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News Release

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ASABE Revises Standard on Lighting for Controlled Growing Environments

ST JOSEPH, MICHIGAN— The American Society of Agricultural and Biological Engineers (ASABE) has revised one of its standards on the use of artificial lighting in controlled plant-growth environments.

The revision, ANSI/ASABE S642.1 SEP2025 Recommended Methods for Measurement and Testing of Electromagnetic Radiation Sources for Plant Growth and Development, describes methods for the measurement and testing of electromagnetic radiation sources, both passively cooled and actively cooled, with a spectral range between 280 nm and 800 nm, used for plant growth and development. These methods are necessary to obtain information about device characteristics and long-term change behaviors.

This document covers LED as well as non-LED sources such as incandescent, fluorescent, high-intensity discharge, including high-pressure sodium, metal halide, and other sources used for plant growth and development. S642.1 is one of three standards developed by ASABE in response to the rapid developments in LED technology and the increased use of LED devices in plant growth applications.

There are two other standards in this series:

- Quantities and Units of Electromagnetic Radiation for Plants (Photosynthetic Organisms) (ANSI/ASABE S640 JUL2017); and
- Design of Electromagnetic Radiation Systems for Plants (ANSI/ASABE S644 JUN2025)

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ASABE members with standards access and those with site-license privileges can access the full-text via electronic download on the ASABE online Technical Library at elibrary.asabe.org/. Others can obtain a download for a fee directly from the library or by contacting ASABE headquarters at OrderStandard@asabe.org.

ASABE is recognized worldwide as a standards-developing organization for food, agricultural, and biological systems, with more than 280 standards currently in publication. Conformance to ASABE standards is voluntary, except where required by state, provincial, or other governmental requirements, and the documents are developed by consensus in accordance with procedures approved by the American National Standards Institute. For information on this or any other ASABE standard, contact Scott Cedarquist at 269-932-7031, cedarq@asabe.org. A current listing of all ASABE standards projects can be found on the ASABE web site at www.asabe.org/projects.

ASABE is an international scientific and educational organization dedicated to the advancement of engineering applicable to agricultural, food, and biological systems. Further information on the Society can be obtained by contacting ASABE at (269) 429-0300, emailing hq@asabe.org or visiting www.asabe.org.

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