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American National Standard for Roadway and Area Lighting Equipment—Luminaire Vibration

National Electrical Manufacturers Association

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1 Scope

This Standard covers the minimum vibration withstand capability and vibration test methods for roadway and area luminaires. This Standard is not intended to address natural or catastrophic disasters.

2 Normative References

This Standard is intended to be used in conjunction with the following publications. The latest edition of the publication applies (including amendments).

ANSI /IESNA RP-16-05 Addendum b *Nomenclature and Definitions for Illuminating Engineering.*

Van Dusen Jr, H.A & Wandler, D. (1965).*Street Lighting Pole Vibration Research*.

Van Dusen Jr, H.A (1979).*Vibration Testing of Luminaires*.

3 Informative References

This Standard is intended for use in conjunction with the following Standards. When these Standards are superseded by an approved revision, the latest revision shall apply.

ANSI C136.3 *American National Standard for Roadway and Area Lighting Equipment—Luminaire Attachments*

ANSI C136.14 *American National Standard for Roadway and Area Lighting Equipment—Elliptically Shaped, Enclosed Side-Mounted Luminaires*

ANSI C136.16 *American National Standard for Roadway and Area Lighting Equipment—Enclosed, Post Top–Mounted Luminaires*

ANSI C136.18 *American National Standard for Roadway and Area Lighting Equipment—High-Mast Side-Mounted Luminaires for Horizontal- or Vertical Burning High-Intensity Discharge Lamps*

ANSI C136.37 American National Standard for Roadway and Area Lighting Equipment- Solid State Light Sources Used in Roadway and Area Lighting

4 Definitions

4.1 Fundamental Resonant Frequency

The lowest resonant frequency also called the natural frequency of vibration, which is determined by the physical parameters of the vibrating object, i.e., mass and spring constant.

4.2 High-Stress Ratio Component

A load carrying structural member of the luminaire for which a test acceleration is determined from Tables 1 or 2 based on material used.