

מהפכת התאורה והשלכותיה

תוקף האחריות של גופי התאורה
או
מה, בעצם, לא מספרים לנו....

ד"ר אינה ניסנבאום
איי בי אן מעבדות
תכנון תאורה ומדידות תאורה

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האגודה הישראלית לתאורה
אגודת מהנדסי חשמל ואלקטרוניקה
לשכת המהנדסים והאדריכלים





דרישות המפרט הטכני

- דרישות מספק גופי תאורה
- דרישות מיצרן גופי התאורה

- ISO,
- חוסן כלכלי,
- המשכיות בייצור,
- נסיון,
- איש קשר קבוע
- ועוד

- דרישות מגופי התאורה

תעודות בדיקה עדכנית ממעבדות מוסמכות

- במקרה שתעודת מכון התקנים לתקן רשמי (ת"י 20) מבוססת תעודת CB- יש לצרף תעודת CB (רכיבים, טמפרטורת הסביבה,

- IP

- ת"י 62471, RG

- ספקטרום

- CRI

- עוצמה

- נצילות

- EMC

- פוטומטריה

- 50,000 שעות עבודה בטמפרטורת סביבה של 35 מעלות, ...L80/F20

- אחריות



אחריות לגופי תאורה

- ג"ת סטנדרטיים: נורה/משנק/מצת
 - שנה , לפעמים - שנתיים

- גופי תאורה מבוססי לדים
 - עשרות לדים/דרייבר/SPD/...
 - 5 שנים
 - 10 שנים...

