

INABA Review

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2026



Inaba Electric Work Co., Ltd.
<https://www.inaba.com>

Contributing to Decarbonization Policies in the Roadway Sector

Long-Life Street Lighting Equipment

I-els



The Ministry of Land, Infrastructure, Transport and Tourism's Decarbonization Policy in the Road Sector

Extending the Life of Roadway Infrastructure

- From the perspective of preventive maintenance, we are extending the life of equipment and reducing the frequency of infrastructure renewal, thereby promoting decarbonization.

Low-carbon Road Construction and Management

- Promoting the use of low-carbon construction machinery and materials
- Introducing LEDs for street lighting

Street lighting accounts for about 70% of the electricity consumed in daily road management. The government intends to achieve 100% adoption of LED lighting in all roadway lighting, buildings, and facilities managed by national ministries and government agencies, including existing installations, by 2030.

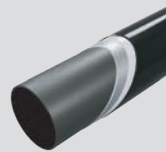
• High Efficiency



■ LW81 Series High-efficiency Street Lighting

Electricity costs and CO₂ emissions can be reduced simply by revising existing electrical characteristics and adopting appropriate light distribution control measures.

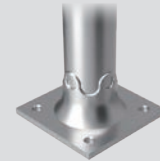
• Long Life



■ Ultra-Weather-Resistant Fluorine Hybrid Powder Coating

UV-resistant fluorine can be combined with other chemicals to form a strong coating. Reducing deterioration over time can decrease the frequency of equipment replacement.

• High Durability



■ Ribbed Base with a High Fatigue Rating

Stress is relieved by incorporating corrugations, stress-relief holes, and conical structures. These innovations have contributed to a Grade A fatigue rating.

INTERVIEW

What We Can Do for You

At the 73rd Electrical Construction Equipment and Materials Fair known as JECA FAIR 2025, our I-els Long-Life Street Lighting Equipment earned the Chairman's Prize in the product competition.

We spoke with Akira Tagami, Director of Lighting Division, and Ryotaro Mainaga, Chief Engineer of Technology Development Group, about the development process and challenges that were overcome during the development phase for this product.



Ryotaro Mainaga,
Chief Engineer

Akira Tagami,
Director

Development History

Taro Kido (Moderator): First, please tell us how you became involved in development of I-els Long-Life Street Lighting Equipment.

Ryotaro Mainaga: In addition to overseeing the entire group, I led the design, analysis, and testing of the base section. In particular, I contributed to improving the durability and strengthen the structure of the base, which is prone to deterioration due to repeated loads from vibration and the like.

Akira Tagami: As the project's overall supervisor, I was responsible for setting specification targets, managing the schedule, and tracking progress.

Kido: Please discuss the context behind development of this product.

Tagami: Currently, all manufacturers of street lighting luminaires offer products that exhibit roughly the same performance. Against this background, we worked to develop street lighting fixtures that are more efficient and offer a longer service life than these competing products.

Kido: What was the reason for strengthening the base of the pole?

Mainaga: This was done to support a long service life in harsh locations characterized by exposure to severe vibration, such as bridges and expressways. There has been a need to extend the service life of the base section, which is prone to deterioration due to repeated loads from vibration following installation.

When evaluating pole strength, we utilize an index known as the “fatigue rating.”

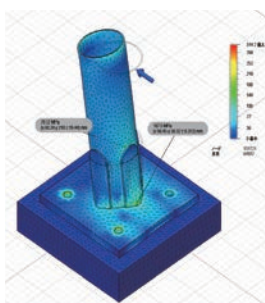
The most commonly used fatigue rating is Grade C, which can withstand 2 million repeated loads at a stress of 125 MPa. Initially, we aimed for the next higher grade, Grade B (2 million loads at 155 MPa), but as we continued our analysis and testing, we began to feel confident that we could achieve even higher performance.

As a result, we were able to achieve a Grade A rating (2 million loads at 190 MPa), creating a base with a long service life thanks to its unprecedented level of fatigue strength.

