithography Workstations

JUST lithographer workstations were used in the 1970s and 1980s for retouching print films in conventional reprography. Workstations were equipped with light tables, slide viewers, photographic templates and a tool holder.

1975-2000

Metrological quality control with spectrophotometers provides reliable indicators, but only in conjunction with a visual color assessment can it offer a complete picture of the achieved color match. The biggest influence on visual matching is lighting. Incorrect lighting leads to misjudgements and then inevitably to complaints and increased costs for the production process.

A frequent requirement is consistent color matching of different materials. In a passenger car, for example, the plastic dashboard, the textile interior and the product images in the catalog should all be reproduced in an identical color. In order to accurately color match the most diverse of materials in accordance with defined standards, high-quality, standardized lighting technology is required.

JUST Normlicht has been developing products and solutions to create controlled lighting conditions in accordance with international standards for over 40 years. Our objective in all of our products – from our JUST daylight fluorescent lamps for daylight replication with 5000 and 6500 Kelvin, through our Color Companion viewing stations to our LED Color Viewing Light booths – is to develop reliable, consistent and standardized lighting systems for you.



2004 proofStation with JUST moduLight

At the turn of the millennium, JUST once again set new benchmarks for color management in the graphic arts industry with its new lighting technology, innovative design and ease of use.



2008 Patented LED technology with LED Color Viewing Light and LED colorControl

By 2008 it was now possible for the first time to use a multispectral LED light source to reproduce any illuminants in the JUST viewing booths resulting in stable lighting conditions and LED-based standardized matching processes.



2012 GL SPECTIS 1.0 touch

The GL Optic brand was launched by JUST to achieve user-friendly, maximum-precision light measurements. The smart GL SPECTIS 1.0 touch spectrometer was the first of its kind in the world. It enables mobile light measurements and is touch-screen operated.



2015 Wall Illuminator

Translucent large-format prints can now also be backlit for the first time with the Wall Illuminator Backlight. Whether for trade show displays or advertising posters, standardized illumination over a complete back wall can now be achieved.

JUST DAYLIGHT 6500

proINDUSTRY



In addition to metrological quality controls, the visual control of color matches is also very important.

The ISO 3668, ASTM D1729 and DIN 6173-2 standards specify a mandatory benchmark for visual color comparisons used in different industries. These describe all the parameters, such as the implementation, viewing and environmental conditions, that are required to ensure a standardized color comparison. The JUST daylight 6500 proIndustry fluorescent lamp complies with these strict standards and as a result creates controlled and reproducible lighting conditions for the standardized matching of a wide range of materials.



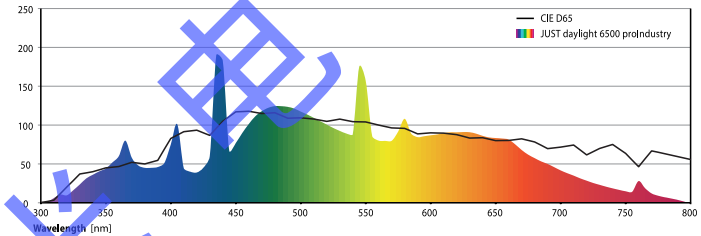
The **JUST daylight 6500 proIndustry** fluorescent lamp, developed specifically for JUST, complies with current industry standards and achieves perfect values.



Regular lamp replacement
Fluorescent lamps change color after about 2,500 operating hours, therefore, to achieve consistent standard lighting conditions we recommend replacing lamps on a regular basis.

Certified standardized light quality – made by JUST.

Spectral light distribution with an improved UV component.



The test report provided with every delivery of the JUST daylight 6500 proIndustry, confirms compliance with strict specifications.

JUST daylight 6500 proIndustry achieves perfect values in relation to:

- **Target Color Point D65**
in accordance with CIE D65.
Minimum deviation of $\pm 0,003$ (x, y^{10°).
- **Color Rendering Index (CRI)**
high CRI: $R_a \geq 98$ with a correlated color temperature of 6500 Kelvin.
- **Metamerism**
perfect values for metamerism; minimum class BC according to CIE 51.2
- **Certified light quality**
As a guarantee of the unique light quality of the JUST daylight 6500 proIndustry, you receive a certified measurement report with each delivery.
- **Ecological front-runner**
JUST is also one-step ahead when it comes to environmental protection as JUST daylight 6500 contains less than 3.5 mg of mercury per lamp.
- **Unique manufacturing process**
The unique fluorescent lamps using 7-band technology. The light color is generated with seven different phosphors which significantly improves spectral properties.
- **Light audit**
Our qualified consultants will be happy to advise you in assessing the overall lighting situation at the workstations in your company.

