
IWC SCHAFFHAUSEN UNVEILS ITS CERALUME® TECHNOLOGY AND MANUFACTURES THE FIRST FULLY LUMINOUS CERAMIC WATCH

Schaffhausen, 27th May 2024: IWC Schaffhausen has developed a proprietary luminous ceramic technology called Ceralume®. Based on a highly engineered and patent-pending process, developed by IWC's engineering division XPL, the technology enables IWC to produce fully luminous ceramic watch cases for the first time. This is achieved by homogeneously mixing ceramic powders with high-grade Super-LumiNova® pigments, a luminous material that acts like a battery for storing light energy. In dark chamber tests, a fully luminous concept watch manufactured using the Ceralume® technology has emitted a bright blueish light for more than 24 hours.

Over almost four decades, IWC Schaffhausen has acquired comprehensive expertise in engineering ceramic watches. Ceramic is light, extremely hard and highly resistant to scratches. Back in 1986, the Swiss luxury watch manufacturer launched the world's first wristwatch with a black zirconium oxide ceramic case. Since then, major IWC ceramic innovations have included watch cases made of brown silicon nitride ceramic and black boron carbide ceramic, one of the hardest substances known. After introducing a range of TOP GUN models in striking coloured ceramic, IWC is now pushing the boundaries with Ceralume®. This luminescent ceramic is made using a highly engineered and patent-pending manufacturing process developed by IWC Schaffhausen.

"With the first fully luminous ceramic case rings, we underscore our role as a pioneer and innovator in ceramic watches. The development of Ceralume® took several years. The main challenges we faced were producing watch cases with maximum homogeneity and meeting our exacting quality standards. To achieve these goals, we engineered a ground-breaking new manufacturing process – tailored to the unique combination of ceramic powders and Super-LumiNova® pigments," explains Dr. Lorenz Brunner, Department Manager Research & Innovation at IWC Schaffhausen.

The fascinating glow effect is achieved by adding high-grade Super-LumiNova® pigments to the ceramic raw materials. Engineered by Swiss technology company

RC Tritec, Super-LumiNova® is a high-tech ceramic compound that behaves like a light storage battery. The material absorbs light energy from sunlight or artificial light, stores it temporarily and then emits the absorbed energy as visible light. This cycle can be repeated an infinite number of times without ever causing the material to age or diminishing its light storage capacity. In dark chamber tests, Ceralume® watch cases have emitted a bright blueish light for more than 24 hours.

CERALUME® IS MADE IN A HIGHLY ENGINEERED PROCESS

Conventional white ceramic is made by mixing zirconium oxide with other metallic oxides. These powders are shaped into a so-called green body, machined close to the final case geometry and then sintered at high temperatures in a kiln. For the white ceramic to glow in the dark, Super-LumiNova® pigments are added to the mix of raw materials. One of the main challenges in the development of Ceralume® was achieving a perfectly homogeneous mix of raw materials despite their different particle sizes and avoiding particle accumulations. To achieve this, IWC's engineers reverted to a dedicated ball milling process, which had to be customised to the raw materials used. In addition, the parameters of the sintering process and the grinding of the sintered ceramic body also needed to be specifically adapted to the luminous ceramic.

**THE FIRST FULLY LUMINOUS
CERAMIC CONCEPT WATCH**

Using the new Ceralume® technology, IWC's experimental division XPL has manufactured a fully luminous ceramic concept watch for the first time. In addition to its Ceralume® case, the concept watch in a Pilot's Watch Chronograph 41 design features a white luminescent dial and a white luminescent rubber strap. The dial and the strap have also been enriched with Super-LumiNova® pigments. The dial's brass base is sprayed with a Super-LumiNova® solution before the printing is added on top of the luminescent layer. Manufactured in an injection moulding process, the white rubber strap is likewise enriched with Super-LumiNova® pigments.

Developed by IWC Schaffhausen, the patent-pending Ceralume® technology will form the foundation of future developments and releases.

IWC SCHAFFHAUSEN

IWC Schaffhausen is a leading Swiss luxury watch manufacturer based in Schaffhausen in the north-eastern part of Switzerland. With collections like the Portugieser and the Pilot's Watches, the brand covers the whole spectrum from elegant to sports watches. Founded in 1868 by the American watchmaker and engineer Florentine Ariosto Jones, IWC is known for its unique engineering approach to watchmaking, combining the best of human craftsmanship and creativity with cutting-edge technology and processes.

Over its more than 150-year history, IWC has earned a reputation for creating professional instrument watches and functional complications, especially chronographs and calendars, which are ingenious, robust, and easy for customers to use. A pioneer in the use of titanium and ceramics, IWC today specialises in highly engineered watch cases manufactured from advanced materials, such as coloured ceramics, Ceratanium®, and titanium aluminide.

A leader in sustainable luxury watchmaking, IWC sources materials responsibly and takes action to minimise its impact on the environment. Along the pillars of transparency, circularity, and responsibility, the brand crafts timepieces built to last for generations and continuously improves every element of how it manufactures, distributes, and services its products in the most responsible way. IWC also partners with organisations that work globally to support children and young people.

DOWNLOADS

Images of the Geralume® concept watch can be downloaded free of charge from press.iwc.com

FURTHER INFORMATION

IWC Schaffhausen

Public Relations department

Email press-iwc@iwc.com

Website press.iwc.com

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