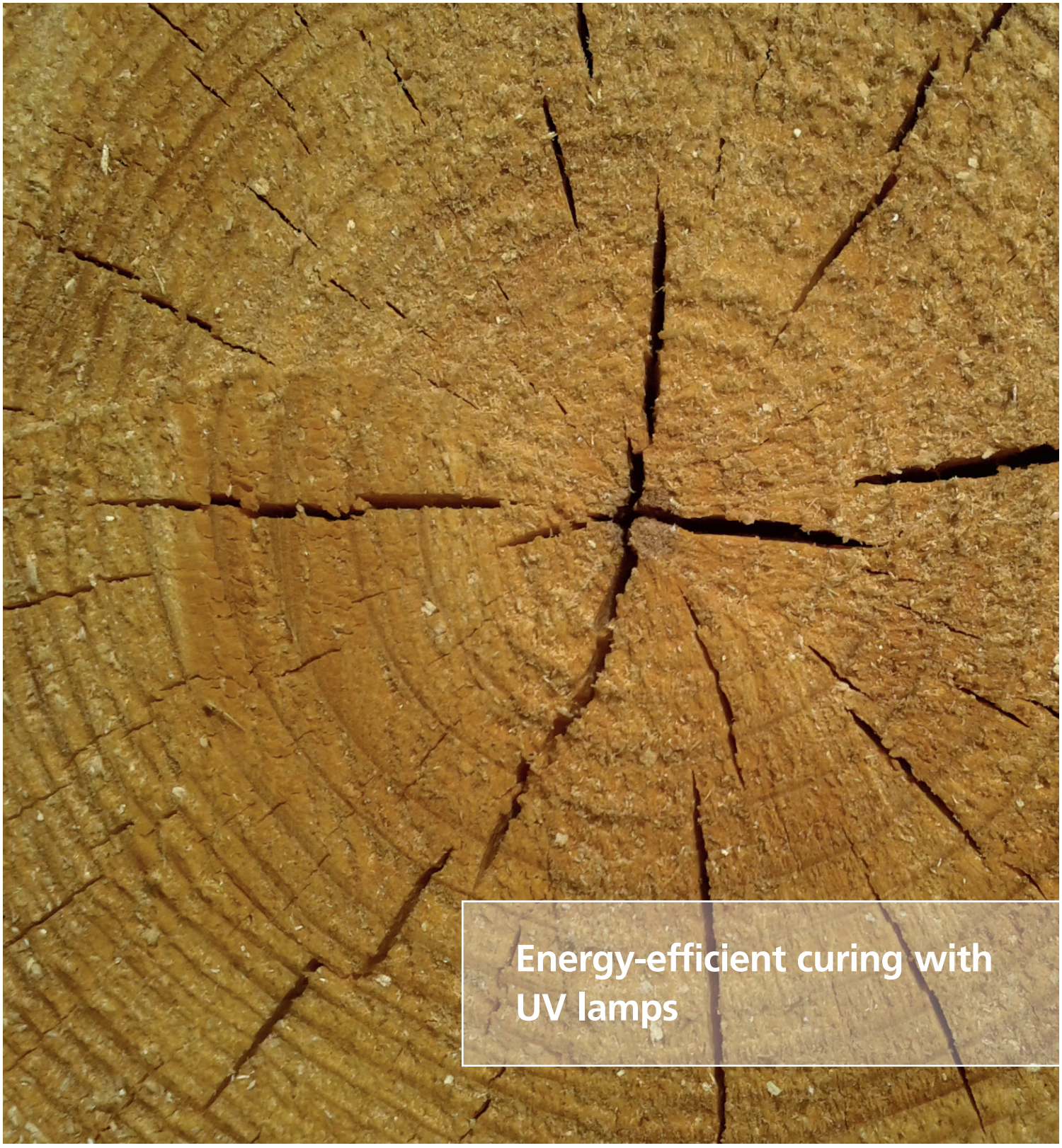
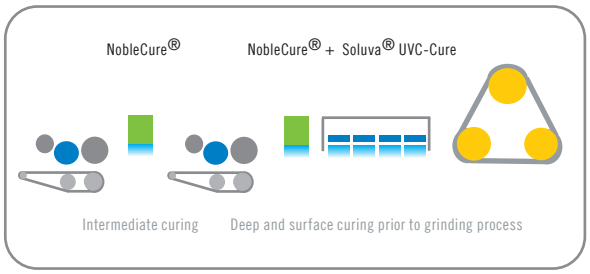


