

LUMIMAX[®]

UV lighting



**POWER
LIGHTS
FOR
MACHINE
VISION**

made by **iim** MEASUREMENT
ENGINEERING in Germany

Luminescence

Luminescence is the optical radiation that occurs during the transition from a stimulated state to the basic state. A distinction is made between fluorescence and phosphorescence.

Fluorescence

With fluorescence, a material emits light when stimulated. It begins to glow when exposed to a certain wavelength. However, this glowing stops immediately after exposure.

Phosphorescence

Phosphorescence describes a similar effect, although the material also continues to glow after exposure has ended.

Perfectly resolved

The great challenge in fluorescence applications in industrial image processing is that the emitted light (fluorescence) has less energy than the radiation required for stimulation. Fluorescence can be clearly identified by the human eye, while the UV radiation of the lighting is hardly perceived. A camera is much more sensitive in the ultraviolet spectrum. The UV light outshines the fluorescence of the stimulated material in the camera image. The contrast is too low for reliable assessment.

A UV application can be optimised and reliably implemented by precisely coordinating lighting and lens filters. These allow the exact separation of stimulation and emission wavelengths. Interfering UV reflections and extraneous light influences are suppressed. As a result, fluorescent features appear brightly illuminated in the test image.

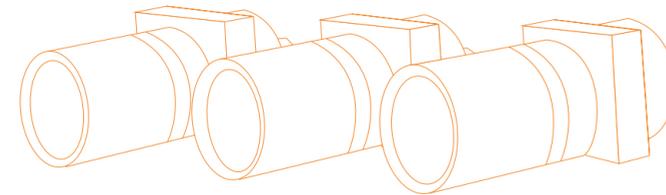
Fluorescence applications

UV lights are used to make invisible features on products visible. The UV radiation causes certain materials to glow. This glowing is clearly visible to the human eye and cameras.

Product labels that consumers find annoying can be applied with transparent, fluorescent ink. However, under UV radiation, the labelling can be made visible for the purposes of inspection.

Fluorescent, low-contrast adhesives, paints and seals can be shown in high contrast with ultraviolet radiation. Presence and completeness monitoring is thus made easier for the camera.

The finest cracks, such as in cast parts, can be made visible with the aid of fluorescence.



Your benefits at a glance

- **industrial & innovative:** high-quality power LEDs with optimal heat management in conjunction with functional design ensure stable light conditions and a long durability
- **speedy and secure:** reduction of extraneous light and motion blurring due to fast, high-performance flashing
- **precise & perfect:** high-quality filters for an optimal solution, coordinated to suit the lighting and application
- **Plug & Play:** fast, simple integration using functional accessories and a standardised connection concept
- **Service & Support:** feasibility studies by experienced employees and free loaning of components assist during realisation

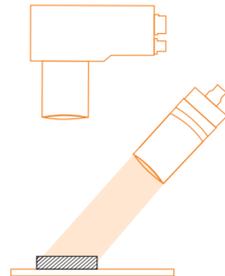
Perfectly coordinated filters

High-quality filter combinations coordinated to the application achieve a precise separation of stimulation and emission wavelengths. UV reflections from the lighting and extraneous light influences are suppressed.

The result:
high-contrast fluorescence



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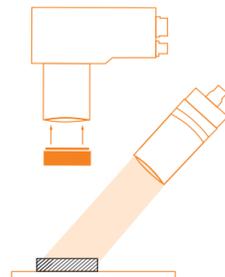
The solution

1

image recording without lens filter, without lighting filter



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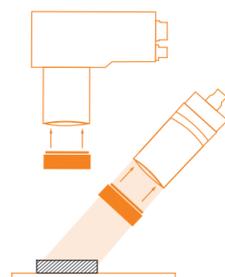


2

image recording with lens filter, without lighting filter



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3

image recording with lens filter, with lighting filter

The areas of application for UV lighting are very diverse. A few examples:

- Inspection of safety features and markings as protection against plagiarism and counterfeiting
- Inspection of adhesives, paints, lubricants and sealant
- Product labelling
- Track & trace
- Residue and residual dirt analyses
- Inspections of cracks, cavities and defects
- Forensic analyses



Lighting:

- LED spots 3W and 5W
- LED area flood light LQ100
- LED ring flood light LR70
- LED mini ring light LSR24
- LED bar lights LB125, LB250 and LB500

Options:

- Operating types: continuous, switch, flashing operation
- UV365 and UV400: Selection of the optimum stimulation wavelength
- Lighting filters: coordinated to the lighting geometry and wavelength
- Option to change lenses: flexible adaptation of the light distribution characteristics



iiM AG - The company

iiM AG measurement + engineering is the developer, manufacturer and distributor of high-quality, high-performance products for industrial image processing.

