

Replacing JUST fluorescent lamps

Recommended exchange interval of the fluorescent lamps

Fluorescent lamps change the color of their spectral properties after 2500 hours of operation. In order to achieve consistent standardized lighting conditions, JUST Normlicht recommends replacing the fluorescent lamps in a timely manner. Any extended use will result in changes to the spectral light distribution.

For JUST Normlicht equipment with a functional LED display:

The due date for the replacement is displayed automatically through different colored LEDs:
green: up to 2300 hours of use
yellow: more than 2300 hours of operation but less than 2500 hours
red: over 2500 hours
change the fluorescent lamps

For JUST Normlicht equipment fitted with a digital hour meter

When 2500 hours are displayed change the fluorescent lamps

For JUST Normlicht equipment without a digital hour meter

Simply note the deadline for the replacement on the lamp replacement sticker supplied: (if working in a single-shift environment: 1 x annually).

Advice! JUST Normlicht requires that only original JUST fluorescent lamps be used in order to adhere ISO 3664:2009 compliance. Standard fluorescent lamps made by other manufacturers are not suitable for use in JUST Normlicht viewing devices. The replacement lamp is only one part of the color viewing booth. The only way to guarantee standardized lighting conditions consistently is to use original JUST fluorescent lamps.

Light Audit Technical Consulting

Our qualified consultants are available for the assessment of the lighting situation at your location. Please call!



JUST setting standards.

JUST Normlicht GmbH
Vertrieb + Produktion
Tobelwasenweg 24
73235 Weilheim / Teck
Germany

Phone +49 (0)7023 9504-0
Fax +49 (0)7023 9504-52
info@just-normlicht.com
www.just-normlicht.com

JUST NORMLICHT FRANCE Sarl
3 rue Louis Pasteur
67240 Bischwiller
France

Tel +33 (0)3 88 06 28 22
Fax +33 (0)3 88 06 28 23
info@just-normlicht.fr
www.just-normlicht.fr

JUST Normlicht, Inc.
2000 Cabot Blvd. West
Suite 120
Langhorne, PA 19047
U.S.A.

phone (267) 852-2200
fax (267) 852-2207
sales@justnormlicht.com
www.justnormlicht.com

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JUST daylight 5000 proGraphic Fluorescent lamps
certified to comply with the **ISO 3664:2009** standard.



JUST Normlicht fulfills the criteria of ISO 3664:2009 in every aspect

Standard lighting in the printing process

- Fluorescent lamps for a perfect color match
- Outstanding JUST quality: exact color points, stable lighting, spectral light distribution as well as a homogenous coating for the preservation of the color properties
- A significantly lower mercury content than what is required by RoHS²
- Ideal for the printing industry, graphic arts companies, major photographic laboratories and testing/color control facilities of the industry

The light source is at the heart of the color matching system upon which the graphic arts industry places the highest demands. The required light quality is defined in ISO 3664:2009. The aim is to achieve a quality of lighting that comes as close as possible to the CIE-standard illuminant D50 (approx. 5000 Kelvin). The pre-defined variables, such as:

- Color rendering index Ra
- Color rendering indices Ri
- Metamerism indices in the visual spectrum M_{VIS}
- Metamerism indices in the ultraviolet spectrum M_{UV}
- The maximum permitted color point deviation must be adhered to at the point of the color matching, i.e. the application.

The new version of ISO 3664:2009 standardizes the visual color matching process in the graphic arts industry for prepress and the pressroom. It defines the viewing conditions for application in the field of color testing.

A **tightening up the requirements** with regard to the UV-radiation spectrum was rendered necessary because of increasing problems with metamerism¹ as a consequence of the increased usage of fluorescent materials. The JUST daylight 5000^{proGraphic} fluorescent lamps especially developed for JUST color matching systems fulfill the strict criteria for standardized lighting in every respect.

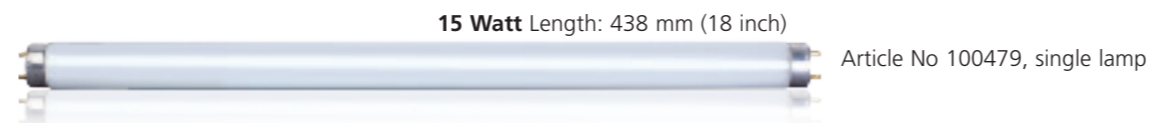
There is no substitute for the **visual inspection** of printed products. For this, controlled lighting conditions as required by ISO 3664:2009 are a prerequisite. JUST fluorescent lamps form the reliable center piece for you in this regard.



JUST daylight 5000 proGraphic - The reliable center piece

The fluorescent lamp for prepress and press. Especially developed for JUST color matching systems.