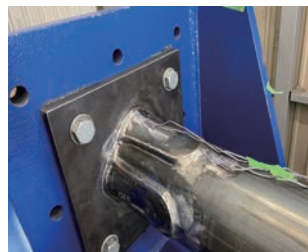
Overcoming Challenges

Kido: Notably, this lighting luminaire boasts some of the most energy-efficient performance in the street lighting industry, and its base achieves Grade A fatigue strength. It must have been quite a challenge to achieve these targets.

Mainaga: We conducted computer-based structural analyses, created test specimens based on the results, and verified them using fatigue testing equipment. We considered the results and undertook repeated improvements and experiments countless times. What we came to firmly believe through these experiments was that, in many cases, one won't know what will work until the experiments are actually undertaken.



Verification using simulation analysis



Verification using actual models

On the one hand, ideas we were confident in didn't produce the expected results, while on the other hand, methods we tried with some skepticism turned out to deliver better results than anticipated. I believe that these experiences greatly broadened the perspective of the entire team. Furthermore, in several instances, internal differences of opinion arose during the project. However, by enthusiastically incorporating useful ideas that emerged from constructive discussions to resolve the issue, we were ultimately able to achieve a clear result in terms of greatly improved performance. Looking back now, I believe that those discussions themselves were indispensable to achieving these outstanding results.

Tagami: Becoming the first to achieve something that other companies are reluctant to take on is a strength that only Inaba can demonstrate. We hope to continue as an entity that supports society by addressing such challenges head-on.

In this case, we developed the pole and lighting luminaire as a set, undertook a sweeping revision of the base structure, and even adopted a separate structure that facilitates maintenance of the lighting luminaire. These were initiatives that could be undertaken only by our company capable of manufacturing both the lighting luminaire and the pole.

While development took three years, we believe we have devised the exact product we wanted to introduce to the world. Going forward, we intend to continue offering products and services that contribute to society through the sum of our collective strengths.

Kido: What has been the reaction from those around you since the release of this product?

Tagami: It is clear that the relevant government ministries and agencies have given this product high praise for its contribution to reducing both electricity bills and CO₂ emissions.

Mainaga: We acknowledge that new expectations have arisen for even lighter and more compact lighting luminaires as additional features for this product line. We take these comments as representing clear opportunities that stake out our next challenge. We aim to add further value by incorporating additional improvements from a technical perspective.

Team-Based Development

Kido: Lastly, please tell us what you learned and what insights you gained from this development effort.

Mainaga: Through this project, I came to the powerful realization that taking action without getting bogged down in assumptions is paramount. We encountered many challenges that could not be solved with prior assumptions or other precedents alone. We came to realize that, in many cases, the critical issues become apparent only through actual experimentation.

Even failures and experiences that at first glance appear to have been detours can become valuable lessons that lead to future improvements and innovative ideas. I have once again come to understand the importance of remaining flexible and moving forward while repeating cycles of hypotheses and verification.

Tagami: Because many team members were involved in this project, a great variety of opinions and ideas were generated, so I feel that we were able to create an even better product than before because of this wide-ranging input.

Previously, the person in charge would have been the only one working on the project, and there was a strong sense that that one individual owned a particular project. However, we realized that having many team members involved expanded the scope of ideas generated, leading to a better outcome. Looking ahead, we would like to work together as a team and proceed with development with an emphasis on agility.



Moderator: Taro Kido, New Development Group

Electric Division Product Introduction

カコム盤

A Distribution Panel Suitable for Locations Requiring Inspection in Hard Weather

Our KACOM distribution panel is designed to enable safer and more effective inspections during periods of hard weather. The unique feature offered by this product — the creation of a sheltered inspection space — utilizes the arrangement of the upper and double-swing exterior doors to facilitate inspections, which is especially important during severe weather events.

- **It is possible to secure a sheltered inspection space simply by opening the exterior doors.**

The unique design provides a sheltered workspace at the front of the distribution panel simply by opening the exterior doors. This allows for equipment status to be verified without exposure to wind and rain, significantly improving safety and facilitating work during bad weather. It can also be used as a simple protected workspace, even in confined and outdoor installations.

