

**Proposed Substitute
Bill No. 425**

LCO No. 2965

AN ACT CONCERNING LED LIGHT POLLUTION IN THE STATE.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

1 Section 1. Section 4b-16 of the general statutes is repealed and the
2 following is substituted in lieu thereof (*Effective October 1, 2018*):

3 (a) As used in this section:

4 (1) "Fixture" means the assembly that holds a lamp and may include
5 an assembly housing, a mounting bracket or pole socket, a lamp
6 holder, a ballast, a reflector or mirror and a refractor or lens;

7 (2) "Restricted uplight luminaire" means a luminaire that allows no
8 direct light emissions above a horizontal plane through the luminaire's
9 lowest light-emitting part other than a 0.5 per cent maximum
10 incidental uplight from reflection off mounting hardware;

11 (3) "Glare" means direct light emitting from a luminaire that causes
12 reduced vision or momentary blindness;

13 (4) "Illuminance" means the level of light measured at a surface;

14 (5) "Lamp" means the component of a luminaire that produces the
15 light;

16 (6) "Light trespass" means light emitted by a luminaire that shines
17 beyond the boundaries of the property on which the luminaire is
18 located;

19 (7) "Lumen" means a unit of measurement of luminous flux;

20 (8) "Luminaire" means the complete lighting unit, including the
21 lamp and the fixture;

22 (9) "Permanent outdoor luminaire" means any luminaire or system
23 of luminaires that is outdoors and intended to be used for seven days
24 or longer; and

25 (10) "State funds" means any bond revenues or any money
26 appropriated or allocated by the General Assembly.

27 (b) Except as provided in subsection (c) of this section, no state
28 funds shall be used to install or replace a permanent outdoor luminaire
29 for lighting on the grounds of any state building or facility unless (1)
30 the luminaire is designed to maximize energy conservation and to
31 minimize light pollution, glare and light trespass, (2) the luminaire's
32 illuminance is equal to the minimum illuminance adequate for the
33 intended purpose of the lighting, and (3) for a luminaire with a rated
34 output of more than one thousand eight hundred lumens, such
35 luminaire is a restricted uplight luminaire.

36 (c) The provisions of subdivision (3) of subsection (b) of this section
37 shall not apply to luminaires located on the grounds of any
38 correctional institution or facility administered by the Commissioner of
39 Correction, required by federal regulations, required for storm
40 operation activities performed by the Department of Transportation,
41 required to illuminate either the state flag or the flag of the United
42 States or in a lighting plan for a Department of Transportation facility
43 where less than twenty-five per cent of the luminaires are to be
44 replaced. The Commissioner of Administrative Services, or the
45 commissioner's designee, may waive the provisions of subdivision (3)
46 of subsection (b) of this section with respect to luminaires on the
47 grounds of any other state building or facility when, after a request for
48 such a waiver has been made and reviewed, the commissioner or the
49 commissioner's designee determines that such a waiver is necessary
50 for the lighting application. Requests for such a waiver shall be made
51 to the commissioner or the commissioner's designee in such form as
52 the commissioner shall prescribe and shall include, without limitation,

53 a description of the lighting plan, a description of the efforts that have
54 been made to comply with the provisions of subdivision (3) of
55 subsection (b) of this section and the reasons such a waiver is
56 necessary. In reviewing a request for such a waiver, the commissioner
57 or the commissioner's designee shall consider design safety, costs and
58 other factors deemed appropriate by the commissioner or the
59 commissioner's designee.

60 (d) The provisions of this section shall not apply to the installation
61 or replacement of luminaires for which the Secretary of the Office of
62 Policy and Management (1) conducts a life-cycle cost analysis of one or
63 more luminaires that meet the requirements set forth in subsection (b)
64 of this section and one or more luminaires that do not meet such
65 requirements, and (2) certifies that a luminaire which meets such
66 requirements is not cost effective and is not the most appropriate
67 alternative based on the life-cycle cost analysis.

68 (e) Whenever state funds are utilized for the purchase of light-
69 emitting diode (LED) lamps, all other factors being equal, preference
70 shall be given to warmer, yellow-tinted LED lamps.

71 Sec. 2. Section 13a-110a of the general statutes is repealed and the
72 following is substituted in lieu thereof (*Effective October 1, 2018*):

73 (a) As used in this section:

74 (1) "Fixture" means the assembly that holds a lamp and may include
75 an assembly housing, a mounting bracket or pole socket, a lamp
76 holder, a ballast, a reflector or mirror, and a refractor or lens;

77 (2) "Full cutoff luminaire" means a luminaire that allows no direct
78 light emissions above a horizontal plane through the luminaire's
79 lowest light-emitting part;

80 (3) "Glare" means direct light emitting from a luminaire that causes
81 reduced vision or momentary blindness;

82 (4) "Illuminance" means the level of light measured at a surface;

83 (5) "Lamp" means the component of a luminaire that produces the
84 light;

85 (6) "Light trespass" means light emitted by a luminaire that shines
86 beyond the boundaries of the property on which the luminaire is
87 located;

88 (7) "Lumen" means a unit of measurement of luminous flux;

89 (8) "Luminaire" means the complete lighting system, including the
90 lamp and the fixture;

91 (9) "Municipality" has the same meaning as provided in subsection
92 (a) of section 7-148;

93 (10) "Municipal funds" means any bond revenue or any money
94 appropriated or allocated by a municipality;

95 (11) "Municipal road" means any public highway, road, street,
96 avenue, alley, driveway, parkway or place, under the control of a
97 municipality of the state, dedicated, appropriated or opened to public
98 travel;

99 (12) "Permanent outdoor luminaire" means any luminaire or system
100 of luminaires that is outdoors and intended to be used for seven days
101 or longer;

102 (13) "State funds" means any bond revenues or any money
103 appropriated or allocated by the General Assembly; and

104 (14) "State highway" has the same meaning as provided in
105 subsection (a) of section 13a-1.

