FOR IMMEDIATE RELEASE

CCS Releases LDF-NB Series Laser Light Source for Inspecting Presence/Absence and Irregularities in Coating Application

Observation by generating interference fringes*[1], ideal for replacing fluorescent and sodium lamps

Kyoto, Japan, June 13, 2023 – CCS Inc. will release its LDF-NB Series machine vision lighting for interference fringe inspection on June 13, 2023, as the third product in its CCS-LT brand (launched in 2019).

CCS-LT “Leading Technology” is a brand that accelerates the introduction of new technologies to the market, offering advanced solutions through a separate quality control system that encourages “thinking while doing.”

*[1] The phenomenon in which multiple overlapping lights strengthen or weaken each other is called interference, and the stripe pattern produced by the interference is called interference fringes.

Product Features

Coating processes performed on films, semiconductors, glass, etc., use light sources such as three-wavelength fluorescent lamps and sodium lamps to detect coating unevenness or absence. Light reflection from each film layer produces interference fringes that vision systems observe to detect coating irregularities. However, low energy efficiency and other factors have led manufacturers to discontinue these lamps.

In response to the need for alternative light sources, CCS has developed the LDF-NB Series laser diode lights, which have a spectral width suitable for generating interference fringes. The wavelength of laser light emitted from a laser diode is suitable for generating interference fringes, but if the light from the laser diode is used directly for inspection, the speckle noise*[2] generated could affect the inspection. The LDF-NB Series uses a unique optical design to reduce speckle noise and improve emitting surface uniformity (patent-pending).

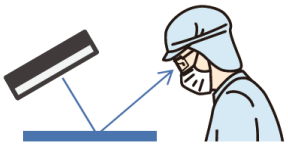
*[2] Speckle noise: When laser light is irradiated on a diffuse surface, the diffuse light interferes with each other, causing the image to flicker.

The lineup includes four wavelengths: 658 nm (red), 520 nm (green), 450 nm (blue), and RGB, which can mix 658 nm, 520 nm, and 450 nm, with a 200 mm x 20 mm emitting surface. Depending on the application, different sizes, surface-emitting types, coaxial types, etc., can also be made-to-order.

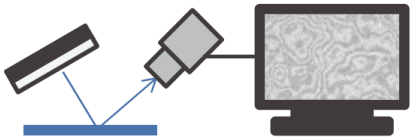
CCS will continue to establish itself as an indispensable solution vendor for its customers by offering various proposals to make "I can see it!” a reality through the manufacture and sale of

inspection lighting and power supplies as its core business, as well as inspection cameras and lenses, image judgment programs, and AI-based inspection.

Use Case



Visual inspection

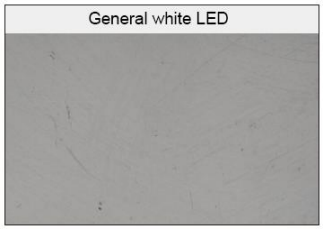


Camera inspection

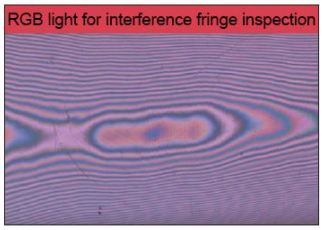
- Inspecting uneven coatings on films and glass
- Inspecting laminated glass for irregularities
- Inspecting wafer coatings for defects

Imaging Example

Glass Lamination Inspection



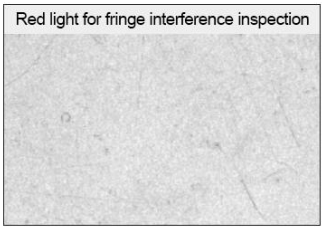
Interference fringes and their pattern anomaly are not visible with general white LED



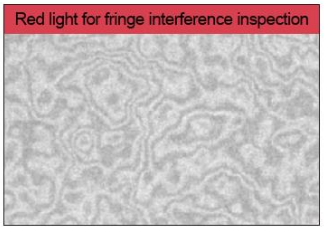
Uneven lamination becomes visible by using interference fringe inspection lighting

Film Coating Inspection

* Imaged with a monochrome camera



Interference fringes are not visible when there is no coating



Interference fringes are visible with coating

Lineup

LED Emission Color	Red	Green	Blue	RGB
Model Name	LDF-200X20RD-NB	LDF-200X20GR-NB	LDF-200X20BL-NB	LDF-200X20RGB-NB
Emitting Surface Size	200mm X 20mm			
Peak Wavelength (typ.)	658 nm	520 nm	450 nm	658nm/520nm/450nm
Power Consumption	3.75 W	9.60 W	7.97 W	12.0 W
Conformed Standards	Safety standards: EN60825-1, BS EN60825-1, GB7247.1, IEC60825-1, IEC62471 compliant			
Laser Class	Class 1			

From 1993, CCS advanced the machine vision industry by developing LED lighting for inspection that Created Customer Satisfaction for both manufacturers and their consumers, who demanded safe, high-quality goods. Today, CCS leads the machine vision world in innovation with thousands of products including lights, controllers, and accessories. CCS's global network of employees is dedicated to helping manufacturers capture the most important details in an inspection, so that their customers never receive anything less than their highest quality.

# # #

Press Contact:
Sayoko Takahashi – Marketing Communications
Tel. +81-75-415-8277
sy-takahashi@ccs-inc.co.jp

CCS Inc.
38 Konoecho, Demizu-Agaru, Muromachi-dori,
Kamigyo-ku, Kyoto, 602-8019 Japan
TEL: +81-75-415-8277
sales@ccs-inc.co.jp
www.ccs-grp.com