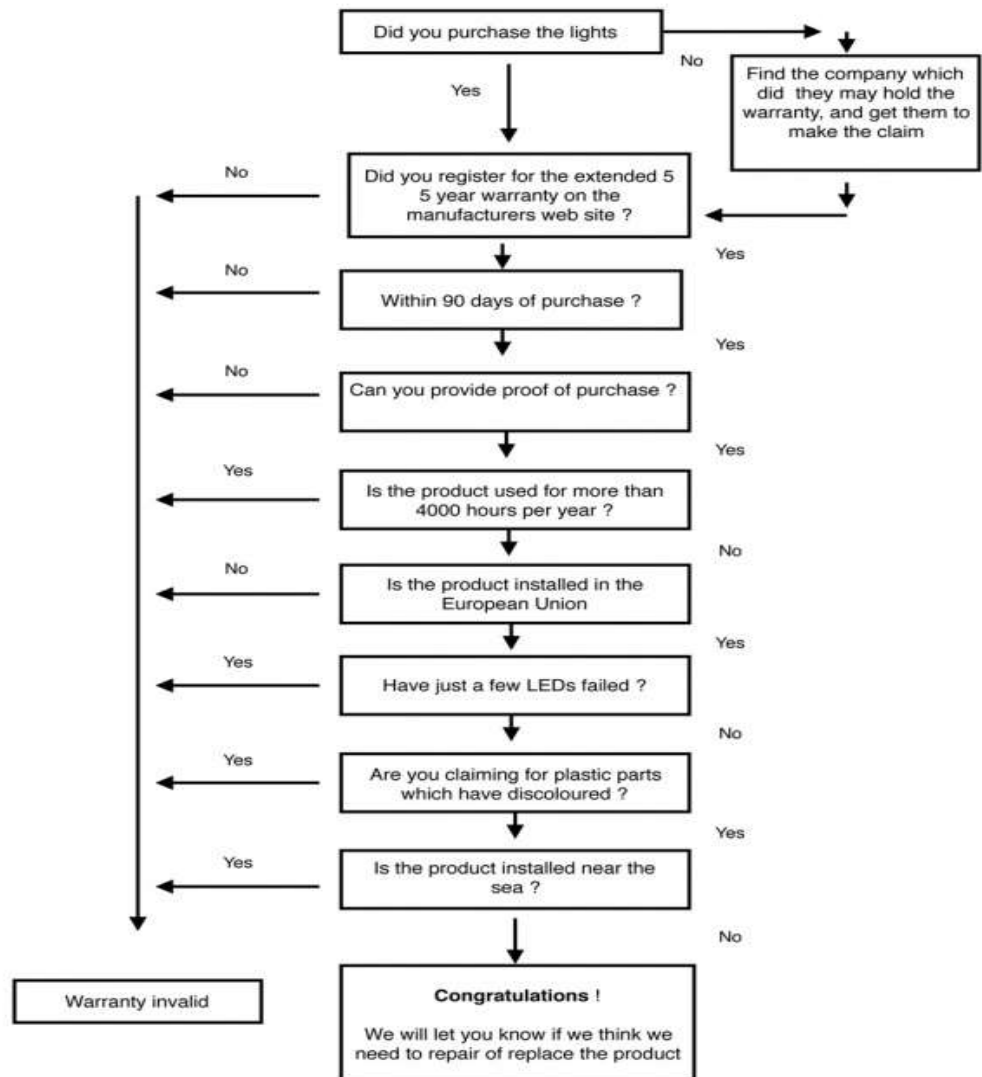


של מי אחריות לגופי תאורה?

- אחריות הספק
- אחריות היצרן
- מודלים טכנו- כלכליים (החוזה עם הקבלן) - אחריות הקבלן
- 5 שנים
- 10 שנים...

ובמקרה של תקלה...אחריות דוגמא-מאמר- נסיון מאנגליה

My LED lights have failed can I claim under the manufacturers warranty ?



מתוך: The flow chart lighting companies don't want you to see

<http://luxreview.com/article/2016/06/the-flow-chart-the-lighting-industry-doesn-t-want-you-to-see>

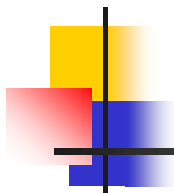
i- The Customer shall submit to [redacted] the purchase agreement and the corresponding invoice

2) The warranty must be activated within 30 (thirty) days from the invoice date by filling out the on - line

1- The defect - once it has been duly specified and its nature and scale have been duly shown - is reported in writing by the Customer to [redacted] within sixty (60) days from its discovery subject to forfeiture.

3- The Warranty shall be enabled only if the Customer registers on-line the details of the Product installation site and the data of the invoice and order on the Web site www.[redacted].com within 90 days from invoice date.

4- Should the Product be affected by defects covered by this Warranty and as long as the conditions under paragraphs 2 and 3 above are met, [redacted] היצק shall be free to decide in its absolute discretion whether to repair and/or replace the Product with the same or an equivalent product - subject to the technological progress that has taken place from the release of the original Product.

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- b. Defects caused by power disturbances (surges) of range or duration superior to:
- 1000 V between conductor and conductor (line and neutral)
 - 2000 V between conductor and ground (line/neutral to earth)
 - In accordance with IEC 61000-4-5:2005-11

Warranty shall be valid for defects higher than the nominal defect rate of 0.2%/1000 hours of use, except as otherwise stated in the technical specifications on the Product and its components and use.

n- The Products supplied are installed in Europe.

האחריות אינה חלה על שבר כתוצאה מנוק חיצוני או חיבור למתח יתר.

LED light engines: For greater certainty, a Product shall not be considered defective solely because individual LED components fail to emit light if the number of inoperable LED components is less than ten percent (10%) of the total number of LED components in the Product. LED light engines covered under

modification or alteration of the Product, or abnormal fluctuations in electrical power (including, without limitation, supply spikes, over-voltage, under-voltage or ripple current control systems). This limited warranty does not cover connectivity to smart grid networks. Smart grid system components, includ-

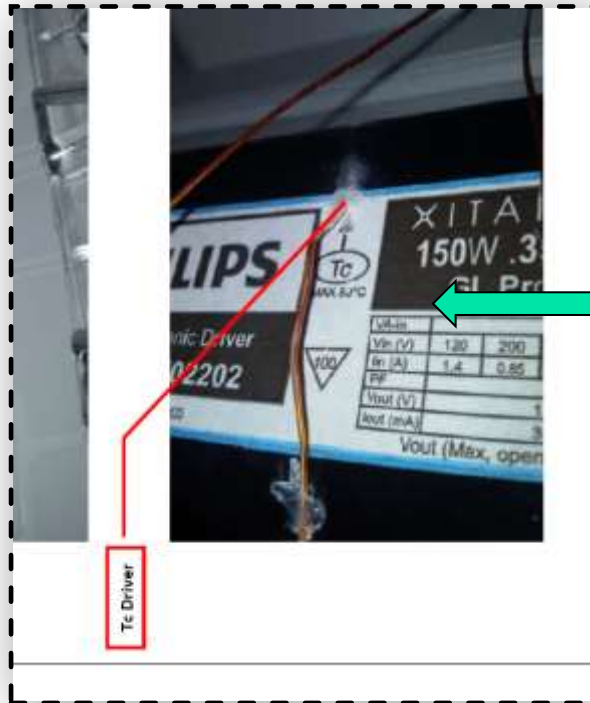
d. The room temperature threshold values (T_a) and the voltage values (V_{in}), including the relevant tolerances, do not exceed the limits and the product has not been exposed to mechanical loads that are not in conformity with the intended use.