In Suhl (Thuringia), we develop and manufacture high-performance and highly functional LED lights under the LUMIMAX® brand for machine vision applications in a very wide range of industrial areas, such as for the automobile, semiconductor, pharma, food, drinks and tobacco industries.

A second division develops and markets special measuring technology and peripherals for the cable and wire industry to record geometric features, particularly on insulating covers and cable sheathing, in accordance with standards.

A team of over 30 engineers, technicians and skilled workers assists our customers as a partner when realising their challenges.

LUMIMAX® LED lighting

Technology

High-performance lighting products with integrated controller technology for continuous, switch or flashing operation guarantee the utmost functionality and enable the stable, extraneous light-independent illumination of your test objects – even for extremely fast processes.

The integration of high-performance LEDs from renowned manufacturers combined with a very wide range of optical systems results in irradiances in new performance classes.

Functional accessories and sophisticated connection concepts reduce the time needed to integrate the LED lights into your image processing application.

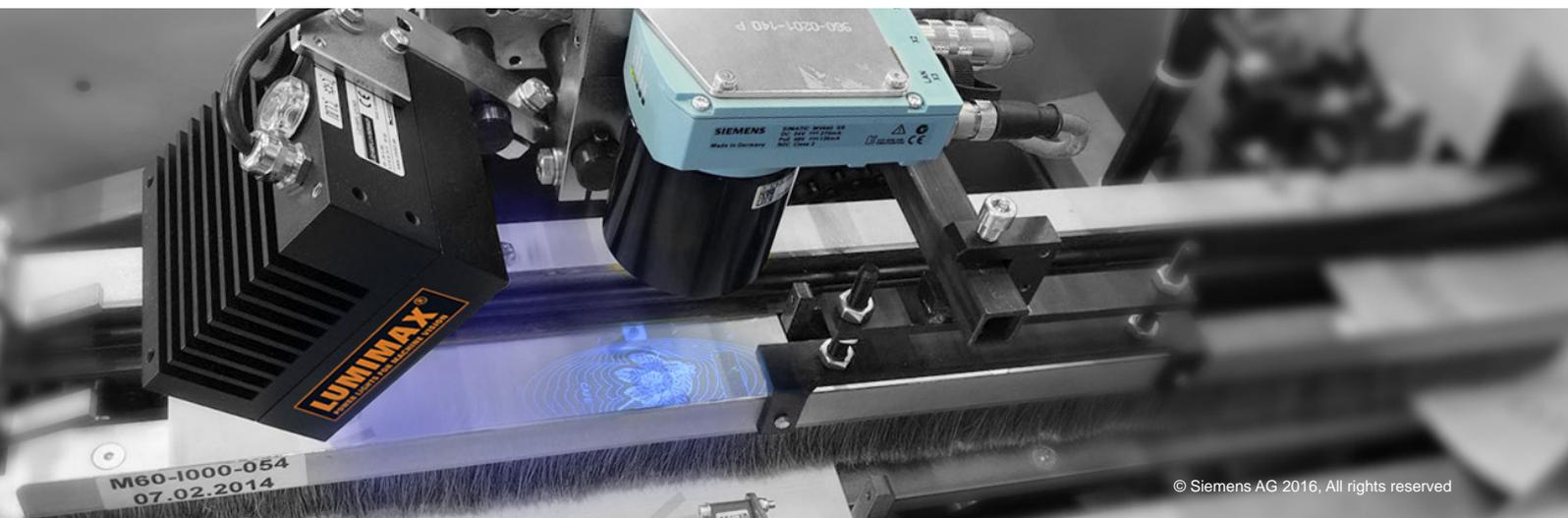
Quality

Made in Germany - we are committed to the highest level of quality and functionality, guarantee you excellent service, and work with regional partners. All of the development and manufacturing takes place in the head office in Suhl. This means our customers benefit from short processing and delivery times.

To ensure the high standard of all processes, the iiM AG quality management system is annually audited by DEKRA Certification GmbH in accordance with standard ISO 9001:2008.