- Fulfill the standard lighting conditions of ISO 3664:2009
- Highest color rendering $Ra8 = 98 / Ra215 = 95.6$
- Exact color point within (+/- 0.003°)
- Adherence to the metamerism index¹ $M_{VIS} \leq 1.0$ and $M_{UV} \leq 1.5$
- A balanced distribution of the spectral lines
- 6-band fluorescent lamp
- Color temperature 5000 Kelvin
- Available in the lengths 438 mm (18"), 590 mm (24"), 1200 mm (48") and 1500 mm (59")



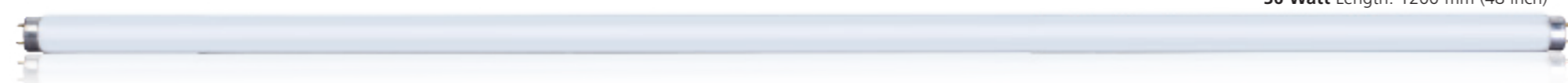
15 Watt Length: 438 mm (18 inch)

Article No 100479, single lamp



18 Watt Length: 590 mm (24 inch)

Article No 95521, single lamp
Article No 100503, packaging unit size 25 pieces
Article No 100537, packaging unit size 10 pieces



36 Watt Length: 1200 mm (48 inch)

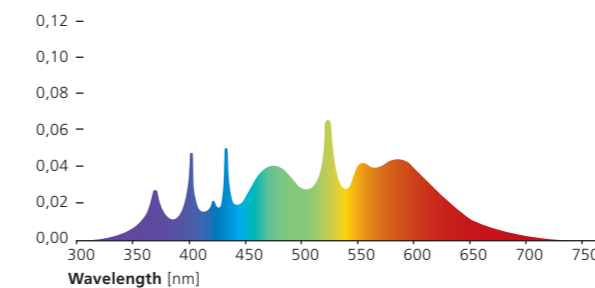
Article No 95323, single lamp
Article No 100495, packaging unit size 25 pieces
Article No 100545, packaging unit size 10 pieces



58 Watt Length: 1500 mm (59 inch)

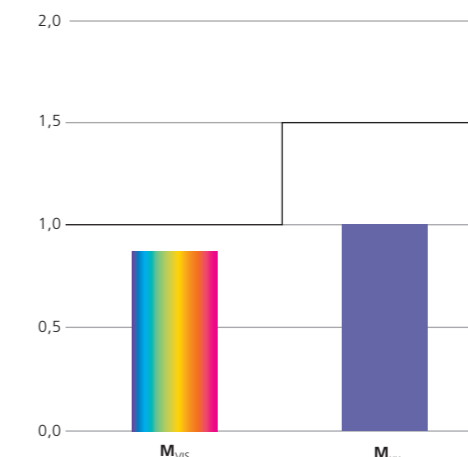
Article No 202883, single lamp
Article No 100511, packaging unit size 25 pieces
Article No 100552, packaging unit size 10 pieces

Spectral light distribution with a new, improved UV-content



The test protocol reveals that the fluorescent lamp JUST daylight 5000^{proGraphic} fulfills the strict criteria for standardized lighting according to ISO 3664:2009.

Metamerism index for the JUST daylight 5000^{proGraphic} fluorescent lamps



Exact color assessment with JUST

The JUST lighting technology and the fluorescent lamps developed especially for JUST fulfills the strict criteria as required by to ISO 3664:2009 and achieve top class results with regards to:

Target color point

A minimal deviation of +/- 0.003° and a balanced distribution of the spectral lines.

Color rendering value

5000 Kelvin and a high color rendering value of $Ra > 90$, $Ri_{1-8} > 80$

Metamerism Index

For the visible spectrum significantly less than 1, in the UV-range considerable smaller less than 1.5 (important for paper containing optical brightening agents).

Unique manufacturing process

The only fluorescent lamp world-wide using 6-band technology. The light color is produced using 6 different phosphors, which significantly improves its spectral properties.

Certified light quality

Each shipment of JUST daylight 5000^{proGraphic} lamps include an independent measuring certificate that guarantees the unique light quality as required by ISO 3664:2009.

Ecological front-runner

JUST is also a step ahead of the rest with regards to environmental protection. JUST daylight 5000^{proGraphic} lamps contains less than 5 mg of mercury per lamp.

Advice!

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¹ Metamerism is a term in the world of optics for the fact that color samples that are compounded differently may, when being viewed under one light source, giving the same color impression, whilst they may appear different when being viewed under a different light source. The metamerism indices M_{VIS} and M_{UV} defined in ISO 3664:2009 describe the quality of the simulation of light type D50 by the standardized light source.

² The EG-Directive 2002/95/EG on the restriction of the use of certain dangerous substances in electrical and electronic devices regulates the usage of dangerous substances in appliances and components.