Energy-efficient curing with UV lamps

NobleLight

excelitas®

Optimal curing results
with combined UV technologies



Combined with special UVC lamps, UV LEDs for pinning for optimal intermediate curing can be used in a plant for efficient curing prior to grinding.

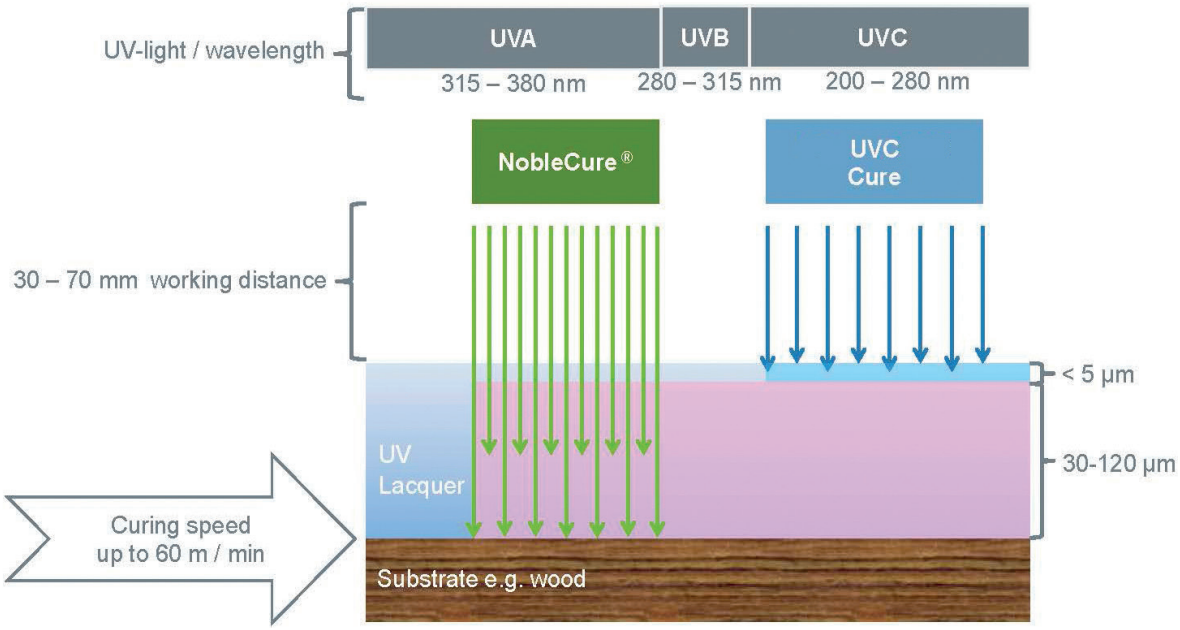
To keep high-quality wooden furniture or precious parquet flooring appealing for a long time, their surfaces need to be elaborately prepared and sealed. In long processes that are often repeated, fillers, varnishes or paints are applied to the surface of the wood and cured layer by layer. Much energy is used in this curing process to achieve the best possible results. In times of rising energy prices, it is worthwhile to invest in current-saving equipment.

Excelitas closely cooperates with system and varnish manufacturers to develop customer-optimised solutions for these industrial processes. The innovative Noblelight UV technologies make it possible to optimise curing processes in terms of cost of materials and energy.
Photoinitiators are activated by intensive UV light during a UV curing process – during polymerisation. Chemical compounds are initially broken up and then cross-link to form different compounds. Various light sources doped with gallium or mercury are used even today. Their wavelengths determine the location of curing: at the surface or deep inside.