Just ask us!

Article No. Color temperature Efficiency (watt) Length (mm) Packing unit

JUST daylight 6500 proIndustry

200446	6500 K	18	590	1 piece
200449	6500 K	18	590	10 pieces
200450	6500 K	18	590	25 pieces
200447	6500 K	36	1200	1 piece
200451	6500 K	36	1200	10 pieces
200452	6500 K	36	1200	25 pieces
200448	6500 K	58	1500	1 piece
200453	6500 K	58	1500	10 pieces
200454	6500 K	58	1500	25 pieces

COLOR VIEWING LIGHT

BASIC / ADVANCED / PROFESSIONAL

The Color Viewing Light range, with its maximum of five different light sources, provides consistent test conditions for visual quality assurance. In contrast to normal lights or even daylight, the spectral composition of light in the viewing booths remains unchanged and therefore, so does the visual color impression.

The application areas are endless, ranging from the matching of coatings, through ceramics to plastics and textiles. Depending on the size of the object, there is always space for reliable color proofing in one of the five different sizes of the Color Viewing Light. In addition, the Electronic Control Panel of the ADVANCED and PROFESSIONAL range has many user-friendly features such as a LAN-interface, web based remote control application, mixed light capabilities, a digital hour meter for all illuminants and lamp dimming.

The five standard illuminants:



D65 Northern daylight for visual matching in accordance with CIE, ISO 3668 and DIN 6173-2 and other standards



A Incandescent lighting such as in the home, hotels and restaurants



TL84 (F11) Typical lighting for offices, showrooms and exhibitions



Equipped as standard with **D50** Daylight for color matching in the graphic arts industry



UV-A for the detection and assessment of materials with optical brighteners, fluorescent dyes and whiteners

On request you can also obtain our Color Viewing Light with additional illuminants such as **TL83 (F12) with 3000 Kelvin** or **Cool White Fluorescent (F2)**.

Color Vision Viewer

with three different light chambers for testing color shifts on identical samples.



Metameric detection

Metameric pairs which appear identical under one specific illuminant, display significant color differences under changed lighting conditions. These color differences can easily be identified with the Color Viewing Light irrespective of the material. The viewing booths can display up to five different illuminants and therefore create reliable conditions for secure color assessment and metameric detection.

COLOR VIEWING LIGHT BASIC

The viewing booths "BASIC" provide a reliable color assessment between three, four or five illuminants. The illuminants are switched on/off by a switch and the lamp's operating life is monitored by a digital hour meter. The compact design of the BASIC Color Viewing Light makes it suitable for small to medium-sized samples, irrespective of the material or intended purpose.

- Cost-effective entry-level class
- A choice of 3, 4 or 5 illuminants
- Digital hour meter for D65
- Compact design



Product sizes:



BASIC
W 70 x H 47 x D 43 cm
ADVANCED & PROFESSIONAL
W 70 x H 51 x D 43 cm



ADVANCED & PROFESSIONAL
W 81 x H 60 x D 60 cm



ADVANCED & PROFESSIONAL
W 132 x H 71 x D 60 cm



ADVANCED & PROFESSIONAL
W 162 x H 94 x D 60 cm



ADVANCED & PROFESSIONAL
W 128 x H 111 x D 100 cm

Article No. 230V	Article No. US type	Version	Features	Usable area (W x H x D cm)	Outside dimensions (W x H x D cm)	Relamping Kit 230V	Relamping Kit US type
Color Viewing Light BASIC							
200692	200704	Color Viewing Light 3 BASIC	3 illuminants, digital hour meter (D65)	64 x 33 x 36	70 x 47 x 43	1719	200716
84376	200705	4 BASIC	4 illuminants, digital hour meter (D65)	64 x 33 x 36	70 x 47 x 43	89276	200717
200693	200706	5 BASIC	5 illuminants, digital hour meter (D65)	64 x 33 x 36	70 x 47 x 43	1198	200718
200694	200707	Color Vision Viewer	3 illuminants	je 20 x 48	70 x 47 x 43	1719	200716

COLOR VIEWING LIGHT ADVANCED & PROFESSIONAL

The ADVANCED and PROFESSIONAL Color Viewing Light models offer practical matching for a range of surfaces and materials. The viewing booths have five different illuminants and are available in five different sizes, enabling diverse application areas to be covered.

Color Viewing Light ADVANCED

In the ADVANCED version a sequential order of illuminants can be saved for a recurring matching process. It can also provide mixed light when several light sources are triggered at the same time.

