ETICS	**Information document**	

Communication to the Members of ETICS about Horticultural Luminaires with LEDs testing and certification

Contents

ETICS, the European Testing Inspection Certification System
Rue des Deux Églises, 29 - 1000 Brussels - Belgium
www.etics.org \ email: secretariat@etics.org

1 Foreword

This document is the communication to the members to inform them about the proposal to create a new ENEC Requirement Sheet (ERS) covering Horticultural luminaires with LEDs. This ERS is necessary to cover all the risks concerned and to continue certification of Horticultural luminaires.

2 Summary of the existing situation and reasons why a change would be beneficial

Horticultural luminaires have always been part of the ENEC scheme. The luminaires were evaluated according there application e.g. fixed luminaires. Traditionally the horticultural luminaires were equipped with mostly gas discharge lamps like high pressure sodium lamps.

With the introduction of LED the horticultural luminaires could not only be equipped with light sources which are more energy efficient. It was also possible to add, besides LEDs which emit white light, some LEDs which emit a specific wavelength like red, far red and blue to optimise the grow of plants, flowers, fruit and vegetables.

The luminaire standard only covers luminaires with light sources which produce visible light. The photobiological hazards as mentioned in cl.4.24 of the EN 60598-1 only addresses hazards that can be expected as a side effect of these light sources. Since the horticultural luminaires are also equipped with LEDs which do not only produces visible light, the luminaire standard will no longer cover all the risks. Therefore additional evaluation of the light source with respect to photobiological hazards is required.

This omission is also acknowledged by TC 34. TC 34 therefore created WG19 Horticultural lighting. Since the workgroup only has premature documents and standards are not expected to be delivered the coming 3-4 years we need to have an intermediate solution to maintain to accommodate the certification of horticultural luminaires.

3 Overview of the proposed technical, testing, and certification requirements for the Horticultural Luminaires

The proposed ERS details the application of EN 60598 series and EN 62471 with respect to the specifications used for the granting of the ENEC Mark for Horticultural Luminaires with LED.

In addition to what is required by EN IEC 60598-1:2021 (and relevant applicable parts two), the Horticultural Luminaire with LED, shall be classified in Risk Group 0 (Exempt Group), in accordance with the requirements of the EN 62471, for all Photobiological Risks except the Blue Light Hazard whose requirements are already addressed in subclause 4.24 of the EN IEC 60598-1:2021.

During the evaluation of Photobiological Risks (EN 62471), the hazard values shall be reported as either irradiance or radiance values at a distance which produces an illuminance of 500 lux where General Lighting is provided together with Horticultural Lighting and at 200 mm for all other cases.

Recommendations for the correct use, in addition to that already requested by the EN IEC 60598-1, maintenance and installation should be provided (e.g.: the distance which provides 500 lux if this is higher than 200 mm).

Particular attention should be paid to the classification of the luminaire, particularly to the IP rating that should be carefully considered according to the intended use of the Horticultural Luminaire.

4 Details of ETICS engagement with the luminaire industry, so far, to support this initiative.

Already members are providing services to luminaire manufacturers to accommodate third party testing of horticultural luminaires with LEDs. This ERS will give a clear set of requirements for the members to provide also ENEC certification for these type of luminaires.

5 The types of Horticultural Luminaires to be covered by the Scheme, and how ETICS would support the introduction of the new technologies entering the market (this Scheme should not hamper technical developments)

The ERS will only cover horticultural luminaires with LEDs, horticultural luminaires with traditional light sources are already covered within the scheme. This ERS enables horticultural luminaires which also intentionally emit light outside the visible spectrum to be tested and certified within the ENEC scheme.

Currently we are only covering luminaires which are classified as Risk Group 0 (RG0) (except for blue light hazards). Allowing also radiation above RG0 would mean that additional precautions shall be taken into account for the luminaire and its surroundings. This is at the moment not covered in the ERS. This can be considered when these requirements are introduced in the documents from IEC TC34/WG19.

6 The market benefits seen for the horticultural luminaire industry and how ETICS plan to help promote this.

The horticultural lighting industry has always been promoting ENEC for their luminaires when they were still using traditional light sources and the expectation is that this will also be the case for horticultural luminaires with LEDs which also intentionally emit light outside the visible spectrum.

7 ERS explained

The ERS only covers horticultural luminaires with LEDs which do not emit light above the limits of Risk Group 0 for the following hazards:

- Actinic Ultraviolet Hazard
- Near-UV Hazard
- Retinal Thermal Hazard
- Retinal thermal, weak visual stimulus (if applicable according to 4.3.6 of EN 62471:2008)
- Infrared Radiation Hazard for the eye

NOTE : Blue Light Hazard requirements are already addressed in subclause 4.24 of the EN IEC 60598-1:2021.

The hazard values, during the evaluation of Photobiological Risks shall be reported as either irradiance or radiance values considering the following distance:

- a distance which produces an illuminance of 500 lux where General Lighting is provided together with Horticultural Lighting;
- 200 mm for all other cases.

8 Scope extension process

The ERS covers the luminaire standard and additionally an evaluation needs to be performed concerning the photobiological hazard which is already part of the luminaire evaluation. There is no additional equipment needed to cover the ERS compared with the equipment needed for luminaire testing according the EN 60598 series. Therefore no additional requirements are needed for Testing Laboratories which already have the luminaire standard in their scope when they want to apply for a scope extension.

9 Incorporation to the OSM-LUM

Since the ERS covers Horticultural luminaires with LEDs it will be within the scope of the OSM-LUM.