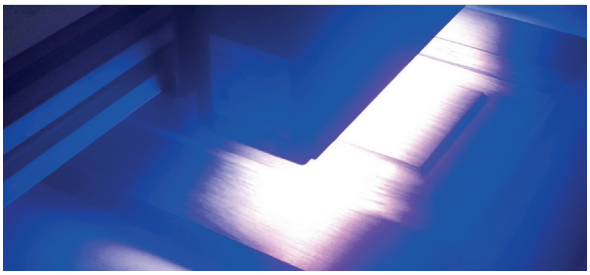
The optimal curing process is influenced by various factors:
- Emission spectrum and intensity of the UV light source
- Properties and thickness of the material to be cured
- Process speed
- Working distance between material and UV light source
- Carrier material and ambient temperature
- Chemical composition of the varnish systems

Combined methods using different UV technologies

Excelitas offers various light sources to make your curing process as efficient as possible.
The diagram shows the curing properties of different UV light sources.



Energy-efficient curing
with tailor-made UV light sources



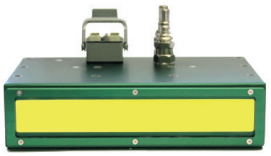
UV light sources precisely adjusted to the process improve reliability, reduce stress on the material and save costs and especially energy.

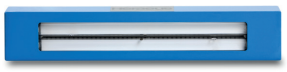
Your advantages at a glance:

- Easy handling due to modular design
- Long machine operation times due to long maintenance intervals
- Flexible as regards materials as the UV light sources also achieve the required curing at a working distance of between 30 and 70 mm
- Process optimisation by increasing curing speed: up to 60 meter per minute is possible
- Space-saving installation due to compact modular construction
- No fading / yellowing of the materials
- High process reliability as UV output will decline just slightly over the entire service life
- Low heat generation provides special suitability for curing heat-sensitive materials such as coniferous wood

A combined method for varnish curing using UV LEDs (NobleCure®) and UVC high-performance lamps (UVC Cure) has proven to be extremely effective for wood curing.

NobleCure® is a UV LED module which can be used efficiently for deep curing at a wavelength of e.g. 395 nm. In contrast, the UVC Cure module is equipped with special flat lamps and a QRC® reflector. Continuous curing at the surface is achieved with this UV lamp module in a wavelength range of about 254 nm.
Both UV modules can be integrated into the curing plant with minimum space requirements. Their modular design makes the UV systems suitable also for large working widths.





Comparison of technical data

UV Technology	UV LEDs - NobleCure®	UVC lamps - UVC Cure
Maximum working width	2,300 mm	2,300 mm
Power consumption of the entire system at a working width of 1,300 mm	3.5-7 kW - 25-50 W/cm	2.5 kW (4 lamps) - 16 W/cm
UV intensity at 10 mm working distance at wavelength	2-4 W/cm² at 395 nm	140 mW/cm² at 254 nm
Temperature at the surface of the UV light source	< 50°C	90 – 120°C
Service life	~ 10,000 h	~ 10,000 h
Special technology	- Micro-optics - Chip on board (COB)	- High-performance UVC lamp technology - QRC® reflector
Advantages	- Optimal deep curing - Energy-saving due to cycle option - Decentralised low-maintenance water cooling - No additional costs for compressed air - Ozone-free - Special micro-optics enable large working distances and 3D geometries - No heating of the material by infrared heat	- Optimal continuous curing at the surface - Low energy consumption - Incl. media box and air conditioning - Ozone-free - Innovative high-performance UVC lamp technology with patented QRC® reflector enables large working distances - No heating of the material by infrared heat

About Excelitas Technologies

Excelitas is a leading provider of advanced, life-enriching technologies that make a difference, serving global market leaders in the life sciences, advanced industrial, next-generation semiconductor, aerospace and defense end markets. Headquartered in Pittsburgh, PA, USA, Excelitas is an essential partner in the design, development and manufacture of photonic technologies, offering leading-edge innovation in sensing, detection, imaging, optics, and specialty illumination for customers worldwide. Excelitas is at the forefront of addressing many of the relevant megatrends impacting the world today, including precision medicine, industrial automation, artificial intelligence, connected devices (IoT) and military modernization.

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