



Minuit Une is a lighting company, based in Paris, manufacturing the most effective lighting concept in 500-to-5000 people venues: IVL Lighting by Minuit Une.



IVL™ Square
by **MINUIT ONE**

592 mm x 520 mm x 242 mm, 16 Kg
25 channels in mode 1
45 channels in mode 2
125 W consumption

**LIVE DESIGN
LDI
AWARDS
BEST DEBUTING PRODUCT**

Take advantage of a break-through laser-based technology to make all the difference,
WITHOUT VARIANCE NEEDED.

Certified variance free.

Internationally certified by independent testing laboratories as a class 3R laser-based fixture (the «R » stands for reduced control), with CB, CE, IECEE and NRTL labels, IVL Square can be used by any lighting designer, operator, and company without any variance: no training, no laser safety officer, no variance is required.

Laser products promoted for demonstration purposes are limited to hazard Class IIIa by FDA regulation 21 CFR 1040.11(c). This means that projectors are limited to 5 milliwatts output power in the visible wavelength range from 400 to 710 nanometers. There are also limits for any invisible wavelengths and for short pulses. Laser light show projectors therefore may not exceed the accessible emission limits of CDRH Class IIIa. Laser light show manufacturers must submit a variance request for FDA approval in order to sell and operate higher class (Class IIIb and IV) laser light show equipment.

Extract of the [FDA webpage " Laser light shows"](#): Variance only apply for class 3B and class 4.
Note: class 3R and class IIIa are equivalent (as explained [here](#)).

As safe as LED:

The definition of risk for a class 3R is the same as for LED: safe when being use responsibly, i.e when not "staring" into the beam (the mention "do not stare into the beam" can be found on every LED product). As for LED a class 3R can cause flash blinding at

short distance but the risk of injury is very low. Class 3R is very common in the USA since class 3R laser pointers can be sold to consumers market in the USA.

Class IIIa or IEC Class 3R lasers can be dangerous. Class IIIa lasers can cause temporary visual effects such as flash blinding, which could distract or startle the person exposed. The risk of injury is very small when Class IIIa pointers are used responsibly because natural body motion of a person holding the pointer or motion of a person who might be exposed makes it difficult to expose the eyes for a long period of time. People also have a natural aversion to bright lights and are likely to close their eyes and turn their heads if exposed.

Extract of this [FDA Webpage](#)

Any LED could also be classified as Laser. Most of the LED lighting product for live event would be classified as class 3R. The most powerfull LED products could be even class 3B.

The 60825-1 standards apply equally to lasers and LEDs. In most places we have used the word "laser", but "LED" can replace it. Generally speaking LEDs would be in the lower Classes (1, 1M, 2, 2M, 3R), but very exceptionally may be Class 3B. At the time of writing we are not aware of any Class 4 LEDs*.

extract of the [U.S Department of Energy National Laboratory](#) webpage "laser safety classification".

In conclusion, the live events industry is already using every day fixtures with the same level of risk as to the IVL product, and the live events people are already well trained to this level of risk: do not stare into the beam at close distance, which also applies for the camera.

IVL Technology, a break-through innovation:

The core of the IVL Technology is a unique and patented fail-safe 360° scanning system, continuously rotating at very high speed (> 340Hz), 10 times faster than usual laser projectors, combined with an extended source. Therefore, the exposure allowed by the standards is much greater than for usual laser projectors. As a result, the IVL Technology provides the first laser-based fixture to become as safe as any other light source with an output calibrated for mid-sized venues. Based on a laser source, the IVL technology is not a laser-effect, but an all new-concept of lighting with unique advantages.

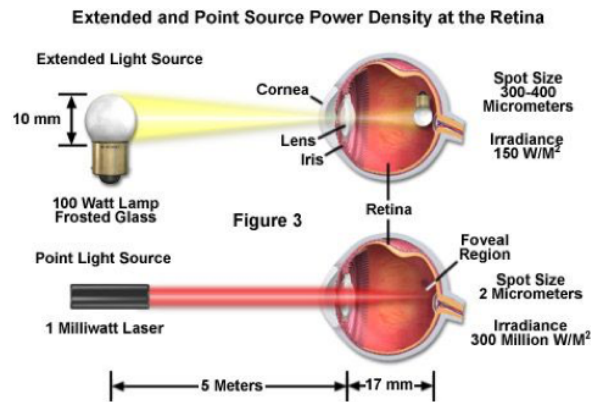
To know more about the two main developments:

1) safeguard:

IVL Technology scanning safeguard system is based on a redundant safety check of the scanning speed. A mirror is mounted on the brushless rotating motor. An infrared emitter/detector is positioned so that signal is reflected to the detector at each tour. The speed is fixed and monitored. Laser emissions extinguished upon reduction of rotational speed via a fail-safe monitored system.

2) extended source:

Like LED or LAMP, the IVL's output is an extended source with a beam diameter greater than 12mm. Unlike most laser projectors, it is not a point source.



Make a difference with low logistics:

For the first time ever, IVL Square allows to take advantage of the qualities of a laser-based lighting fixture (very sharp light, vivid colors, unique textures, very long lifetime) without any limitation or specific control: IVL Square can be easily programmed by any DMX desk.

Wide-covering and multi-directional fixture, IVL Square is the only fixture already creating 3D perspectives, incredible lighting experiences, endless possibilities from one single source: the perfect solution to make a difference with low logistics, first designed for mid-sized venues.