Experience

We have extensive experience in industrial image processing and can apply this knowledge excellently when designing and realising our products and when providing consulting. We see our customers as partners. We thus rely on continuous and close cooperation.



Service & consulting

Selecting the right lighting is not only an essential part of stable, reproducible quality control and process control – it is also the key to resolving image processing tasks. What's more, it saves time and money during the planning, start-up and maintenance of image processing solutions in an industrial environment. This is why we guarantee you an extensive range of services in addition to exceptional product quality.

Our team, consisting of technicians and engineers with many years of experience in the field of machine vision, is available to you at any time for the following services:

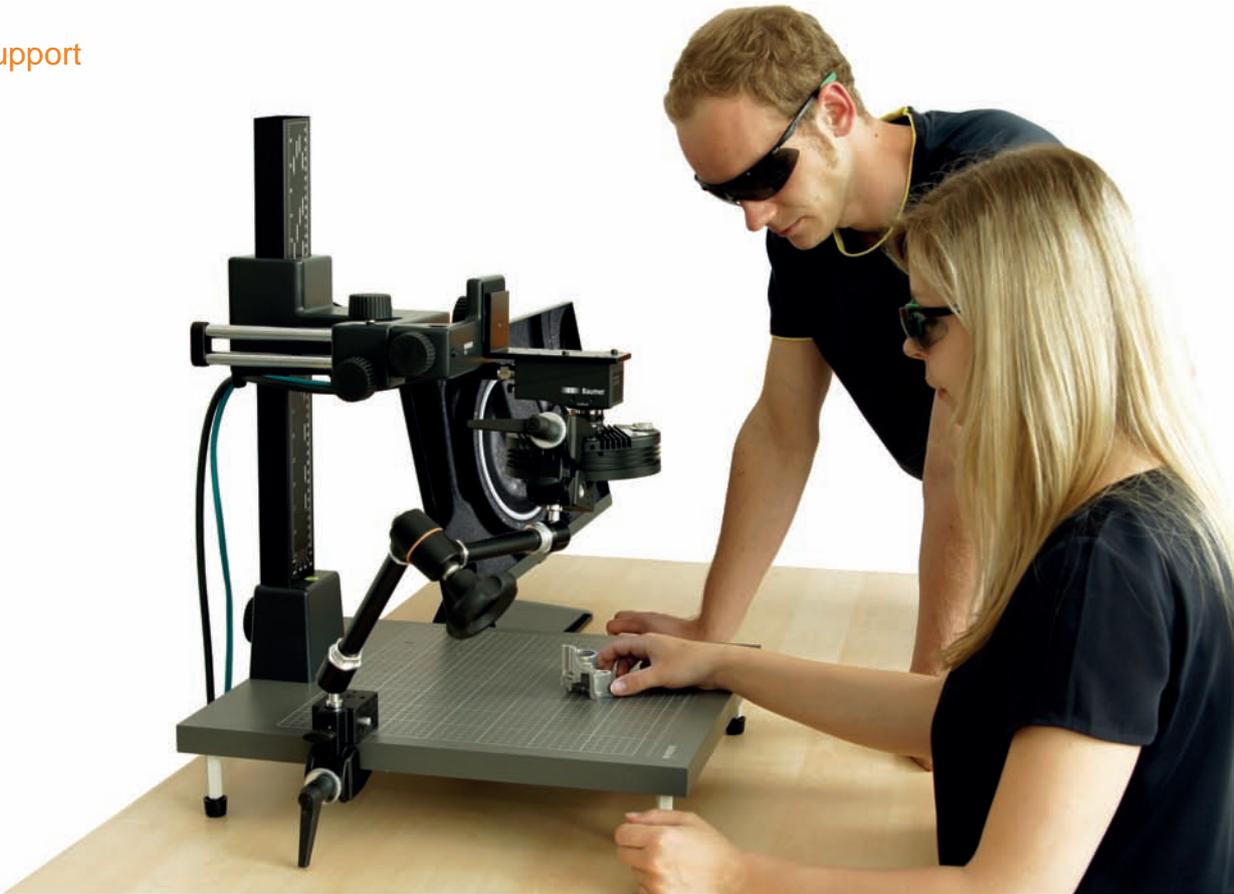
Feasibility studies

Customer-specific developments & adaptation of products

Loaned equipment and laboratory equipment

Consulting and support

Training



Contact

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