

Certified UV Lamp Testing

This document applies only to low-pressure and low-pressure high output UV lamps, which emit primarily at 254 nm.

Introduction

When UV lamp manufacturers market their UV lamps, they should provide data concerning the following characteristics:

Electrical power (W)

UVC efficiency (%) [ratio of the total UVC power (W) to the lamp electrical power (W), expressed as a percentage]

Arc length (mm) (distance from the tip of one electrode to the tip of the other electrode)

Configuration (e.g., linear, U-shaped, etc.)

Outer diameter (mm)

Irradiance at 1.0 m from the lamp center (optional)

Ideally, the UVC efficiency should be certified by a “third party” independent expert, hereinafter called the “expert”.

Certification Process

When a UV lamp manufacturer (hereinafter referred to as the “client”) wishes to have a specific lamp type certified, the following process should be followed:

1. Consulting M&A Business Development LLC (CMABD) will specify an expert/**Jim Bolton** to supervise the UV lamp testing.
2. The UV lamp testing can take place either at the client’s facilities or at a test site designated by CMABD.
3. The client is responsible for travel and accommodation expenses for the expert to travel to the test site.
4. The client should take 25 UV lamps from stock and mark each lamp with the numbers 1 to 25.
5. Once this is done, the expert is notified that the lamps have been marked. The expert selects twelve (12) lamp numbers at random.
6. The twelve (12) selected lamps are then operated at full power for 100 hours prior to testing.
7. The lamp testing must be carried out according to the Protocol and the expert must determine that the lamp testing chamber fulfills the requirements as specified in the IUVA Lamp Testing Protocol (IUVA, 2017). → see in this web page under the menu point PR/News
8. All operations in the lamp testing must be supervised by the expert, and he/she must see and record all data.
9. CMABD can provide a neutral measurement laboratory partner with all the UV radiometer established and equipment as well as accredited or certified on taking these UVC measurements.

- a. Additional option: The client must provide a suitable radiometer appropriate for 254 nm UV and a true power analyzer capable of measuring the true power, voltage and current across the lamp and from the wall. Calibration certificates must be given to the expert to show that these instruments had been calibrated within a period no more than 12 months prior to the test date.
10. The expert must inspect the lamp testing chamber and must measure the important distances (specifically, the distance from the lamp center to the radiometer detector).
11. The expert should record the temperature of the test chamber.
12. At the beginning of the lamp testing, the expert must select 10 of the 12 prepared lamps for the actual lamp testing.
13. Once the lamp testing has been completed according to the IUVA Protocol, the expert will write a Report giving the relevant lamp testing data. He/she will also prepare a Lamp Test Certificate specifying the average UVC efficiency as determined in the Lamp Tests.
14. Please contact us for a quotation on the certified lamp testing via our recommended expert Jim Bolton, 3rd party witness assured system. Please fill out the contact form on this web page, NDA can be assured, or send an email to Platzer@uvlampconsulting.com
15. The CMABD Expert Team is fully supporting this way of 3rd party witness lamp certifying process to qualify the lamp manufacturers products on a high level and neutral way towards the UVC market and its efficiency respectively reliability claims.

Reference: IUVA (2017): Lawal, O; Dussert, B; Howarth, C; Platzer, K; Sasges, M; Muller, J; Whitby, E; Stowe, R; Adam, V; Witham, D; Engel, S; Posy, P; van der Pol, A; Bolton, J; Santelli, M. 2017, Method for the Measurement of the Output of Monochromatic (254 nm) Low-Pressure UV Lamps, IUVA News, 19(1): 9-16.