- 5 illuminants*: D65, D50, TL84, A, UV
- User-friendly Electronic Control Panel
- Digital hour meter for all illuminants
- Mixed light function
- Storage for 1 light sequence
- 5 different sizes: S, M, L, XL, XXL

*Standard design; on request other illuminants can be supplied



Color Viewing Light S ADVANCED



Color Viewing Light L ADVANCED

Article No. 230V	Article No. US type	Version	Features	Usable area (W x H x D cm)	Outside dimensions (W x H x D cm)	Relamping Kit 230V	Relamping Kit US type
200144	200708	Color Viewing Light S ADVANCED	5 illuminants, Electr. Control Panel	64 x 33 x 36	70 x 51 x 43	1198	200718
86108	85712	M ADVANCED	5 illuminants, Electr. Control Panel	75 x 41 x 51	81 x 60 x 60	1198	200718
200275	200709	L ADVANCED	5 illuminants, Electr. Control Panel	125 x 53 x 54	132 x 71 x 60	200700	200719
200684	200710	XL ADVANCED	5 illuminants, Electr. Control Panel	155 x 76 x 54	162 x 94 x 60	200701	200720
3426	7997	XXL ADVANCED	5 illuminants, Electr. Control Panel	114 x 80 x 83	128 x 111 x 100	200699	200721

Color Viewing Light ADVANCED

Color Viewing Light PROFESSIONAL

The professional version offers many additional features. Illuminants can be dimmed and detailed reports on the matching process can be compiled. This means that all viewing booth parameters such as operating hours, selected illuminant and dimming level can be recorded in a log report, ensuring a possible repeat of the matching process at a later time. The viewing booth can also be operated remotely via a web-based remote control application and LAN connection by smartphones and Tablet-PCs.

- Dimmable light of all illuminants (except A)
- LAN connection
- Web-based remote control application for smartphones and Tablet-PCs
- Reporting function
- Storable brightness value
- 5 illuminants*: D65, D50, TL84, A, UV
- User-friendly Electronic Control Panel
- Digital hour meter for all illuminants
- Mixed light function
- Storage for several light sequences

*Standard design; on request other illuminants can be supplied



The remote-app can be used to easily select the illuminant via a laptop or smartphone and specify the automatic matching processes. In addition, the viewing booth can be turned on remotely with the browser so that it is immediately available after the warm-up period.

The Color Viewing Light XXL ADVANCED and PROFESSIONAL is used to assess the color of large and bulky objects. The huge volume of the viewing booth provides space for the visual assessment of components that are often seen in the metal and plastics processing industries.

Color Viewing Light XXL PROFESSIONAL

Article No. 230V	Article No. US type	Version	Features	Usable area (W x H x D cm)	Outside dimensions (W x H x D cm)	Relamping Kit 230V	Relamping Kit US type
200687	200711	Color Viewing Light S PROFESSIONAL	LAN, Dimmer, Remote-App	64 x 33 x 36	70 x 51 x 43	1198	200718
200688	200712	M PROFESSIONAL	LAN, Dimmer, Remote-App	75 x 41 x 51	81 x 60 x 60	1198	200718
200689	200713	L PROFESSIONAL	LAN, Dimmer, Remote-App	125 x 53 x 54	132 x 71 x 60	200700	200719
200690	200714	XL PROFESSIONAL	LAN, Dimmer, Remote-App	155 x 76 x 54	162 x 94 x 60	200701	200720
200691	200715	XXL PROFESSIONAL	LAN, Dimmer, Remote-App	114 x 80 x 83	128 x 111 x 100	200699	200721

ACCESSORIES

COLOR VIEWING LIGHT

The extensive range of accessories for the Color Viewing Light series provides solutions which are perfectly tailored for your requirements.



Matte-black interior lining

For dark matching products, all Color Viewing Lights can be fitted with a matt-black interior lining. This reduces the brightness contrast between the color to be matched and the viewing booth.



45° angled viewing surface

The 45° gradient angle ensures a standardized viewing perspective in accordance with international standards.



Progressive angle adjustment 0-60°

At variably defined viewing angles, each angle can be set with progressive adjustments between 0 and 60°.



Sample holder with 5 angled adjustments

The sample holder with 5 preset stops (-15°, 0°, 15°, 45°, 60°) is required for highly reflective surfaces like metallic paints. Also color changing and angle dependent colored surfaces can be matched.



Storage Cabinet for Color Viewing Light XXL

The bottom cabinet with its fitted drawers ensures that the Color Viewing Light XXL is positioned on a stable base. On request different cabinets are available.