106 (b) Except as provided in subsection (c) of this section, no state or
107 municipal funds shall be used to install or replace a permanent
108 outdoor luminaire for roadway lighting unless (1) the luminaire is
109 designed to maximize energy conservation and to minimize light
110 pollution, glare and light trespass, (2) the luminaire's illuminance is
111 equal to the minimum illuminance adequate for the intended purpose

112 of the lighting, (3) for a luminaire with a rated output of more than
113 1800 lumens used on state secondary highways, as defined in section
114 13a-14, and state special service highways, as defined in said section
115 13a-14, such luminaire is a full cutoff luminaire, (4) for a luminaire
116 with a rated output of more than 1800 lumens used on municipal
117 roads, such luminaire is a full cutoff luminaire, (5) for a luminaire with
118 a rated output of more than 1800 lumens used on state primary
119 highways, as defined in said section 13a-14, for which, in the opinion
120 of the Commissioner of Transportation, use of a full cutoff luminaire
121 shall not compromise the safety of the highway, increase the cost of the
122 lighting plan or lighting replacement for the highway or violate any
123 provision of federal law, such luminaire is a full cutoff luminaire, (6)
124 the Commissioner of Transportation determines that the purpose of
125 the lighting installation or replacement of lights on state highways
126 cannot be achieved by reducing the speed limit in the area to be
127 lighted or by installing reflectorized roadway markers, lines, warnings,
128 informational signs or other means of passive or reflective lighting,
129 and (7) the chief elected official of a municipality or such official's
130 designee, determines that for a municipal road the purpose of the
131 lighting installation or replacement cannot be achieved by reducing the
132 speed limit in the area to be lighted or by installing reflectorized
133 roadway markers, lines, warnings, informational signs or other means
134 of passive or reflective lighting.

135 (c) The Commissioner of Transportation or the commissioner's
136 designee may waive the provisions of subdivision (3) of subsection (b)
137 of this section when, after a request for such a waiver has been made
138 and reviewed, the commissioner or the commissioner's designee
139 determines that such a waiver is necessary for the lighting application.
140 Requests for such a waiver shall be made to the commissioner or the
141 commissioner's designee in such form as the commissioner shall
142 prescribe and shall include, without limitation, a description of the
143 lighting plan, a description of the efforts that have been made to
144 comply with the provisions of subdivision (3) of subsection (b) of this
145 section and the reasons such a waiver is necessary. In reviewing a
146 request for such a waiver, the commissioner shall consider design

147 safety, costs and other factors deemed appropriate by the
148 commissioner.

149 (d) The chief elected official of a municipality or said official's
150 designee may waive the provisions of subdivision (4) of subsection (b)
151 of this section when, after a request for such a waiver has been made
152 and reviewed, said official or said official's designee determines that
153 such a waiver is necessary for the lighting application. Requests for
154 such a waiver shall be made to said official or said official's designee in
155 such form as said official shall prescribe and shall include, without
156 limitation, a description of the lighting plan, a description of the efforts
157 that have been made to comply with the provisions of subdivision (4)
158 of subsection (b) of this section and the reasons such a waiver is
159 necessary. In reviewing a request for such a waiver, said official shall
160 consider design safety, costs and other factors deemed appropriate by
161 said official.

162 (e) No public utility company may install or replace a permanent
163 outdoor luminaire for roadway lighting, if the cost of operating such
164 luminaire is paid for by municipal funds, unless (1) the luminaire is
165 designed to maximize energy conservation and to minimize light
166 pollution, glare and light trespass, (2) the luminaire's illuminance is
167 equal to the minimum illuminance adequate for the intended purpose
168 of the lighting, and (3) for a luminaire with a rated output of more than
169 1800 lumens used on municipal roads, such luminaire is a full cutoff
170 luminaire. The chief elected official of a municipality or said official's
171 designee may waive the provisions of subdivision (3) of this subsection
172 when, after written notice from the public utility company thirty days
173 prior to the installation or replacement of said luminaire, said official
174 or said official's designee determines that a waiver is necessary for the
175 lighting application. Such notice shall be in such form as said official
176 shall prescribe and may include a description of the lighting plan and a
177 description of the efforts that have been made to comply with the
178 provisions of subdivision (3) of this subsection. Said official may
179 consider design safety, costs and other factors deemed appropriate by
180 said official.

181 (f) The provisions of this section shall not apply to the installation or
182 replacement of luminaires for which the Secretary of the Office of
183 Policy and Management (1) conducts a life-cycle cost analysis of one or
184 more luminaires which meet the requirements set forth in subsection
185 (b) of this section and one or more luminaires which do not meet such
186 requirements, and (2) certifies that a luminaire which meets such
187 requirements is not cost effective and is not the most appropriate
188 alternative based on the life-cycle cost analysis.

189 (g) Whenever state funds are utilized for the purchase of a light-
190 emitting diode (LED) lamp that is a part of a permanent outdoor
191 luminaire for roadway lighting, all other factors being equal,
192 preference shall be given to warmer, yellow-tinted LED lamps.

This act shall take effect as follows and shall amend the following sections:		
Section 1	<i>October 1, 2018</i>	4b-16
Sec. 2	<i>October 1, 2018</i>	13a-110a