7) Within the **10 (ten)-year period**, the warranty covers up to max. 40,000 working hours, corresponding on average to **11 (twelve) working hours/day**.

b. Faults caused by surges exceeding the parameters specified in the norm IEC 61000-4-5:2005 and IEC 61547:2009.

- Safety class I (type LP1), or safety class II (type LP2) products available. Relevant class is marked on the label of the lamp. If product is safety class I then the ground wire should be properly connected. For Safety class II there is not necessary to connect the ground wire for safety operation.
- To secure the lamp in case of lightning and storms and to achieve our warranty* you should install additional surgevoltage protector. You should follow the instructions of surge protector manufacturer. In case of class I, the ground resistance in the point of the installation have to be less than 0.5 ohm to allow the 10kA current interference flow to ground.

דוגמאות - TM21



T _{ref} (°C)	91.30
T _{ref} (K)	364.45
α _i	2.812E-08
Reported L70(9k) at 91.3°C (hours)	>51000

This warranty does not apply to:

•••

- additional control gears e.g. telemangement;

•••

- The Customer has consistently stored, installed, used and maintained the Product in compliance with **היצרן** specifications, guidelines, and instructions and, where applicable, IEC standards;

Maintenance:

Glass and Luminary cleaning have to be done depending on the pollution of the place of installation, typically every 2 - 4 years or before in accordance to the level of dirt.

IEC61547 - הפסקות חשמל רגעיות נפילות מתח-לסרוגין (לא מתמשכת)



Table 11 – Voltage dips – Test levels at input a.c. power ports

Characteristics	Test levels
Test voltage level	70 %
Number of periods	10

Table 12 – Voltage short interruptions – Test levels at input a.c. power ports

Characteristics	Test levels
Test voltage level	0 %
Number of periods	0,5

4.2 The performance criteria given hereafter apply to lighting equipment.

a) Performance criterion A

During the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.

b) Performance criterion B

During the test, the luminous intensity may change to any value. After the test, the luminous intensity shall be restored to its initial value within 1 min. Regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.

c) Performance criterion C

During and after the test, any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the mains supply and/or operating the regulating control.

דוגמא אחרונה

...that emit blue light (e.g., blue, royal blue, cyan, etc.) of the date of manufacture, Cree does not recommend (e.g., royal blue LED). White packaged LEDs (e.g., Cree's) are made of a blue LED die and a phosphor coating. The phosphor coating converts some of their total energy into red and green light, which combined with the blue light from the LED die produces white light. Cree's white LEDs are designed to minimize potential eye safety hazards from their white LED components. Other colors of LED components, such as green and red LED components, do not pose as significant of an eye safety risk. **Regardless of LED color, Cree advises users to not look directly at any operating LED component.** Further, Cree recommends that any manufacturer that is incorporating Cree® LED components into its

מטרות האגודה



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אגודת מהנדסי חשמל ואלקטרוניקה
לשכת המהנדסים והאדריכלים



- הפצת ידע הנדסת התאורה וידיעת המאור לתועלת המשתמשים והעוסקים בתאורה
- ייזום תקינה והשתתפות בוועדות להכנת תקנות, הנחיות, הוראות, ותקנים – שיתוף פעולה מקצועי עם הרשויות שבמדינת ישראל
- ארגון ימי עיון, כינוסים, ודיונים מקצועיים פתוחים
- מיסוד תכנון מתקני התאורה כמקצוע הדורש הכשרה מקצועית ייעודית

תודה רבה