

Legislation & Standardisation: **The impact on UV businesses for 2023 and beyond** (part 1)

In Europe, UV technologies have been used for drinking water disinfection since the 1950s. Even in the US, where they were adopted much later, the use of UV light for water treatment is now well established. Looking ahead to 2023, there are discussions around changing standardisation rules for medium-pressure UV lamps. It will take time before these developments are translated into legislation but it is important for businesses to be aware of the current trajectory.

First of all, it is important to outline what is meant by UV-C light. UV-C represents the shortest wavelength within the UV spectrum, between 200 nm to 280 nm. It is also the most harmful, but this is mitigated by the fact that naturally emitted UV-C radiation cannot penetrate the earth's atmosphere. Nevertheless, man-made sources of UV-C lighting, such as germicidal UV-C lighting, do present a risk, necessitating a rigorous regulatory environment.

This article was written in collaboration with **Jürgen Zechner**, owner of Conformity Experts and Product Compliance Officer for UV & LED system validation.

What is the influence of regulation in the UV-C industry?

Any discussion of regulations as they pertain to UV-C technology must separate legislation and standardisation. On the legal side, there have not been many changes in recent years. While there were some alterations in terms of general requirements, driven largely by new EU directives, legislation aimed directly at UV-C has not necessarily been forthcoming.

Regulatory differences

In terms of standardisation, in the last couple of years, new validation standards have emerged in Europe. These include ÖNORM M 5873-1 and DIN 19294-1, standards that apply to UV water disinfection.

The recently issued ÖNORM and DIN standards provide more detailed criteria for UV lamps and ballasts. Today, it is possible to dim lamps with many UV systems, which is now tested under these new standards. As UV-C output can vary substantially when lamps are dimmed, it was important this was added as a factor within new validation standards.

In the US, meanwhile, the recently published “Innovative Approaches for Validation of Ultraviolet Disinfection Reactors for Drinking Water Systems” is the result of a four-year project looking at new approaches for UV dose monitoring and validation.

The document provides a reference for new and enhanced validation methods developed since the publication of the UV Disinfection Guidance Manual (UVDGM), issued all the way back in 2006.

Another validation standard, NSF/ANSI 55, is also relatively new and serves as a residential protocol for proving the performance of UV equipment under specific conditions. In addition, there are also US validation guidelines applicable to UV technology suppliers operating in that market.

Furthermore, the revised EU Drinking Water Directive, which member states must transpose into national legislation by [January 2023](#), promotes UV as an acceptable disinfection method for municipal water, providing water suppliers can demonstrate [“that any approach to disinfection is robust and appropriate”](#).

Looking forward, we will see what impact the revised EU directive on drinking water will have. Under the new rules, water suppliers will have to conduct a risk assessment for their water treatment systems. If water suppliers take these legislative changes seriously, it will present a good opportunity for UV providers to increase business in the municipal area.

UV validation brings confidence

It is clear, therefore, that the current regulatory environment for UV-C light contains more than a few nuances that businesses should be aware of. As such, it is important that all OEMs test and validate their systems.

UV solutions are tailor-made to meet specific user needs for different applications. To validate these integrated systems, it's important that different scenarios can be tested. Nedap lamp driver technology facilitates OEMs to test and validate their systems in four ways:

1. UV Tool for testing

Nedap driver technology comes with integrated software that enables you to configure lamp driver settings in an easy way to test different custom settings and monitor performance.

2. Extensive dimming (down to 5%)

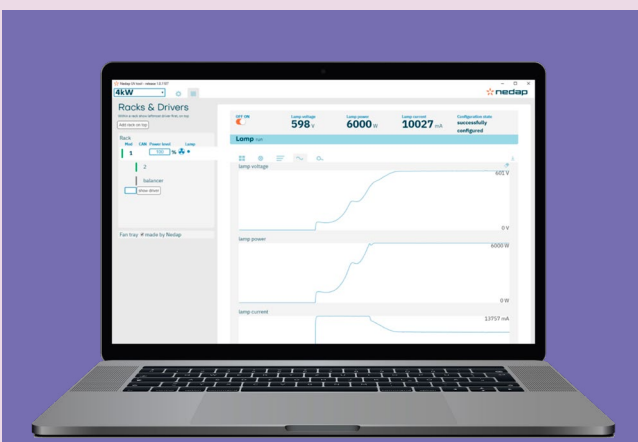
For testing and validating UV systems, Nedap drivers facilitate extensive dimming to simulate dirty UV Quartz sleeves. This makes testing easier, speeding up the inspection process.

3. CE and UL/cUL-recognised

Using a lamp driver that is already tested and certified for use in the European market (CE), and also approved for the US (UL) or Canadian (cUL) markets.

4. Cabinet design support

With over 30 years of experience, our engineers can help OEMs design power supply cabinets that protect against harsh environments, such as maritime and offshore, severe shock attenuation, wide temperature ranges, and horticulture, as well as food and pharmaceutical industries.





At Nedap, our validation is our added value. Our smart driver technology is designed to suit current regulations, with one eye on future developments. It delivers system efficiencies that you can trust, providing cost savings and [sustainability](#) benefits.

Get in touch with us to find out how our UV technology can help you navigate the current regulatory minefield - designed with both validation and standardisation in mind.

We power UV

Smart UV driver technology for more sustainable operation



Nr. 1 technology • Most efficient driver technology, requires less installation space. >900.000 electronic UV lamp drivers installed and in use worldwide.



Reliable • Nedap UV drivers are designed to last. The average lifetime production is more than 10 years.



Flexibility • Digital lamp selection and optimization and UV lamp dimming down to 30% and beyond.



Insights • Relevant data for cleaner operation. Embedded software for system data reporting.