

1. 「國際車輛安全法規調和推動規劃案」檢測基準草案討論會議(七)

2. 強制汽機車安裝晝行燈或車輛啟動即開啟頭燈設計研議

3. 檢測基準增訂光源/燈具規格標示相關規定

會議紀錄

- 一、 開會時間：中華民國 103 年 10 月 23 日星期四上午 9 時
- 二、 開會地點：台北基督教女青年會 901 會議室
- 三、 會議主席：許志成 處長
- 四、 會議記錄：黃聖智
- 五、 出席人員：如簽到表
- 六、 會議結論：

(一) 強制汽機車安裝晝行燈或車輛啟動即開啟頭燈設計研議，綜合意見如下：

- 1. 參考 EU 實施日期後一年，及汽機車同步實施，既有型式再給予兩年緩衝等因子，本項增修規定之實施日期為：新型式一 0 六年一月一日，既有型式一 0 八年一月一日，並依此函覆交通部。
- 2. 另建議交通部能於今(103)年公告，以利業界有兩年對應期程。

(二) 本次會議完成基準「LED(發光二極體)光源」草案討論，綜合修訂意見如下：

- 1. 原「5.2.4 試驗樣本之累計光通量應依 CIE84-1989 標準之 4.3 規定，對明確角度(Solid angle)錐體內之光度進行積分計算。」
修訂為「5.2.4 試驗樣本之累計光通量應依 CIE84-1989 標準之 4.3 規定，對立體角度(Solid angle)錐體內之光度進行積分計算。」
- 2. 目前本項以「可更換式」為實施對象，未來將視實際需要討論「不可換式」是否納入。

(三) 檢測基準增訂光源/燈具規格標示相關規定，綜合修訂意見如下：

- 1. 原「二十之二、反光識別材料」

「2.6.1.2 至少符合以下條件之” TOP” 方位標示」

修訂為「2.6.1.2 若非全方位性者，至少符合以下條件之” TOP”
方位標示」

2. 原「三十二之二、前霧燈」

「2.3.1.8.5 參考中心 …應位於在鏡片與前霧燈參考軸之交叉
點上」

修訂為「2.3.1.8.5 參考中心 …應位於透鏡與前霧燈參考軸之交叉
點上」

3. 關於光源模組之識別碼標示，請中心再確認其識別碼表示方式與
與視需要潤飾條文。

4. 關於「三十之二、氣體放電式頭燈」「4.6.1.6」所提箭頭指向，
請中心再確認其標示與視需要潤飾條文。

5. 本項增修規定之實施日期為：新型式一〇六年一月一日，既有型
式一〇八年一月一日。

七、 散會(上午 11 時)

項次	法規名稱	修訂法規內容	新增之法規項目	頁碼	UN 版本別	內容摘要
1	七十〇、晝行燈(草案)		◎	P.1	UN R87 00-S17 2013/08/20	參考 UN R87 00-S17 版，研擬晝行燈之燈具規範、光度、顏色及其他試驗要求等相關規定。

