



**C78.379-2006 (R2015, S2020)**

*American National Standard for Electric Lamps—  
Classification of the Beam Patterns of Reflector Lamps*

Secretariat:

**National Electrical Manufacturers Association**

Approved: September 28, 2020

**American National Standards Institute, Inc.**

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Secretariat C78  
National Electrical Manufacturers Association  
1300 North 17<sup>th</sup> Street, Suite 900  
Rosslyn, Virginia 22209

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## **1 Scope, Purpose, and Application**

### **1.1 SCOPE**

This standard describes a system for classification of beam patterns and beam angles of reflector lamps. Also a method of describing light output is defined.

Reflector lamps are considered to be those lamps having a reflective coating applied to the reflector part of the bulb or a reflector permanently attached to the bulb with the reflector at least partially controlling the light flux distribution. Partial reflector lamps are also covered. Both symmetrical and asymmetrical beams can be classified. Lamps with various kinds of light sources are covered.

### **1.2 PURPOSE**

The purpose of this standard is to provide a means to designate nominal beam angles and define expected tolerances about the nominal. This classification applies only to bare lamps and excludes luminaires or other systems.

### **1.3 APPLICATION**

The definitions and classification included in this standard apply only to lamps for general lighting applications.

## **2 Normative References**

The following publications contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the publications indicated below.

ANSI C78.21-2003, Incandescent PAR and R shapes  
ANSI C78.40-1992, Specifications for Mercury lamps  
ANSI C78.42-2004, High pressure Sodium lamps  
ANSI C78.43-2005, Single-end Metal Halide lamps  
ANSI C78.380-2005, Method of designation of HID lamps  
ANSI C78.1340 – 1990, 450-Watt, 230-volt self-ballasted Mercury lamps  
ANSI C78.1341 – 1990, 750-Watt, 120-volt self-ballasted Mercury lamps  
ANSI C78.1342 – 1990, 160-Watt, 120-volt self-ballasted Mercury lamps  
ANSI C78.1380 – 1988, 250-Watt, 120-volt self-ballasted Mercury lamps  
ANSI/IES RP-16-1996, Nomenclature and definitions for illuminating engineering  
IES LM20-1994, Approved method for photometric testing of reflector type lamps

## **3 Definitions**

### **3.1 BEAM AXIS**

The axis about which the light output flux is substantially symmetrical. In symmetrical beams, light flux is substantially symmetrical about the beam axis in planes through all rotational angles about the lamp and the beam axis. In asymmetrical beams, light flux is substantially symmetrical in two planes 90° from each other and through the beam axis.

The beam axis may or may not coincide with lamp axis through the lamp base or the lamp axis normal to the plane of any fixed points on the reflector.

### **3.2 CENTER BEAM INTENSITY (IC)**

The value of light flux intensity in candelas (cd) measured on the beam axis. See figures 1, 2 and A1.