

# UV TESTER

## UV-CONDENSATION ACCELERATION AGING TESTS

UV BOX simulates the effects of sunlight with ultraviolet rays using UV fluorescent lamps and also reproduces dew and rain using moisture condensation and water spray.



The accelerated UV aging test reproduces the damage caused by **sunlight, rain and dew**. In a few days or weeks of exposure of the samples inside the UV BOX, damages occurring in months or years of outdoor exposure can be reproduced.

To simulate aging due to external atmospheric agents, UV BOX subjects the materials to alternating cycles of UV radiation and humidity at controlled high temperatures. The instrument simulates the effects of sunlight through the use of special **UV fluorescent lamps** and the simulation of the effect of dew and rain occurs through condensation or a spray of water (**Spray** option).

UV radiation is responsible for almost all the processes of photo degradation of durable materials exposed to the external environment. The fluorescent lamps used in the UV BOX simulate critical UV short waves and realistically reproduce the damage caused by sunlight. The types of damage that can be simulated with the UV BOX are the following: color change, loss of gloss, chalking, cracking, cracks, blistering, veiling, brittleness, loss of strength and oxidation.

Dew is mainly responsible for most of the moisture that occurs during outdoor exposure, much more than rain. The condensation system of the UV BOX realistically simulates dew and amplifies its effect through the use of high temperatures. The condensation process automatically purifies the network water used in the system. This is because the process of evaporation and condensation of water on samples is actually a distillation process, which allows to remove all impurities.

UV BOX can accommodate up to **48 standard samples** (75mm x 150mm) and it is possible to create special sample holder according to customer specifications.

**TIMER LAMPDE**

H	MIN	SEC
08	00	00

**TIMER COND.**

H	MIN	SEC
04	00	00

**TIMER SPRAY**


H	MIN	SEC
00	00	00

START

PAUSA / RESET

STOP

**ISO 4892-3 CICLO 1**



S.P. Lampade **60.0**    B.P. °C **24.1**    S.P. Condensa **50.0**

Acqua °C **16.0**

**TEST FERMO**

**PROGRAM**

01

**CICLO**

00 50

**IRRADIANCE W/m2**

0.50

0.50 **0.76**

0.50

0.50

UV BOX meets a wide range of international and industry specifications, ensuring the reliability and reproducibility of the tests. **STANDARDS:** ASTM D4329, D4587, D4799, D5208, G154, G151 ISO 4892-3, 11507, 11895, 11997-2 EN 927-6, 1297, 12224, 13523-10, 1898, pr 1062-4 SAE J2020.

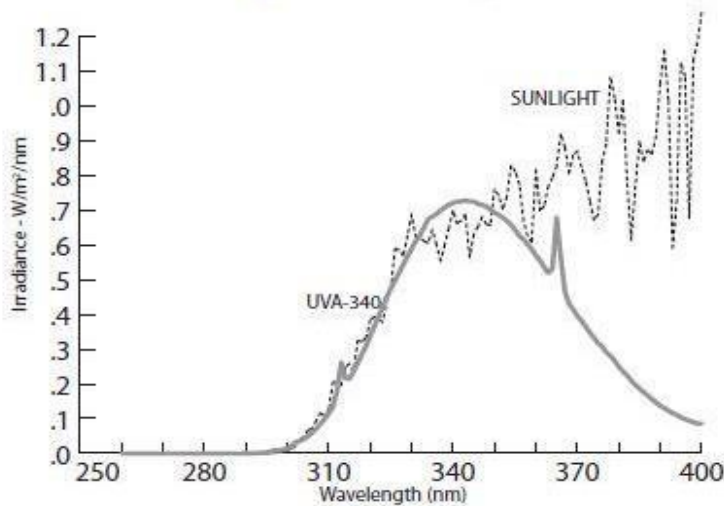
## UV lamps

UV fluorescent lamps are more stable than other types of lamps, including xenon arc lamps. The spectral distribution (SPD) is not changed with the aging of the lamp, even after thousands of hours of operation, and this feature involves in more reproducible results, less frequent lamp replacements and a reduction in operating costs.

### **Lamps UVA-340:**

UVA-340 lamps offer the best simulation of sunlight in the critical wavelength region from 365 nm up to the solar cut-off value of 295 nm.

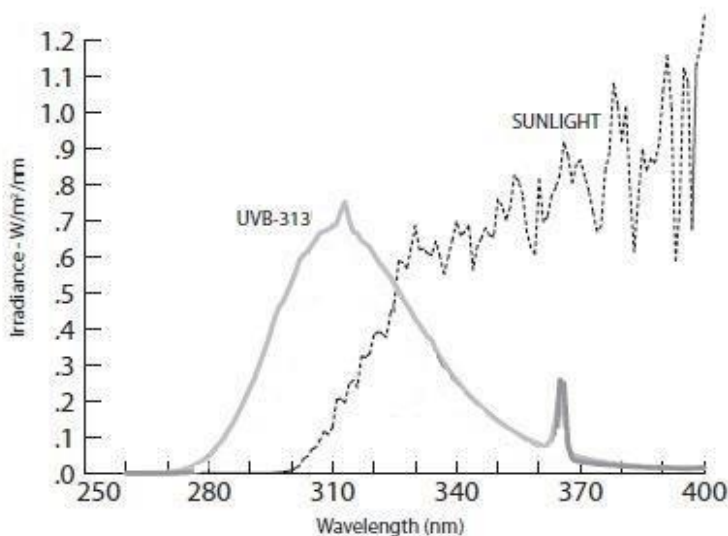
### **UVA-340 Lamps vs. Sunlight**



### **Lamps UVB-313:**

UVB-313 lamps maximize acceleration through the use of the most aggressive UV short waves compared to those normally arriving on the earth's surface. As a result, for some materials these lamps can produce too severe and unrealistic results.

### **UVB Lamps vs. Sunlight**



## Technical data

Model UV BOX – Enhanced	
Electrical requirements	
Mains voltage	230 Vac 10%, 50/60 Hz.
Mains connection	1/N/PE
Current consumption	10 A (max.)
Measures and weight	
Dimensions (WxDxH)	1300 x 700 x 1500 mm.
Weight	120 Kg.
Standard Specimen Capacity	48
Features	
Lamp UV (UVA or UVB)	8
Adjustment and control of irradiance level	yes
Display of current irradiance level	yes
Irradiance:	min 0.35 W/m <sup>2</sup> (UVA, UVB) – max 1.55 W/m <sup>2</sup> (UVA) - 1.23 W/m <sup>2</sup> (UVB)
BPT black panel temperature range	Stage UV 35-80°C – stage condensation 35-60°C
Microprocessor control	yes
Control panel touch screen	yes
Test report	yes
Storing various test conditions, free programming of tests standards	yes
Calibration sensor program	yes
Connectivity	Ethernet yes – WiFi optional
Water for condensation stage	Pressure 2-3 bar – water demineralized recommended
Water for spray stage (optional)	Pressure 2-6 bar – conductivity <5µS/cm
Standard	ASTM D4329, D4587, D4799, D5208, D6662, G53, G154, G151 ISO 4892-3, 11507, 11895, 11997-2, 16474-3 EN 927-6, 1297, 12224, 13523-10, 1898, pr 1062-4 SAE J2020 – AATCC TM186