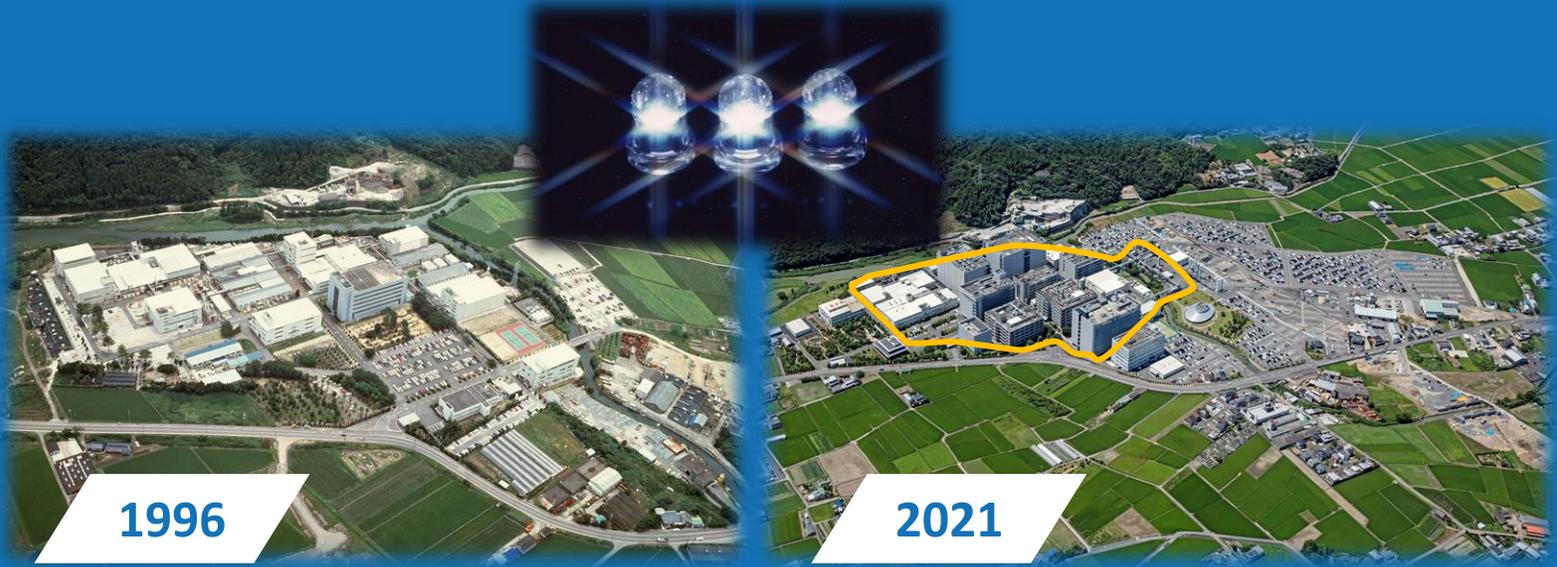




# 25<sup>th</sup> Anniversary of the White LED

## Nichia's innovation that changed the world!



*Yellow Box shows scale in 1996*

## Nichia's Legendary History

Established in 1956 to produce chemicals for the pharmaceutical industry, Nichia quickly evolved to become one of the world's largest phosphor manufacturers, a leadership position Nichia held into the 2000's. After significant investment into a technology believed impossible, in 1993 Nichia commercialized the very first high luminous blue LEDs. With these high luminous blue LEDs and its then 30+ years of phosphor expertise and history, Nichia created a revolutionary technology. In September of 1996, Nichia combined Yttrium Aluminum Garnet (YAG) phosphor with its innovative blue LEDs to officially produce the first ever white LEDs. The world suddenly had a new trajectory for applications utilizing white light, one with many significant benefits.

## White LED Adoption

White LEDs present significant benefits vs. traditional technologies. Perhaps, the most important contribution to society is white LED's enablement to achieve a quicker path to carbon neutrality with its reduced energy usage. Several additional benefits have been delivered, including a small form factor which enables devices to utilize light in a manner that never previously existed. Complementing the energy savings benefit, white LEDs also offer very long lifetime and an environmentally friendly light source without any hazardous materials, such as mercury. Many applications have benefited from white LEDs and could not have been created without Nichia's invention, including smartphones, tablets, thin LCD TVs and Notebook PCs, slim stylish automotive LED headlights, LED light bulbs, lighting systems with dimming and color tuning, bright and comfortable outdoor lighting on highways, and many more. People could not see and enjoy these products if Nichia had not invented the white LED. A historic invention generated through a miracle marriage of Nichia's competence in blue LEDs and phosphors has truly changed the world.