- **The upper exterior door serves as a roof and features damped operation for easier opening and closing.**

The upper exterior door, which also functions as a roof, is equipped with a damper, ensuring it can be opened and closed smoothly with little effort. This prevents the door from opening suddenly, even in strong winds, for enhanced worker safety.

- **The entrance tarpaulin can be printed with any design of your choosing.**

The entrance tarpaulin can be printed in full color with a design of your preference, such as a company logo, warning notice, or product name. It is ideal for improving on-site visibility and for branding that aligns with the site environment and management boundaries.

Product Name: Freestanding Outdoor Distribution Panel

Exterior dimensions: 1400 mm (W) × 650 mm (D) × 2300 mm (H)

Upper exterior door (roof) dimensions: 1400 mm (W) × 50 mm (D) × 650 mm (H)

Tarpaulin

This durable three-layer fabric is made by laminating polyvinyl chloride resin onto both sides of a cloth material such as polyester. It is a high-performance material providing durability, weather resistance, waterproofing, and stain resistance while displaying high-quality colors.



Creates a sheltered inspection space that can be used even in the rain.

New Development Group
Product Introduction

We joined Tokyo's Perovskite Solar Cell Demonstration Project

The joint project with the Tokyo Metropolitan Government, Ricoh Co., Ltd., and Ricoh Japan Corporation

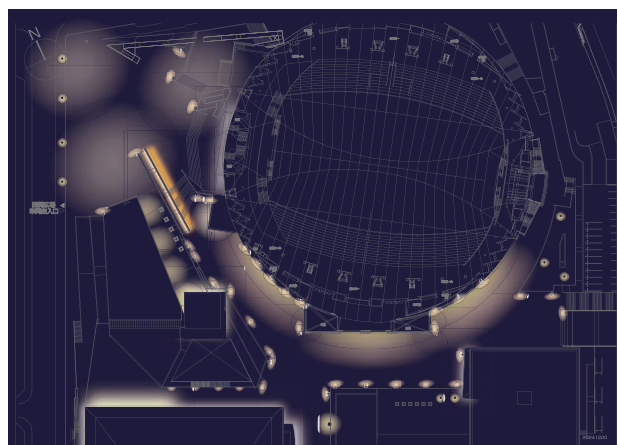
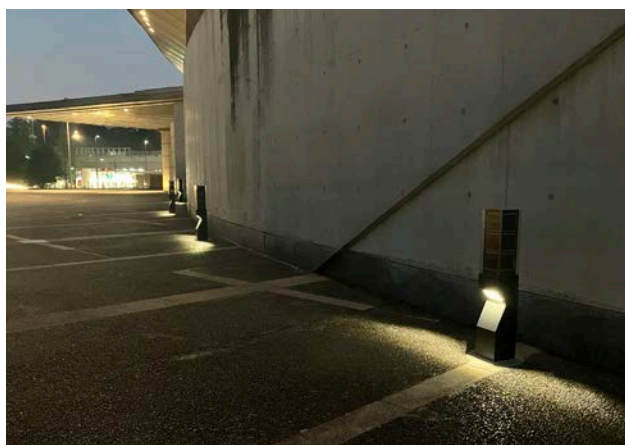
We were responsible for manufacturing the garden lights incorporating perovskite solar cells installed at the Tokyo Metropolitan Gymnasium as part of the Perovskite Solar Cell Demonstration Project. This was an initiative of Ricoh Co., Ltd. and Ricoh Japan Corporation in collaboration with the Tokyo Metropolitan Government.

As part of the Tokyo Metropolitan Government's "Air Solar" initiative to promote the adoption of renewable energy, this project promoted the adoption of lighting fitted with lightweight and highly efficient perovskite solar cells in public settings. Air Solar installations provide high power generation efficiency, even in low-light environments and vertical installations. They are expected to be widely adopted in locations where garden lighting has proven difficult to install in the past.

For this demonstration, a total of 35 garden lights were installed at the Tokyo Metropolitan Gymnasium. Their power generation performance, durability, and operational effectiveness were comprehensively verified. We remain committed to promoting the emergence of a society dedicated to sustainability through the development of products and technologies that support the public adoption of next-generation energy technologies.



