

**Photolyst™ X100**

Catalog number: PLX100  
Unit size: Each

Component	Quantity
Photolyst™ X100	1 each
USB-C cable	1 each
USB power adapter	1 each
Photolyst™ X100 Product Information Sheet (PIS)	1 each
Certificate of Conformity (COC)	1 each

**OVERVIEW**

Photolyst™ X100 is a dual-channel, LED-based device used for the photoactivation of MycoLight™ vPCR350 and other similar photoreactive dyes, such as propidium monoazide (PMA), PMAxx and ethidium monoazide (EMA). This device contains two long-lasting LED lights, providing consistent illumination at either 365 nm or 465 nm wavelengths. The ability to toggle between two illumination sources enables the efficient activation of commonly available photoactivatable reagents using a single device. Additionally, this device is compatible with ubiquitous and convenient to use PCR tubes, holding up to 200 µL of sample. A compact form factor allows for simple integration into existing lab workflow and serves as an excellent entry point into applications that require photoactivated dyes, such as viability PCR (vPCR).



Figure 1. Photolyst™ X100 device

**PRODUCT SPECIFICATIONS**

**Physical characteristics**

<b>Instrument type</b>	Photolysis device
<b>Instrument dimensions</b>	3.39 in (w) x 5 in (l) x 1.97 in (h) (8.8 cm x 12.7 cm x 5 cm); rectangular shape
<b>Weight</b>	9.792 oz (280 g)
<b>Operating power</b>	100-240 VAC, 1.2 A
<b>Frequency</b>	50 / 60 Hz
<b>Electrical input</b>	5 V, 3.0 A
<b>Installation site</b>	Indoor use only
<b>Operating temperature</b>	10 - 40 °C
<b>Operating humidity</b>	20 - 80% (non-condensing)

**Technical characteristics**

<b>Light sources</b>	Near ultraviolet LED (max ~365 nm)  Blue LED (max ~465 nm)
<b>Tube type</b>	0.2 mL Real Time PCR (polypropylene) tubes

**APPLICATION NOTE**

PCR can be used to quantify pathogenic DNA, but one big limitation is that it cannot distinguish between live and dead cells, leading to potentially inaccurate results. Viability PCR (v-PCR) is an advancement in PCR technology that uses a

photo-reactive reagent to differentiate between living and dead cells.

Mycolight™ vPCR350, developed by AAT Bioquest, is a photoreactive dye derived from the popular v-PCR reagent Propidium Monoazide (PMA). Upon activation by a 365 nm light source, Mycolight™ vPCR350 binds covalently to DNA, blocking amplification during PCR. Because the dye is cell membrane impermeable, it selectively inhibits amplification of DNA from dead cells, which have compromised cell membranes. Live cells, with intact membranes, prevent uptake of the dye, thereby leaving amplification of live cell DNA unaffected.

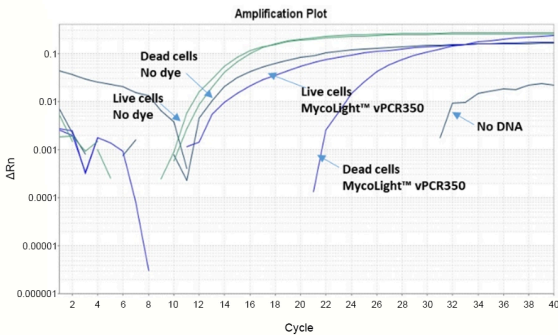


Figure 2. Normalized qPCR curves were obtained from a viability PCR experiment involving live and heat-inactivated *E. coli*, treated with Mycolight™ vPCR350. The qPCR analysis utilized primers targeting a region of the *uidA* gene. Treatment with Mycolight™ vPCR350 did not impact the amplification of DNA from live *E. coli*. However, it led to a notable delay in the amplification of DNA from heat-killed *E. coli*.

## OPERATION

1. Connect the provided USB-C cable into both the power adapter and the device power port (located on the back of the device).
2. Plug the power adapter into a power outlet that complies with the electrical requirements listed in the product specifications.
3. A white LED will turn on to indicate that the device is powered.
4. Flip the lid upward to open and access the sample holder of the device.
5. Place the sample (in 0.2 mL clear wall, polypropylene tube) inside the well of the Photolyst™ device.
6. Close the lid to limit exposure to high-intensity light.

7. Toggle the rocker switch to turn on either the 365 nm or 465 nm light.

⚠ *UV light may be emitted from this product.*

*Ensure the lid is closed before turning on the light.*

*Avoid eye and skin exposure.*

8. Leave the sample inside for the recommended time, based on the experimental protocol, then flip the switch back to its default (middle) setting to turn off the light.
9. Lift the lid and remove the sample for further processing. Unplug the device to fully shut it off, or repeat the steps above to begin the photolysis process again.

## WARRANTY

AAT Bioquest warrants Photolyst™ X100 (the “Product”) as set forth in the Terms and Conditions of Sales found on AAT Bioquest’s website <https://www.aatbio.com/tos.html>. AAT Bioquest warrants that this Product will be free from defects in material and workmanship for a period of twenty-four (24) months from the date of purchase. This warranty covers the original purchaser and shall not extend in its validity to third parties. This warranty is valid only for Product which has been operated in the manner, conditions and with the care described in the Product Information Sheet. This warranty will be voided by improper or unauthorized maintenance of the Product.

For technical support, contact 1-800-990-8053 or email [support@aatbio.com](mailto:support@aatbio.com). DO NOT ship a device without a Return Authorization. If a return is necessary, as determined by AAT Bioquest Technical Support, return instructions will be provided.