Spectrometer Case Study (Lumimedia lab. Inc.)

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CEO + Lighting Designer
Lumimedia lab Inc.

It was sensational at the time that Sekonic known for “Exposure Meter” released a reasonable spectrometer.

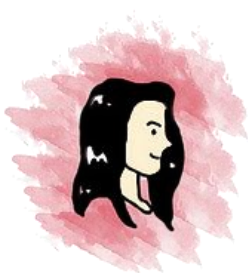
Lumimedia lab Inc. produces a new era of lighting design that incorporates video, digital, and web technologies while focusing on architectural lighting design.

We launched ”Lumimedia lab Inc.” in 2020 after the predecessor of IWAI LUMIMEDIA DESIGN. It is a combination of “Lumi (=light)” and “media (=convey)”.
Lumimedia lab is a company that does architectural design and landscape-related lighting design, and we are all participating in the project along with three young members born in the Heisei era.
We place great importance on dialogue with our clients and thoroughly listen to their desired image. Based on this, we try to make proposals that utilize our experience and imagination.
Lumimedia lab handles lighting design and subsequent construction supervision, so collaboration with not only architects but also construction companies is important. We also value the bonds we have with the people who actually do the work.
We have won the Japan Illumination Award, the Good Lighting Award and the Lighting Design Award by IEIJ (The Illuminating Engineering Institute of Japan), and the International Lighting Design Awards by IALD. Below are some of the award-winning projects to date.

2021 Illumination Award of Merit by IESNA(Illumination Engineering Society of North America) – Yoshiro and Yoshio Taniguchi, Museum of Architecture, Kanazawa
IEIJ Lighting Design Award of Excellence - Revamping Light of World-famous Three Art Museums with LED Responds to the Sustainable Society
2020 IEIJ Lighting Design Award of Merit –Yoshiro and Yoshio Taniguchi, Museum of Architecture, Kanazawa
IEIJ Lighting Design Award of Merit - SHONAI HOTEL SUIDEN TERRASSE
2016 IALD International Lighting Design Award of Merit –Kyoto National MuseumHeisei Chishinkan Wing

IWAI Tatsuya
CEO+Lighting Designer

ISHII Takanori
Director+Lighting Designer



SATO Momoe
Lighting Designer

TABE Musashi
Lighting Designer

Projects that Lumimedia lab Inc. has been involved in so far.

- **SIMOSE (Shimose Art Museum, SIMOSE Art Garden Villa, SIMOSE French Restaurant)**
  Architectural Design:Shigeru Ban Architects

Image provided:YAMAGIWA Corporation

  Based on the concept of “Admire art, inside art.”, SHIMOSE has a main building where the entrance, special exhibition room, and administration building are all connected with a mirror wall that reflects the beautiful scenery of the Seto Inland Sea, and 8-color exhibition rooms floating in the water basin in front of the main building. This is an art museum centered around a color exhibition room.
  In addition, on the south side of museum, there is a restaurant where you can enjoy a meal while enjoying the view, as well as five recreated villas of famous residences with its own unique light, and on the north side, a garden themed after Emile Gallé and five villas with terraces.
  At night, the individual buildings and exterior structures are bathed in light and reflected in the water and mirrors, making it a fantastic facility that becomes a piece of art.

- **Musée Ando à Karuizawa**
  Architectural Design:d/dt Arch.

Image provided :Lumimedia lab Inc.

  With the concept of a “museum that feels like home,” the lighting plan was designed to allow visitors to appreciate the artwork in a relaxed state, enveloped in the soft indirect light reminiscent of a domestic setting, while also ensuring the functional requirements of a museum were met.
  The basic illumination level was achieved primarily through indirect lighting, deliberately minimizing the use of conventional museum-style spotlights.
  Where spotlighting was necessary for exhibition effects, discreet lighting fixtures were carefully selected and thoughtfully positioned to avoid visual distraction.

