# PMA-Lite™ 2.0 LED Photolysis Device

An optimized photoactivation device designed for photolysis of PMAxx™- and PMA- treated samples in viability PCR.

**Product attributes**

## Product Description

The PMA-Lite™ 2.0 LED Photolysis Device is a light-weight LED light box specifically designed for optimal photoactivation of samples treated with propidium monoazide (PMA), PMAxx™ or ethidium monoazide (EMA) in viability PCR applications.

### Controlled & Consistent Photoactivation

The PMA-Lite™ 2.0 LED Photolysis Device was developed to offer controlled and consistent photoactivation of viability PCR samples treated with PMA, PMAxx™, or other photoreactive dyes. The device holds up to 18 tubes and contains multiple LED lights that are positioned to provide uniform and maximal illumination to all tubes. The PMA-Lite™ 2.0 is designed as an improved version over the previous PMA-Lite™ LED Photolysis Device by including an intuitive touch screen for programming and monitoring, in addition to offering more flexibility for photoactivation durations.

### Viability PCR for Rapid and Sensitive Analysis of Microbial Viability

Viability PCR (v-PCR) merges the specificity and sensitivity of qPCR-based methods with a dead cell selective DNA binding dye such as PMAxx™, PMA, or EMA. The technique is extremely versatile and can be applied to numerous species of bacteria, eukaryotes, viruses, and archaea.

PMAxx™ and PMA are photoreactive dyes developed by Biotium to have superior dead cell selectivity over culture-based methods and the alternative EMA v-PCR dye. The dyes form covalent crosslinks with dsDNA upon exposure to intense visible light. The mechanism that underlies the distinction of dead microbes from live ones is two-fold. The DNA that is crosslinked to the dye is not efficiently amplified, and it precipitates during DNA isolation, resulting in a lower recovery of modified DNA. Because the dyes are cell membrane impermeant, when a sample containing both live and dead bacteria is treated with dye, only dead bacteria with compromised cell membranes are susceptible to DNA modification. In a real-time PCR reaction, dead cell DNA will show delayed amplification and higher Ct than live cell DNA. v-PCR permits quantitation of bacterial viability and can be used with complex, mixed-strain, or viable but non-culturable samples.

To learn more about the advantages of determining microbial or cell viability using viability PCR, visit the Viability PCR Technology Page.

PMAxx technology is covered by granted and/or pending US and international patents.

## References

Download list of curated PMA and PMAxx™ References and a list of PMA and PMAxx™ Validated Bacterial Strains.