Floor stand on wheels for Color Viewing Light XXL

The roller frame is used to move the Color Viewing Light XXL around the room easily and robustly.

Article No. Version

Usable area
(W x D cm)

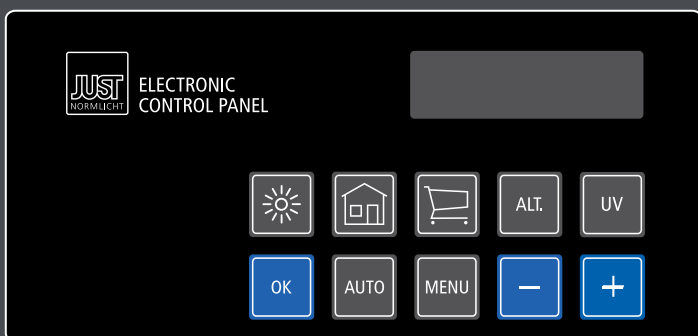
Outside dimensions
(W x H x D cm)

Accessories

200735	Matte-black interior lining (please specify the size you need)		
95489	Progressive gradient adjustment 0-60°	49 x 33	
102244	Progressive gradient adjustment 0-60°	65 x 55	
61598	45° angled viewing surface	63 x 27	
83824	45° angled viewing surface for hanging	107 x 87	
200734	Sample holder with 5 angled adjustments (-15°, 0°, 15°, 45°, 60°)	40 x 20	
28647	Floor stand on wheels	121 x 90	121 x 100 x 90
13508	Storage Cabinet	120 x 91	120 x 96 x 91

ELECTRONIC CONTROL PANEL

The ADVANCED and PROFESSIONAL Color Viewing Light range models are equipped with an Electronic Control Panel which performs a variety of tasks, enabling the illuminant choice and its dimming to be easily controlled. The Color Viewing Light can also be operated via a browser-based remote app and can also be remotely operated via wireless devices such as smartphones and laptops via the connection to the in-house network. Below is an overview of the different functions of the ADVANCED and PROFESSIONAL versions:



D65 Northern daylight for visual matching in accordance with CIE D65, DIN 6173

ALT.

D50 Daylight for color matching in the graphic arts industry



A Incandescent lighting such as in the home or in restaurants

UV

UV-A for the detection and assessment of materials with optical brighteners, fluorescent dyes and whiteners



TL84 (F11) Typical lighting for offices, showrooms and exhibitions

ADVANCED

PROFESSIONAL

Illuminants	5 (D65, D50, TL84, A, UV)	5 (D65, D50, TL84, A, UV)
Available sizes	S, M, L, XL, XXL	S, M, L, XL, XXL
LAN connection		✓
Programmable sequences	1	10
Dimming (apart from A)		✓
Storable dimming		✓
Reporting function		✓
Remote-app		✓
Digital hour meter	✓	✓
Mixed light	✓	✓

GARMENT VIEWING BOOTH

In the Garment Viewing Booth textiles and clothing items can be matched in their original sizes. The Garment Viewing Booth has different light sources on the top and on both sides to ensure standardized illumination of the full viewing booth.

- Dimmable light of all illuminants (except A)
- LAN connection
- Web-based remote control application for smartphones and Tablet-PCs
- Reporting function
- Storable brightness value
- 5 illuminants*: D65, D50, TL84, A, UV
- User-friendly Electronic Control Panel
- Digital hour meter for all illuminants
- Mixed light function
- Storage for several light sequences

*Standard design; on request other illuminants can be supplied



Article No.	Article No.	Version	Features	Usable area (W x H x D cm)	Outside dimensions (W x H x D cm)
230V	US type				
Garment Viewing Booth					
27706	200737	Garment Viewing Booth	5 illuminants, Electr. Control Panel	115 x 165 x 60	128 x 196 x 100

MULTILIGHT BASIC

The versatile multiLight color proof lights creates matching situations exactly where they are needed. multiLight BASIC can be fitted with two or three illuminants. multiLight PROFESSIONAL has five illuminants (D65, D50, TL84, A, UV) and can connect multiple multiLight PROFESSIONAL in a series in order to increase the viewing area.

multiLight BASIC

- Uniform light distribution
- Glare- and reflection-free illumination
- Digital hour meter
- A choice of 2 or 3 illuminants
- D65 plus additional illuminant on request

The specially developed prismatic glass guarantees consistent light distribution and accurate light guidance. The integrated hour meter for the different illuminants promptly indicates the necessary lamp replacement after 2,500 operating hours.



