

Preserving the beautiful starlit skies in Bisei Town by light pollution control streetlights.

Okayama, Japan



Japan's first IDA certified light pollution control LED lighting solution

In January 2020, Panasonic became the first Japanese manufacturer*1 to develop a light pollution prevention LED street light and crime prevention light that was certified as being "Dark Sky Friendly" by the International Dark Sky Association. The IDA is an NPO organization based in the United States that plays a leading role in global initiatives to minimize light pollution and has over 60 branch offices in 18 countries around the world. The development of light pollution prevention LED lighting fixtures started with a request for cooperation from Ibara City, Okayama Prefecture. As the Bisei Tourism Association in Ibara prepared to obtain the "International Dark Sky Places certification" *2, which was established by the IDA in 2001, and recognizes outstanding efforts to protect and preserve the dark and beautiful night sky. To meet the minimized light pollution requirements, specially developed outdoor lighting fixtures were needed.



*1: As an IDA certified fixture of a domestic manufacturer (As of February 20, 2020. According to a survey conducted by the International Dark-Sky Association, Tokyo Chapter)

*2: There are six categories in the "International Dark Sky Places® certification", and the Bisei Tourism Association aimed to be certified as a "Dark Sky Community" (certified in November 2021).

Bisei Town, an ideal place for astronomical observations

Okayama is often referred to as “the land of sunshine” because of its high rate of good weather, it also is located on a gentle plateau where air currents in places like Bisei and Ibara are often stable. Also, there are not many artificial lights that brighten the night sky, which is why it is known as an ideal place for astronomical observations among astronomy hobbyist.

In 1987, the Environment Agency (at the time) implemented the “Nationwide Starwatching Contest” at the municipal level. Based on those observation results, Bisei was selected as a “Star Town”.

Japan’s first light pollution prevention ordinance enacted

In 1989, Bisei enacted Japan’s first light pollution prevention ordinance. The ordinance recommended that all outdoor lights be turned off after 10:00 PM, to prevent light from escaping above the horizontal plane. In 1993, the Bisei Astronomical Observatory was opened. Astronomy-related events began to be implemented, increasing people’s interest.

Around that time, many white fluorescent lights were installed around the town as crime prevention lights. Later, with the spread of LEDs, they were sequentially replaced with white LED security lights from 2011, but light was leaked upwards from the approximately 400 white fluorescent lights and white LED security lights, resulting in a state where the standards of the ordinance were not met.

Preserving the starry skies that are the pride of the town while protecting its safety at night

Information regarding the IDA’s “International Dark Sky Places® certification program” was brought from the Bisei Astronomical Observatory to Kenji Fujioka of the Ibara Regional Revitalization Division (at the time) in 2016. Mr. Fujioka and others, who believed that “Bisei was suitable as an “International Dark Sky Place®”, visited the IDA Tokyo Chapter that year. Since then, they have continued to promote awareness activities by exchanging opinions with President Nobuaki Ochi and through environmental protection events.

Meanwhile, the Bisei Tourism Association also began to have a sense of crisis about the possibility of losing the “beautiful starlit sky” environment that their predecessors established, and using this as an opportunity, the Bisei Tourism Association decided to aim to obtain the “International Dark Sky Place®” certification in March 2019 with the full cooperation of Ibara. In addition to using the certification as an opportunity to aim to preserve the beautiful starlit skies and natural environment, they also wanted to foster a sense of unity with the local residents by improving the town’s brand value. Furthermore, a ripple effect on the local economy through tourism could also be expected. This marked the start of these challenges.



Okayama Prefecture Ibara Bisei Branch,
Bisei Promotion Division Assistant Director
Takuo Date
Photo taken in February 2020



Ibara, Okayama Prefecture
Future Planning Department,
Settlement Tourism Division
Assistant Director and Chief of Tourism
Kenji Fujioka
Photo taken in February 2020

Clearing the strict standards to become the first certified Japanese manufacturer

In March 2019, the Ibara Appeal Dispatch Division (at the time) visited Panasonic to discuss the initiatives of the Bisei Tourism Association. Panasonic agreed with this cause, and decided to offer their cooperation.

In the criteria for the outdoor lighting in “International Dark Sky Places®”, it is required to prevent all upward light leakage that obscures the starlit sky and have a color temperature of 3000K or less, which means a light source color with minimal blue light.

First, Panasonic provided model lighting fixtures with warm color LEDs to replace the existing white security lights in Bisei. We installed a portion of them locally and conducted tests, but Mr. Ochi from the IDA pointed out that there was light leakage facing upwards. Therefore, the Bisei Tourism Association once again visited Panasonic to request the development of lighting fixtures that meet the standards.

In response to this, Panasonic ensured the safety and security of the local residents while maintaining the necessary brightness for crime prevention, and began developing lighting fixtures that met the IDA’s standards. A custom-made product featuring specifications with an upper luminous flux rate of 0% and a color temperature of 3000K or less was developed, and in January 2020, two models were certified.





The streets were previously too bright in Bisei.



The lights are designed for the safety of the town and for easy viewing of the starry sky.

Looking towards the “International Dark Sky Places” certification

The Bisei Tourism Association launched a crowdfunding campaign from January 14 to February 28, 2020 in order to voluntarily raise a part of the funds to replace the existing security lights in the town with IDA-certified light pollution prevention LED street lights. Support funds that far exceeded the original target were donated, and the crowdfunding campaign successfully reached its goal. Later, tests were conducted in the town with the IDA-certified light pollution prevention LED street lights developed by Panasonic in the summer of 2020, and in September they purchased 440 units.

Later, approximately 440 security lights in Bisei were replaced with IDA-certified light pollution prevention-type security lights, and seven street lights along the prefectural road were replaced with IDA-certified light pollution prevention-type street lights. Following these efforts, Bisei was certified as Asia’s first Dark Sky Community on November 1, 2021. The development of regional vitalization using the beautiful starry sky as a tourism resource is expected in the future.



Banners placed in Bisei to create awareness of the preservation efforts of the starlit skies



Products for Solutions



IDA certified light pollution control LED lighting



IDA certified light pollution prevention street lighting