

SENATE No. 2041

The Commonwealth of Massachusetts

In the Year Two Thousand Fourteen

An Act improving outdoor lighting and increasing dark-sky visibility.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Chapter 85 of the General Laws, as appearing in the 2012 Official Edition,
2 is hereby amended by adding the following 2 sections:

3 Section 38. As used in Section 39, the following words shall, unless the context clearly
4 requires otherwise, have the following meanings:

5 “Direct light”, light emitted by a fixture, whether from the light source, from a reflector,
6 or through a refractor

7 “Façade lighting”, permanent outdoor fixtures that are specifically intended to illuminate
8 the exterior surfaces of buildings or structures

9 “Fixture”, a complete lighting unit, including a light source together with the parts
10 designed to distribute the light, to position and protect the light source, and to connect the light
11 source to the power supply

12 “Fixture lumens”, total lumens emitted by a fixture

13 “Fully shielded fixture”, a fixture that emits no direct light above a horizontal plane
14 through the fixture’s lowest light-emitting part, in its mounted position

15 “Glare”, light emitted by a fixture that causes visual discomfort or reduced visibility

16 “Illuminance”, the luminous power incident per unit area of a surface

17 “Light trespass”, light that falls beyond the property it is intended to illuminate

18 “Lumen”, a standard unit of measurement of the quantity of light emitted from a source
19 of light

20 “Ornamental Roadway Lighting”, a roadway-lighting fixture that serves a decorative
21 function in addition to a roadway-lighting function and which has a historical period appearance
22 or decorative appearance.

23 “Parking-lot lighting”, permanent outdoor fixtures specifically intended to illuminate
24 uncovered vehicle-parking areas

25 “Part-night service”, a rate charged by a utility company to provide unmetered electricity
26 for permanent outdoor fixtures that operate for only a portion of each night’s dusk-to-dawn
27 cycle.

28 “Permanent outdoor fixture”, a fixture for use in an exterior environment installed with
29 mounting not intended for relocation

30 “Roadway lighting”, permanent outdoor fixtures specifically intended to illuminate
31 public roadways

32 “Sky glow”, scattered light in the atmosphere, caused by light directed upward or
33 sideways from fixtures, reducing one’s ability to view the natural night sky.

34 “State funds”, bond revenues or money appropriated or allocated by the General Court.

35 Section 39. (a) No state funds shall be used to install a new permanent outdoor fixture, or
36 to pay for the cost of operating such fixture, unless the following conditions are met:

37 (1) in the case of roadway lighting or parking-lot lighting; whether mounted to
38 poles, buildings, or other structures, the fixture is fully shielded.

39 (2) in the case of building-mounted fixtures not specifically intended for roadway
40 lighting, parking-lot lighting, or façade lighting, the fixture is fully shielded when its initial
41 fixture lumens is greater than 3000 lumens.

42 (3) in the case of façade lighting, the fixture is shielded to reduce glare, sky glow,
43 and light trespass to the greatest extent possible.

44 (4) in the case of ornamental roadway lighting fixtures, the fixture emits no more
45 700 lumens above a horizontal plane through the fixture’s lowest light-emitting part.

46 (5) for illumination by new permanent outdoor fixtures for applications covered in
47 Section 39(a), only the illuminance levels required for the intended purpose as defined in the
48 10th edition of The Lighting Handbook, published by the Illuminating Engineering Society
49 (IES), may be used. Where local city or county laws, ordinances, or regulations specify a

50 different requirement, only the illuminance levels required for the intended purpose by these
51 laws, ordinances, or regulations are to be used.

52 (6) in the case of roadway lighting unassociated with intersections of two or more
53 streets or highways, the Department of Transportation has determined that the purpose of the
54 fixture installation or replacement cannot be achieved by installation of reflectorized roadway
55 markers, lines, warning or informational signs, or other passive means.

56 (b) This section shall not apply:

57 (1) if a federal law, rule or regulation preempts state law;

58 (2) if the outdoor lighting fixture is used temporarily for emergency procedures or
59 for road repair;

60 (3) to navigational and other lighting systems necessary for aviation and nautical
61 safety;

62 (4) to lighting for an athletic playing area; provided, however, that the fixtures
63 used therefor shall be selected and installed so as to minimize glare, light trespass, and sky glow
64 outside the athletic playing area;

65 (5) if a compelling and bona fide safety or security need exists that cannot be
66 addressed by any other method;

67 (6) to the replacement of previously installed permanent outdoor fixtures that are
68 destroyed, damaged, or inoperative; have experienced electrical failure due to failed components;
69 or require standard maintenance;

70 (7) to lighting intended for tunnels and roadway underpasses; or

71 (8) to special events or situations that might require additional illumination,
72 including, but not limited to, the illumination of historic structures, monuments, or flags;
73 provided, however, that all such illumination be selected and installed to minimize glare, light
74 trespass, and sky glow to the greatest extent possible.

75 (c) No public utility company shall install a permanent outdoor fixture for roadway
76 lighting or parking-lot lighting if the cost of operating such fixture is paid for by state funds,
77 unless the provisions specified for such uses under Sections 39(a) and (b) are met.

78 (d) The Department of Energy Resources, in consultation with the Department of
79 Transportation, shall develop and promulgate regulations to implement and enforce this section,
80 including a system to ensure that the use of state funds complies with the requirements set forth
81 herein.

82 SECTION 2. The Department of Transportation shall:

83 (a) review and update warranting and other criteria for roadway lighting, to comply with
84 current standards, procedures, and accepted best practices;

85 (b) make a study of lighting operational costs, and develop recommendations on cost
86 reduction through replacement of existing fixtures with lower-wattage, fully shielded fixtures,
87 and by removal of unnecessary roadway lighting and installation of passive safety measures
88 where possible.;

89 (c) issue the first report of its findings and recommendations as required in this section to
90 the Department of Energy Resources on or before August 31, 2015, and annually thereafter.

91 SECTION 3. The Department of Public Utilities shall, subject to its ratemaking
92 authority, develop a rate for part-night service for unmetered roadway or parking-lot lighting to
93 apply to each new electric utility rate case submitted after January 1, 2015.

94 SECTION 4. This act shall take effect on November 1, 2014.