multiLight BASIC

Article No. 230V	Article No. US type	Version	Features	Standard illumination area (W x D cm)	Outside dimensions (W x H x D cm)
multiLight BASIC					
23234	25312	multiLight 2 M BASIC	2 illuminants	100 x 70	128 x 16 x 80
23242	25320	2 L BASIC	2 illuminants	130 x 70	158 x 16 x 80
23267	25346	2 XL BASIC	2 illuminants	140 x 100	158 x 16 x 100
2600	7641	multiLight 3 M BASIC	3 illuminants	110 x 100	124 x 16 x 100
2626	7674	3 L BASIC	3 illuminants	140 x 110	124 x 16 x 150
2634	7849	3 XL BASIC	3 illuminants	190 x 110	124 x 16 x 195

*With D65 plus 1 or 2 additional illuminants from: D50, TL83, TL84, A, C



Relamping Kit
230V

Relamping Kit
US type

200738

200739

MULTILIGHT PROFESSIONAL

multiLight PROFESSIONAL

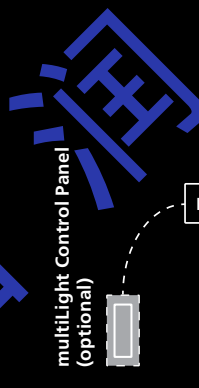
- Dimmable light for all illuminants (except A)
- LAN connection
- Web-based remote control application for remote control of multiLight
- Reporting function
- Storable brightness value
- 5 illuminants*: D65, D50, TL84, A, UV
- User-friendly Electronic Control Panel
- Digital hour meter for all illuminants
- Mixed light function
- Storage for several light sequences
- Prismatic glass for glare- and reflection-free color matching

*Standard design; on request other illuminants can be supplied



multiLight PROFESSIONAL connect

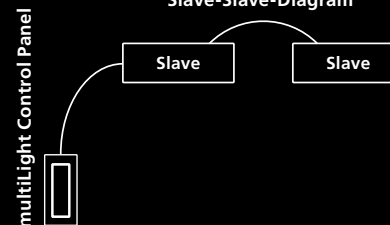
In accordance with the „master-slave principle“ the Electronic Control Panel can expand the master lamp with additional lamps without a control (so-called slave lamps). Alternatively several of these slave lamps can be switched on consecutively and be operated via the external multiLight Control Panel or via the web based remote control application and Wi-Fi.



Master-Slave-Diagram



Slave-Slave-Diagram



Article No. Master/Slave 230V	Article No. Master/Slave US type	Version	Features	Standard illumination area (W x D cm)	Outside dimensions (W x H x D cm)	Relamping Kit 230V	Relamping Kit US type
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multiLight PROFESSIONAL

200686 / 200723	200726 / 200727	multiLight L PROFESSIONAL	5 illuminants, ECP, LAN, Dimmer, Remote-App	125 x 54	132 x 12 x 60	200700	200719
200722 / 200724	200728 / 200729	XL PROFESSIONAL	5 illuminants, ECP, LAN, Dimmer, Remote-App	155 x 54	162 x 12 x 60	200701	200720
	200725	multiLight Control Panel (extern)					

JUST MODULIGHT 6500

Whether for small meeting rooms, complete matching stations or spaces, JUST moduLight adapts to your room situation and creates standard lighting conditions where they are required.

Fresnel prism glass ensure precise color control without any irritating reflections and mirroring. Sophisticated lamellar technology creates a brightness and light distribution never seen before across the matching surface. JUST moduLight technology is therefore unparalleled in light quality, illuminance and uniformity in its creation of trouble-free matching conditions. As an option all JUST moduLights are available with SPcontrol which enables progressive dimming.

- Avoidance of reflections and mirroring through Fresnel prism glass
- Tight tolerances of $\pm 0.003^\circ$ at the target color point
- Color Rendering Index $Ra \geq 98$
- Illuminance of 2000 lux and lighting uniformity of ± 250 lux



Fresnel prism glass
For full glare and reflection-free color matching.



Traffic-light function
In order to ensure standardized color matching over many years, three colored LEDs located on the JUST moduLight draw attention to the next tube replacement after 2,500 operating hours.