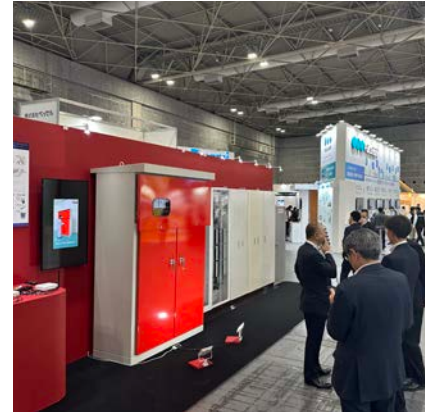
Tokyo Metropolitan Gymnasium
Location: Shibuya City, Tokyo
Completion: August 2025
Number of luminaires: 35



| Trade Show Exhibits



Period: May 28 to 30, 2025
Venue: Intex Osaka



- We exhibited at the JECA Fair 2025 trade show under the theme “Opening up New Potential with Electrical Installation Technology: Together with an Ever-Advancing World.”

From street lighting equipment to power distribution panels and next-generation energy products, we showcased the new value created through advances in electrical installation technology.

Products on Exhibit

- **I-els Street Lighting Equipment:** Innovative lighting equipment that extends the service life of street lighting infrastructure
- **L-square, a Novel Pole-Integrated Street Light:** A street light that combines a sleek, linear design with advanced functionality
- **L-round, a Conceptual Model of an Innovative Pole-Integrated Street Light:** A next-generation street light with a subdued design that blends seamlessly with the landscape.
- **N-solar, a Conceptual Model of Next-Generation Solar Lighting:** An environment-friendly lighting solution utilizing renewable energy
- **R503-ZCT Series Leakage Current Measurement Devices:** For accurate detection of hard-to-find “ghost” leakage currents in communications equipment
- **Moss Panel:** An eco-friendly power distribution panel offering easier maintenance
- **KACOM Panel** • **Choikaru Panel** • **Kan-kannon Door** • **Main Center Panel** • **Highly Corrosion-resistant Panel**



Period: October 30 to 31, 2025
Venue: Intex Osaka



- Introducing Advanced Technologies that Contribute to the Sustainable Development of Public Infrastructure

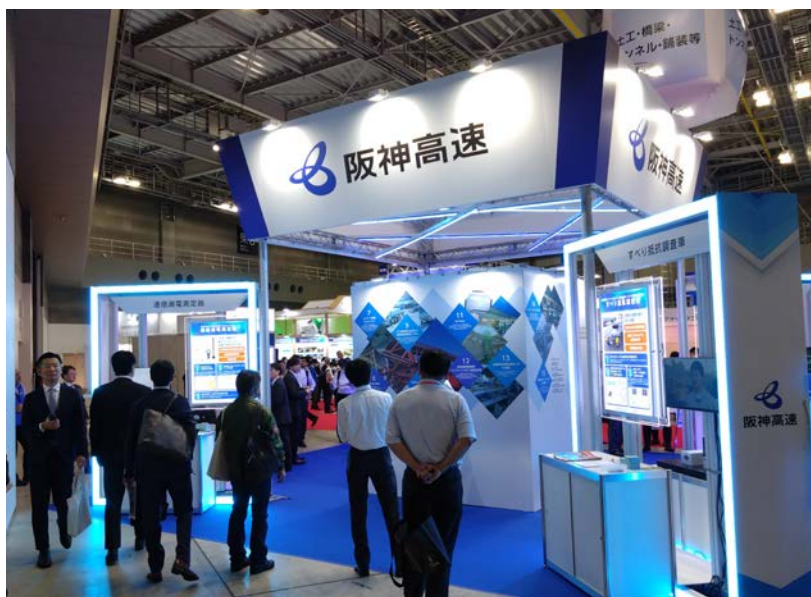
We exhibited at the Construction Technology Fair that attracted many visitors, including representatives of government agencies and construction companies. We displayed I-els Long-life Street Lighting Equipment, a Renewal Pole that allows the reuse of existing foundations, the R503-ZCT Series of Sigfox Leakage Current Measuring Devices, and our newly introduced Moss Panel.

