FOR IMMEDIATE RELEASE

CCS LDF-RLS Series Reference Light Source*1 for Cameras and Image Sensors

Adjustable color temperature*2 in one unit according to the application improves production efficiency

Kyoto, Japan, May 29, 20233 – CCS Inc. will release the LDF-RLS Series reference light source for camera/image sensor calibration (color calibration) on May 30, 2023.

A reference light source is essential for adjusting brightness and color to maintain stable quality in the production of digital camera modules for smartphones and in-vehicle cameras.

Calibration requires multiple color temperatures, such as 5,100 K for daylight, 6,500 K for cloudy skies and midday sunlight, and 3,100 K for evening and incandescent bulbs. CCS has developed a new light source with adjustable color temperature in one unit, the LDF-RLS Series.

There are two types available: a 4-color temperature switching type that can switch between four different color temperatures, and a 2-color mixed tuning type that adjusts the color temperature to any point between 2,800 K and 7,600 K. With these products, a single light source can be used for multiple applications instead of changing the light source for each, improving production efficiency.

*1 A reference light source is used in the production process of digital camera modules when calibrating the gain function to adjust brightness during shooting, the white balance function to adjust color, and the shading correction function to correct for the reduction in peripheral light intensity caused by the lens.

*2 Color temperature (K = Kelvin) is a unit that expresses the color of light from a light source, generally a white light source, with a higher value indicating a more bluish-white light color and a lower value indicating a more reddish light color.

Lineup

4-Color Temperature Switching Type

Equipped with LEDs of 4 different color temperatures (3,100 K, 4,000 K, 5,100 K, 6,500 K), the color temperature can be changed by using our power supply with four or more channels.

2-Color Mixed Tuning Type

By adjusting the two types of LEDs (2,800 K and 7,600 K), color temperatures can be created according to the customer's environment.

Use one of our power supplies with two or more channels to change the dimming ratio and produce different color temperatures.

Unique optical design achieves over 90% uniformity

In order to adjust all pixels of a camera module under the same conditions, high uniformity is necessary.

The LDF-RLS achieves uniformity of 90% (typ. 95%) or higher across the entire emitting surface for all color temperature settings, enabling highly accurate calibration.

PWM intensity control to maintain a consistent color temperature

This product is designed to be used in combination with a PWM (Pulse Width Modulation) control power supply to reduce changes in color temperature caused by dimming.

The variable current control used in typical reference light sources is prone to changing the intensity of the LEDs and consequently the color temperature. The PWM control of the LDF-RLS reduces these variations for easier maintenance even when brightness decreases due to long-term use.

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.

Product and use case image

Camera module inspection image

Common Specifications

	4-Color Switchable Type	**2-Color Mixing Type**
Model Name	LDF-TP31X31W31W65RLS	LDFTP31X31W31W65RLS2
Emitting Surface Size	31 mm X 31 mm	
Correlated Color Temperature (typ.)	3,100 K±100 K, 4,000 K±120 K, 5,100 K±150 K, 6,500 K±210 K	Low: 2,800 K, High: 7,600 K Adjustable intensity can produce any color temperature between the low and high
Cooling Method	Natural air-cooling	

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.

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