Article No. 110-230V	Article No. US type	Version	Standard illumination area (W x D cm)	Outside dimensions (W x H x D cm)
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JUST moduLight 6500 AS

83709	89599	JUST moduLight 2/18-AS	50 x 50	88 x 11 x 31
83691	103739	JUST moduLight 2/36-AS	100 x 50	134 x 11 x 31
80093	89615	JUST moduLight 2/58-AS	140 x 50	164 x 11 x 31
83683	89623	JUST moduLight 4/18-AS	70 x 50	88 x 11 x 62
83675	89631	JUST moduLight 5/36-AS	100 x 70	134 x 11 x 78
89573	89649	JUST moduLight 6/58-AS	140 x 100	164 x 11 x 113

JUST moduLight 6500 CS

83758	89664	JUST moduLight 2/18-CS	50 x 50	88 x 11 x 31
55681	86907	JUST moduLight 2/36-CS	100 x 50	134 x 11 x 31
80127	89680	JUST moduLight 2/58-CS	140 x 50	164 x 11 x 31
83741	89698	JUST moduLight 4/18-CS	70 x 50	88 x 11 x 62
55699	89714	JUST moduLight 4/36-CS	100 x 60	134 x 11 x 62
80119	89722	JUST moduLight 4/58-CS	140 x 80	164 x 11 x 62

Custom sizes are available on request.



For viewing
from one side

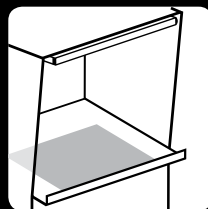


For viewing
from all sides

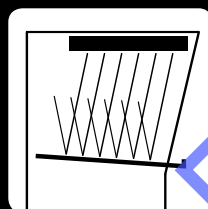
COLOR COMPANION

Color Companion is a large-format solution for the matching and quality assurance of industrial applications. It meets the highest standards and can be customized to your individual requirements with its flexible combination of accessories. Color Companion is available in two sizes and two versions, the standard version and the multiLight version with four illuminants (D65, D50, TL84 and A).

The optional UV-proof light makes Color Companion the ideal choice for assessing fluorescent products. JUST moduLight color proof lights are the perfect choice for glare- and reflection-free illumination and are unparalleled in terms of light quality and illuminance.



With Color Companion an area of up to 160 x 120 cm can be illuminated in accordance with all relevant standards. The big usable area makes working easier.



The asymmetrical light direction of the JUST moduLight allows for exact color control without any annoying glares and reflections.



Article No.	Article No.	Version	Standard illumin. area (W x D cm)	Usable area (W x H x D cm)	Outside dimensions (W x H x D cm)
230V	US type				

Color Companion 30

200750	200751	with JUST moduLight 4/36-AS	140 x 100	161 x 120	169 x 230 x 148
200053	200436	with multiLight 4 illuminants (D65, D50, TL84, A)	140 x 100	161 x 120	169 x 230 x 148

Color Companion 40

200752	200753	with JUST moduLight 4/58-AS	160 x 120	202 x 135	210 x 230 x 161
200097	200434	with multiLight 4 illuminants (D65, D50, TL84, A)	160 x 120	202 x 135	210 x 230 x 161

Article No. Version

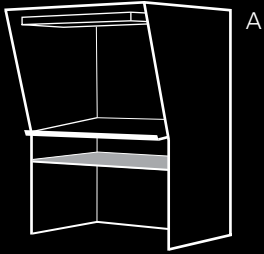
Accessories

30 | 40

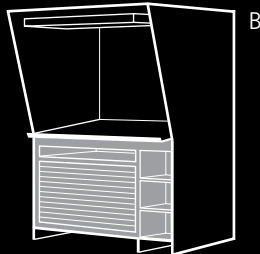
200054 200098	Shelf A
13672	Storage Cabinet B
173682 200091	Side shelf B
200089 200090	Filling cabinet C
200234 200235	JUST UV proof light (230V) 1/2x36W 1/2x58W
200440 200439	JUST UV proof light (US type) 1/2x36W 1/2x58W

TRANSPARENCY VIEWERS / LIGHT TABLES

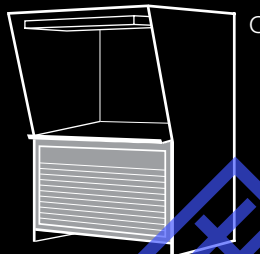
Accessories range and possible combinations



With up to five shelves, there is sufficient storage space for fast access to matching tools. The shelves can be placed in any position.



The side shelves provide many storage options together with the add-on cabinet in which tools can be stored in 15 drawers.



The filing cabinet has different levels of drawers and a lockable compartment to store utensils of all kinds.