- **Yoshiro and Yoshio Taniguchi Museum of Architecture, Kanazawa**
  Architectural Design:Taniguchi and Associates

Image provided:YAMAGIWA

  This museum, dedicated to architecture and urbanism, was built on the former site of the home of the renowned Kanazawa-based father-son architect duo. Through exhibitions, lectures, and architectural tours, the museum aims to serve as a hub for sharing architectural culture from Kanazawa with the world.

The permanent exhibition room faithfully reproduces the hall and tearoom of the Japanese-style annex “Yushintei” of The State Guest House, Akasaka Palace. Original lighting fixtures were reproduced using LEDs, and additional elements not found in the original—such as illuminated planting viewed across a water basin and bamboo shadows cast on the shoji screens of the standing-style tearoom—were incorporated for added effect.

The special exhibition gallery is a versatile white box space designed to accommodate a variety of exhibitions. It employs multifunctional spotlights with interchangeable attachments for adaptable lighting, and features a streamlined system with lighting tracks and base lighting integrated into a compact 28mm width.

The exterior lighting design emphasizes light spilling out from within the building, in consideration of the surrounding environment.

These three elements—permanent exhibition, special exhibitions, and exterior lighting—together embody the lighting design concept: “Light that connects the past, present, and future of architecture.”

Why the Sekonic Spectrometer C-7000

I found the Sekonic C-7000 while searching online for an illuminance meter. When it comes to color illuminance meters, they generally fall into the high-end category, and previously, only expensive models priced between ¥500,000 and ¥700,000 were available—well beyond my reach. However, the C-7000 I found at that time was reasonably priced at ¥250,000 and had the exact functions I was looking for, so I decided to purchase it.

Before getting the C-7000, I was using a Minolta illuminance meter, which could only measure illuminance.

Simon Yotsuya and Kuniyoshi Kaneko
– at Shimose Art Museum

I use the C-7000 mainly to verify lighting fixtures. While manufacturers do list specifications in their catalogs, the actual appearance and the catalog values can differ, so I always measure and confirm for myself.

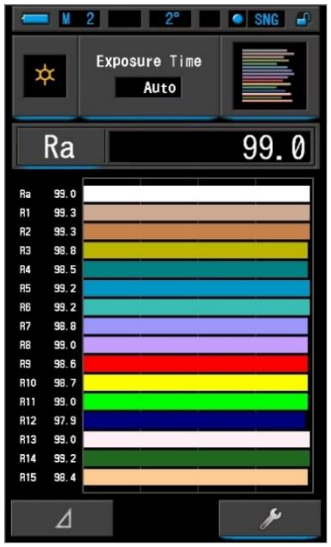
I also frequently use it during on-site inspections after lighting installation. On site, not only the installed lighting but also natural light and other factors can mix, resulting in lighting conditions different from what was expected on paper. I use the C-7000 to confirm these differences.

The measurement parameters I use most often are correlated color temperature (Tcp), Δuv, and color rendering index (CRI). Like fluorescent lamps, LEDs can sometimes have a Δuv shift. I also use the functions to display chromaticity coordinates and spectral distribution.

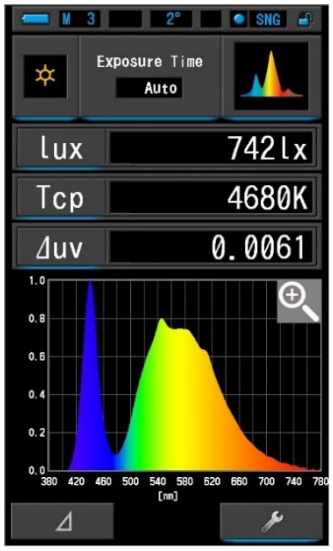
When LED lighting first became widespread, its poor color rendering was a major issue, but recently,

the color rendering quality of LEDs has improved. For residential lighting, a CRI (Ra) of 80 or higher is generally sufficient, but for exhibition lighting, a CRI of at least 90 is desirable. The C-7000 is extremely useful for quickly checking the quality of light like this.

It's portable, affordable, and allows for quick on-the-spot measurements—that's what makes it great.



C-7000 CRI mode



C-7000 Spectrum mode