**QUV Accelerated Weathering Tester** and **Q-Sun Xenon Test Chamber**

**Equipment:** QUV Accelerated Weathering Tester and Q-SunXenon Test Chamber

**No. of Equipment: UFCH7**

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**Equipment Description**

**Description of equipment:**

The QUV Weathering Tester is the world’s most widely used weathering tester. It is based on the concept that, for durable materials, short-wave UV causes most weathering damage. The QUV is designed to produce the damaging effects of sunlight on durable materials using fluorescent UV lamps. These lamps are electrically similar to the common cool white lamps used in general lighting, but are designed to produce mainly UV rather than visible light or infrared.

The Q-Sun xenon Test Chamber is the ultimate Research and Development and Quality Control tool for testing materials that are exposed to direct sunlight, sunlight through window glass or eve harsh indoor lighting. Q-SunXenon Test Chamber reproduce the full spectrum of sunlight, including ultraviolet, visible light and ifrared.

Specifications and technical features:

 QUV Overview

* Solar Eye Irradiance Control
* Lamps: UVA-340, UV-B
* Condensation
* Water spray system
* ISO calibration

Q-Sun Overview

* Full-spectrum xenon arc lamps
* The Solar Eye Irradiance Control System
* Optical filters (Daylight, Window, Extended UV)
* A choice of irradiance set points (340 nm, 420 nm or TUV)
* AutoCal system for easy calibration (Radiometer)
* Temperature control
* Large specimen capacity for 3D parts
* Black Panel or Black Standard temperature control
* ISO, ASTM &SAE compliance

**Specification of expertise relevant to NanoEnviCz workpackages:**

**WP4**a,b,c, **WP5**a, **WP6**b,c,d,f,

**Detailed description of expertise**

**Please, specify the main research topics connected with equipment**:

Accelerated weathering and light stability of materials

Light, high temperature, moisture, and indoor lighting and sunlight can cause damage to pigments, dyes and coatings, plastics, and other organic materials. This damage includes gloss loss, fading, yellowing, cracking, peeling, embrittle-ment, loss of tensile strength, and delamination.

**Please, specify the secondary research topics connected with equipment**:

For many manufactures, it is crucial to formulate products that can withstand weathering and light exposure. Accelerated weathering and light stability tester are widely used for research and development, quality control and material certification.

**Keywords describing research area:**

Accelerated weathering; light, high temperature, and moisture stability

**Competence**

**Relevance for applied and industrial research:**

Sunlight, heat and moisture cause millions of dollars in material damage every year. Product damage-including cracking, crazing, hazing, fading and yellowing- can occur indoors or outdoors, depending on how sensitive the material is to light, temperature and accelerate various service conditions using the latest xenon arc technology.

**Relevance for fundamental studies:**

Determination of material degradation mechanisms due to water, moisture, humidity, heat, illumination (sunlight, UV light)

Development of materials with enhanced durability.