Usable area
(W x D cm)

161 x 105 | 202 x 120
each 109 x 80 | 109 x 80
each 36 x 43 | 77 x 43
each 150 x 124 | 170 x 137

JUST light tables and transparency viewers are characterized by their flexibility of use and consistent illumination. Light tables are available with adjustable bases which offer an ergonomic technology and easy to use application. In the standard light design, light tables can be progressively dimmed. They have a color-neutral non-reflective surface and are also available with scratch-resistant crystal glass surface. Both, the transparency viewers and the light tables are best suited for quality controls in industrial applications due to their reliable and consistent illumination.

Classic Line



Transparency Viewers

The dimmable panels are used to check the integrity of translucent materials such as plastics and textiles. The Classic Line includes seven different sizes up to a maximum illumination area of 109 x 59 cm.

Light tables

Large transparent samples can be viewed through the scratch-resistant Standard and Vario light tables. In the Vario version the light tables are height and angle adjustable which promotes ergonomic working conditions.



Standard & Vario

Large-format light tables

The illuminant area of over 200 x 100 cm enables quality control to be performed on large-format and translucent materials.



Large-format light tables

For more information please visit our website at www.just-normlicht.com or contact us at info@just-normlicht.com

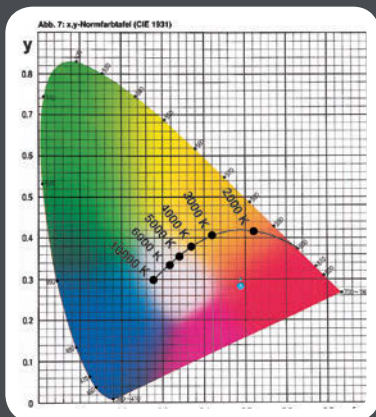
LED COLOR VIEWING LIGHT

HYBRID

Their long operating life, robustness, the absence of mercury and low phosphorous content are just a few of the features which make LED lamps attractive for both personal and industrial applications. Viewing booths with traditional light sources cannot simulate different illuminants such as D65, A or artificial illuminants. A separate lamp or viewing booth is necessary for every illuminant.

LED Color Viewing Light booths have a multi-spectral LED light source which meets these requirements and can be used to reproduce any possible light spectrum in high quality. This means that the generation of illuminants such as D65, D50 or A is just as possible as the implementation of any artificial illuminant. In the hybrid design, metameric failures can be detected by the addition of fluorescent lamps.

Through the unique calibration process of the multi-spectral LED light source, stable lighting conditions can be guaranteed for years.



Light quality

The CIE chromaticity diagram to display light color (see fig.) creates the visible color spectrum of the human eye using x, y coordinates. The Planckian locus displayed inside reproduces the color coordinates of the Planck radiator at different temperatures.

In order to determine the light quality for matching, one must understand the color properties of the light source, in other words, color reproduction, color temperature and metameric color deviation. These are summarised in the Color Rendering Index (Ra) and the metamerism indices Mi (VIS) or Mi (UV). The Ra-value provides information on the perception of non-illuminated colors under a standard light source. The metamerism indices also expresses how well the light source simulates standard illuminants over the entire light spectrum.

The color temperatures along the curve, such as those of standard illuminant D65 or D50, can be reproduced exactly by the LED Color Viewing Light and are already programmed into the device. Through the LED technology, other color coordinates form one color spectrum bigger than sRGB can be selected as an illuminant for the LED Color Viewing Light.



**LED Color Viewing
Light M**

Any reproduction of illuminants

Through the multispectral LED light source, any illuminant can be implemented in high-quality. Metameric failures can be detected more reliably and for all user-relevant illuminants. The LED Color Viewing Light can be quickly commissioned with the 5 illuminants (D65, D50, TL84, A, UV) that are already pre-programmed.



- Perfect implementation of any standard illuminant D50, D65, D75, A, TL84* or artificial illuminants
- Adding UV energy for the detection of fluorescence

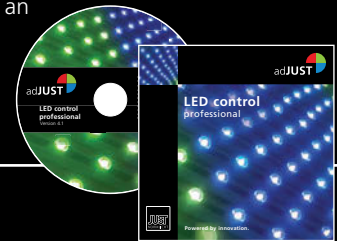


- Free choice of light spectra in a color space bigger than sRGB
- Stable lighting conditions through a patented** multi-level calibration procedure

adJUST LEDcontrol professional adJUST LEDcalibration professional

Any illuminant can be selected and generated by the software adJUST LEDcontrol professional. Up to 10 of these can be transferred to the viewing booths and saved so that they can be permanently retrieved without a PC. Color temperature or color coordinates can also be freely selected.

