

Tech Tip #124 - *Lamp Output Specifications* for 4460, 4080, 5280, and 52110

Lamp intensity is critical in the manufacturing process of photopolymer printing plates. Low output levels impact the quality of a finished plate, both in imaging and in post curing. The useful life expectancy of lamps for a MacDermid Liquid Exposure Unit or post-exposure unit will vary widely depending on the type of lamp, operation temperature, number of cycles, and total hours of run time. Lamp manufacturers provide no guarantee of life and very little information to assist in estimating lamp life expectancy. MacDermid recommends changing lamps annually or when the intensity reaches the replace specifications below, whichever comes first.

Due to the ongoing global effort to replace mercury in fluorescent UV lamps, new lamp intensity variation has increased. It is MacDermid's general recommendation to replace lamps when they reach 60% of the original (new) lamp intensity. Lamp outputs are measured using an IL 14001, OLEC, or equivalent, light meter and measured through the glass on each of the units. When measuring intensities on the GPX unit, a separate UVC probe is required and specific safety precautions must be taken during this procedure.²

Exposure Unit: Upper Frame

High output lamps, measuring 350nm, are used in the upper frame of all exposure units that are used to manufacture thin (0.045" - 0.125") photopolymer plates and some units that manufacture thick (0.125" - 0.250") plates.

Output When New 2.0 ± 0.5 mW/cm ²	Replace < 1.2 mW/cm ²
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Exposure Unit: Lower Frame

High output lamps, measuring 370nm, are used in the lower frame of all large format exposure units and in the upper frame of some thick plate units to reduce T1 exposure times.

Output When New 4.0 ± 0.5 mW/cm ²	Replace < 2.5 mW/cm ²
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Post-Exposure Unit

370nm, very high output, lamps are specified for all large format post-exposure equipment.

Output When New Up to 18.0 mW/cm ²	Replace < 9.0 mW/cm ²
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GPX Unit

254 nm, very high output, are specific to light finishing equipment in order to provide a completely tack-free plate surface.

Output When New Up to 11.0 mw/cm ² 600 mj/2 min	Replace ≤ 6.0 mw/cm ² 300 mj/2min
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¹ Available from International Light Company, (978) 818-6180

² Contact a MacDermid technical representative regarding the procedure for measuring intensity in GPX units.