Our “hands-on” product displays generated a high level of interest, providing a meaningful opportunity to gauge needs on-site while revealing the direction and scope of our technological developments. We will continue to contribute to the development of public infrastructure.



Period: October 16 to 17, 2025

Venue: Tokyo Big Sight



**設備漏電の常時監視で保全力を向上
通信漏電測定器**

“おぼけ漏電”を
漏れなくキャッチ!
設備の安全を守ります

- 24時間365日電流を監視
- 遠距離通信可能
- 電源不要

その1 通信技術の力で
漏電を常に可視化
高速道路上などの長距離でも、調査範囲を切り分けて設置できるため、その位置で漏電が発生しているの発着地点に特定することができます。

その2 遠隔地にあるクラウドサーバに
データを記録
収集したデータは定期的にSigfox通信クラウドに記録し、グラフ化して表示されるため、経路や特定の場所からでもリアルタイムで電流変動を確認することができます。

その3 電池内蔵型で1年間の傾向を測定可能
本体に内蔵している専用電池(CR17450E-R2)で約1年間使用できます。また、アンテナ付きで電波の届きにくいトンネルや山間部でも通信可能です。

阪神高速技術株式会社 INABA 株式会社 設備電機製作所

● Highway Techno Fair

The Highway Techno Fair is an exhibition that broadly introduces expressway projects and the cutting-edge technologies that support them. This event served to expand public understanding while providing a forum for technology development companies to engage in information-sharing and networking.

In collaboration with Hanshin Expressway Engineering Co., Ltd., we exhibited our Sigfox Leakage Current Measuring Devices to introduce technologies that contribute to a safer and more reliable expressway infrastructure.

Front Cover (Featured Project)



Germany Pavilion, Expo 2025 Osaka, Kansai

Under the direction of GL Events, we manufactured and delivered the power receiving and transforming equipment required by the Germany Pavilion at Expo 2025 Osaka, Kansai. We join in celebrating the success of Expo 2025 and are pleased to be able to highlight this project as one of our successful installations.

Company Outline

Company name Inaba Electric Work Co., Ltd.
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 3-1-1 Itachibori, Nishi-ku, Osaka 550-0012 Japan
 TEL +81 6-6532-2301
 FAX +81 6-6532-2307
Establishment May 10, 1962
Employees 263 (as of September 30, 2025)
Capital stock 130 million yen
Sales offices Osaka, Tokyo, Sapporo, Yamagata
Plants Habikino Plant, Enmyo Plant, Nara Plant,
 Gunma Plant



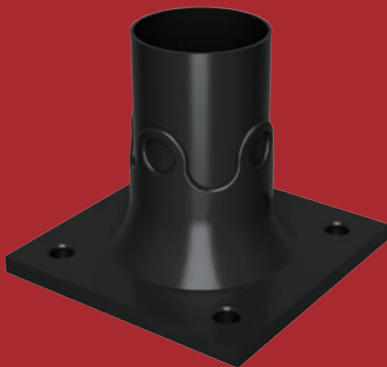
■ LW81 Series High-Efficiency Street Lights

This innovative product reduces electricity costs and CO₂ emissions by revising electrical characteristics and providing appropriate control of light distribution.

I-els

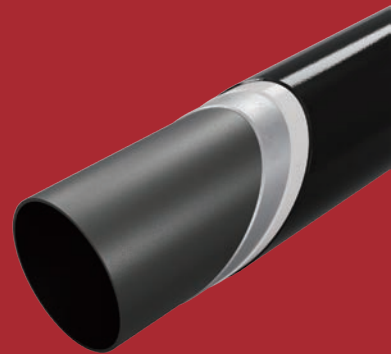
Long-Life Street Lighting Equipment

Street lighting equipment designed to extend the service life of street lighting infrastructure by integrating the three key features



■ Ribbed Base with a High Fatigue Rating

This product is the first in the industry to achieve a Grade A fatigue rating. It can be safely installed on bridges, elevated structures, and other locations subject to high vibration stress.



■ Ultra-Weather-Resistant Fluorine Hybrid Powder Coating

UV-resistant fluorine combines with chemicals to form a strong coating. This reduces deterioration over time, reducing the frequency of the equipment replacement cycle.