Recalibration after 3,000 operating hours is easy to perform with adJUST LEDcalibration professional. In conjunction with a spectrometer from the **GL SPECTIS** range, an exact color proof and recalibration can be secured for many more years.



- 10x longer operating life of the multi-spectral LED light sources in comparison to a fluorescent lamp

*in the hybrid-version **Patent No.: US 8,592,748 B2

Accessories and components LED Color Viewing Light
(See page 9 for a detailed version of the optional accessories)



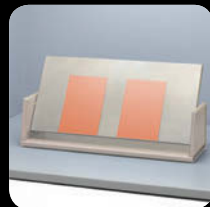
Matte-black interior lining



Progressive angle adjustment 0-60°



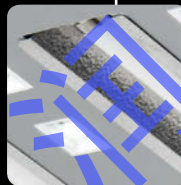
45° angled viewing surface



Sample holder with 5 angled adjustments (-15°, 0°, 15°, 45°, 60°)



LED Color Viewing Light XL HYBRID



HYBRID
Three additional fluorescent lamps for better metamerism failure detection.

Article No.	Article No. US type	Version	Usable area (W x H x D cm)	Outside dimensions (W x H x D cm)
LED Color Viewing Light				
106104*	200733	LED Color Viewing Light S	33 x 38 x 36	37 x 51 x 42
96891	200732	M	65 x 38 x 36	68 x 51 x 42
172841	200731	M HYBRID	65 x 38 x 36	68 x 51 x 42
98681	99291	XL HYBRID	95 x 64 x 73	108 x 88 x 80
104166	200730	LED Color Proof Light XL HYBRID	100 x 70	108 x 12 x 80

Accessories

200735	Matte-black interior lining (please specify the size you need)			
95489	Progressive gradient adjustment 0-60°		49 x 33	
102244	Progressive gradient adjustment 0-60°		65 x 55	
61598	45° angled viewing surface		63 x 27	
200734	Sample holder with 5 angled adjustments		40 x 20	
96925	adJUST LEDcontrol professional			
172668	adJUST LEDcalibration professional			

Multi-Voltage – for worldwide use *not Multi-Voltage

Product sizes:



W 37 x H 51 x D 42 cm



W 68 x H 51 x D 42 cm



W 108 x H 88 x D 80 cm



LED Color Proof Light XL HYBRID
W 108 x H 12 x D 80 cm

GL SPECTIS

1.0 SERIES

The solution for light assessment and the recalibration of viewing booths and other light systems.

The GL SPECTIS range from GL Optic performs precise and reliable light measurements and is used for recalibrating lighting systems.

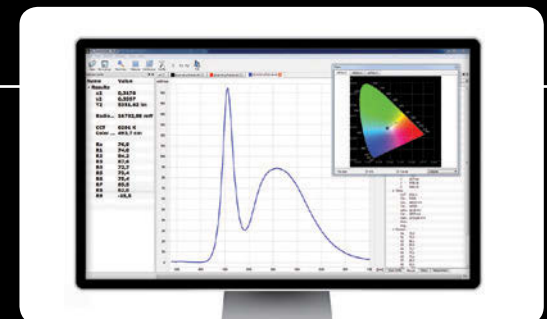


The user-friendly **GL SPECTIS 1.0** operates with a high amount of precision, and once connected to the PC, it can be used immediately. Its high degree of sensitivity and accuracy ensures that light measurement values can be determined precisely and then used for other purposes such as recalibration.



The intuitive **GL SPECTIS 1.0 touch** is a mobile spectrometer for the precise measurement of photometric and radiometric values. The sensor attached to the spectrometer performs measurements without a PC which are then displayed on the color touch-screen. Light and LED measurements can be easily transferred via Wi-Fi, USB 2.0 or microSD-Card to the PC so that light systems such as the LED Color Viewing Light can be recalibrated.

GL SPECTROSOFT PRO is a universal and professional software solution for spectral analysis and is intended for the evaluation of light sources of all types. The software determines the correlated color temperature, the



colorimetric locus, wavelengths plus the Color Rendering Index and color coordinates in accordance with CIE-standards.

Article No.	Version	Features	Measurements; Weight
GL Optic – Spectroradiometer			
106260	GL SPECTIS 1.0 touch	340–750 nm, Touchscreen, Wi-Fi, USB 2.0, microSD card	74 x 145 x 24 mm; 315 g
67827	GL SPECTIS 1.0	340–750 nm, USB 2.0	72 x 115 x 19 mm; 120 g
173724	GL SPECTROSOFT PRO	Evaluation of all lighting metrological data in accordance with CIE and ISO-Standards.	