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# A BILL FOR AN ACT

RELATING TO LIGHT POLLUTION.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. The legislature finds that the night sky is a  
2           tremendously valuable natural and cultural resource for the  
3           residents of Hawaii, and for visitors to Hawaii. The dark night  
4           sky has tremendous scientific value for astronomy, and is  
5           vitally important for endangered species in Hawaii including  
6           birds and turtles. Mauna Kea, on the island of Hawaii, is the  
7           best astronomical observatory site in the northern hemisphere,  
8           and arguably the best site on Earth. Haleakala on the island of  
9           Maui is also a world class astronomical observatory site.

10           The legislature further finds that unnecessary light  
11           pollution is threatening the dark night sky over the Hawaiian  
12           islands. This light pollution includes sky glow, energy waste,  
13           glare, light trespass, visual confusion, and environmental harm.  
14           The legislature finds that light can travel enormous distances  
15           through the Earth's atmosphere, and therefore does not respect  
16           county boundaries. Light pollution therefore spreads across the  
17           entire State and must be addressed using statewide legislation.



1 Furthermore, endangered species that are affected by light at  
2 night live on many of the Hawaiian islands.

3 The legislature further finds that many of the problems  
4 with light pollution that Hawaii faces are caused by improperly  
5 shielded lights. Poorly shielded lights direct energy straight  
6 into the atmosphere, where it is wasted. This light produces  
7 sky glow, which limits residents' ability to see stars. For  
8 example, in Honolulu only about the brightest twenty stars are  
9 visible, whereas about two thousand stars can be seen from a  
10 dark location. Poorly shielded lights also cause glare, which  
11 diminishes our ability to see at night. Poorly shielded lights  
12 also enter locations where the light is unwanted (light  
13 trespass), including bedrooms, making it difficult for residents  
14 to sleep. Excessive light in the sleeping environment has  
15 recently been linked to an increased incidence of breast cancer.  
16 Improperly shielded lights on the island of Kauai have led to  
17 many birds deaths, particularly of the endangered Newell's  
18 shearwater.

19 Act 161, Session Laws of Hawaii 2009, formed a temporary  
20 advisory committee to assist the department to develop a  
21 statewide starlight reserve strategy to preserve the quality of  
22 the night sky and its associated cultural, scientific,



1 astronomical, natural, and landscape-related values. The  
2 temporary advisory committee recommends the enactment of certain  
3 measures in the 2011 regular session to conserve energy and  
4 promote responsible use of light.

5 The purpose of this Act is to implement the recommended  
6 legislation of the temporary advisory committee pursuant to  
7 Act 161.

8 SECTION 2. Chapter 201, Hawaii Revised Statutes, is  
9 amended by adding a new section to be appropriately designated  
10 and to read as follows:

11 "§201- Starlight reserve strategy. (a) Beginning  
12 July 1, 2013, every new and replacement outdoor light fixture  
13 shall be fully shielded; provided that artificial light on  
14 shoreline and ocean waters shall be subject to section 205A-71.  
15 A light fixture is considered fully shielded when the light  
16 fixture is:

17 (1) Constructed so that no light is emitted above the  
18 horizontal plane; and  
19 (2) Installed in a manner that does not allow light to be  
20 directed above the horizontal plane.

21 (b) Lighting for outdoor athletic fields, courts, or  
22 tracks shall be fully shielded unless a registered electrical



1 engineer certifies that fully shielded lighting is impractical.

2 Where fully shielded fixtures are not used, acceptable

3 luminaries shall include those that are:

4       (1) Equipped with internal, external, or both, glare  
5       control louvers and are installed so as to limit  
6       direct up-light to less than five per cent of the  
7       total lumens exiting from the installed fixtures and  
8       minimize offsite light trespass; and

9       (2) Installed and maintained with minimum aiming angles of  
10       twenty-five degrees downward from the horizontal;  
11       provided that the aiming angle shall be measured from  
12       the axis of the luminaire maximum beam candlepower as  
13       certified by an independent testing agency.

14       (c) The following lighting shall be exempt from this  
15 section:

16       (1) Light sources of three thousand lumens or less;

17       (2) Emergency lighting used by police, firefighters,  
18       correctional personnel, or medical personnel for the  
19       duration of the emergency;

20       (3) Temporary outdoor lighting used for construction or  
21       major renovation of buildings or for highway  
22       improvements or construction;



1       (4) Temporary outdoor lighting used for night-time film  
2           production; and

3       (5) Navigational lights that are required for waterways  
4           and aircraft; and

5       (d) This section shall be considered to be supplemental to  
6       any county lighting ordinance and shall not be construed to  
7       supersede or modify county lighting ordinances or rules;  
8       provided that the ordinance is not less restrictive than this  
9       section."

10       SECTION 3. This Act does not affect rights and duties that  
11       matured, penalties that were incurred, and proceedings that were  
12       begun before its effective date.

13       SECTION 4. New statutory material is underscored.

14       SECTION 5. This Act shall take effect on July 1, 2011.

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**Report Title:**

Outdoor Lighting; Starlight Reserve

**Description:**

Requires every new and replacement outdoor light fixture to be fully shielded beginning on July 1, 2013, with certain exemptions. Defines fully shielded. (SD1)

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*