UN R87 DAYTIME RUNNING LAMPS 00-S17 2013/08/20 晝行燈

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
00-S17			
1. Scope This Regulation applies to daytime running lamps for vehicles of category L, M, N and T ¹ .		<u>七十〇、晝行燈(草案)</u> <u>1. 實施時間及適用範圍：</u> <u>1.1 中華民國一〇六年一月一日起，使用於 L、M 及 N 類車輛之新形式晝行燈及中華民國一〇八年一月一日起，使用於 L、M 及 N 類車輛之各型式晝行燈，應符合本項規定，且應使用符合本基準中「燈泡」規定之燈泡。</u> <u>1.2 除大客車及幼童專用車以外之車輛，申請少量車型安全審驗者，得免符合本項「晝行燈」規定。</u> <u>1.3 申請逐車少量車型安全審驗之車輛，得免符合本項「晝行燈」規定。</u>	
2. Definitions For the purposes of this Regulation: 2.1. "Daytime running lamp" means a lamp or an interdependent lamp		<u>2. 名詞釋義：</u> <u>2.1. 晝行燈 (Daytime running lamp, 簡稱 DRL)：指裝設於車輛前方之燈具或相依燈組系統，用以讓白天時</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
system facing in a forward direction used to make the vehicle more easily visible when driving during daytime;		<u>行駛之車輛更易被辨識。</u>	
2.3. "Daytime running lamps of different types" means lamps or an interdependent lamp system which differ in such essential respects as: (a) The trade name or mark; (b) The characteristics of the optical system, (levels of intensity, light distribution angles, category of light source, light source module, etc.); A change of the colour of the light source or the colour of any filter does not constitute a change of type.		<u>3. 晝行燈之適用型式及其範圍認定原則：</u> <u>3.1 廠牌相同。</u> <u>3.2 光學系統特性(光度、光分佈角度、光源類型、光源模組等)相同，然而光源顏色或濾鏡顏色之改變，不視為型式之改變。</u>	
6. General specifications 6.1. Each daytime running lamp shall conform to the specifications set forth in the paragraphs below. An interdependent lamp system shall meet the requirements when all its interdependent lamps are operated together. 6.2. Daytime running lamps shall be so designed and constructed that in normal use, despite the vibration to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Regulation.		<u>4. 一般規範：</u> <u>4.1 每一燈具需符合下述規範。</u> <u>當所有相依燈具一起作動時，相依燈組系統須符合規定。</u> <u>4.2 晝行燈之設計與製造應能於一般使用狀況下，如受到振動，持續滿足本基準相關功能與特性要求。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
6.3. In the case of light source modules, it shall be checked that: 6.3.1. The design of the light source module(s) shall be such as: (a) That each light source module can only be fitted in no other position than the designated and correct one and can only be removed with the use of tool(s); (b) If there are more than one light source module used in the housing for a device, light source modules having different characteristics cannot be interchanged within the same lamp housing. 6.3.2. The light source module(s) shall be tamperproof. 6.3.3. A light source module shall be so designed that regardless of the use of tool(s), it shall not be mechanically interchangeable with any replaceable approved light source. 6.4. Daytime running lamps, which are reciprocally incorporated with another function, using a common light source, and designed to operate permanently with an electronic light source control gear to regulate the intensity of the light emitted, are permitted.		<u>4.3 若為光源模組，應進行以下查檢：</u> <u>4.3.1 光源模組應如下設計：</u> <u>4.3.1.1 每個光源模組只能裝設在特定且正確位置，且只能使用工具拆下。</u> <u>4.3.1.2 若裝置本體內有一個以上光源模組，則特性不同之光源模組間不能互換。</u> <u>4.3.2 光源模組應具防擅改之設計。</u> <u>4.3.3 光源模組應具備不論是否使用工具，其皆不得有以可更換式光源進行更換之設計。</u> <u>4.4 晝行燈可與共用光源之其他功能以光學組成 (Reciprocally incorporated)方式結合，及永久地與照明亮度調節之電子式光源控制單元結合作動。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
6.5. In the case of replaceable light source(s): 6.5.1. Any category or categories of filament lamp(s) approved according to Regulation No.37 and/or Regulation No. 128 may be used, provided that no restriction on the use is made in Regulation No. 37 and its series of amendments in force at the time of application for type approval or in Regulation No. 128 and its series of amendments in force at the time of application for type approval. 6.5.2. The design of the daytime running lamp shall be such that the light source can be fixed in no other position but the correct one. 6.5.3. The light source holder shall conform to the characteristics given in IEC Publication 60061. The holder data sheet relevant to the category of light source used, applies.		<u>4.5 對於可更換式光源：</u> <u>4.5.1 應使用符合本基準中「燈泡」及/或「LED 光源」規定的光源種類。</u> <u>4.5.2. 晝行燈燈具設計應使光源僅可被固定在正確位置。</u> <u>4.5.3 光源座應符合 IEC60061 規範的特性。</u>	
7. Intensity of light 7.1.The luminous intensity of the light emitted by each daytime running lamp shall not be less than 400 cd in the axis of reference. 7.2. Outside the reference axis and within the angular fields defined in the arrangement diagram in Annex 6 to		<u>5. 光度標準：</u> <u>5.1 晝行燈沿參考軸方向之光度應不小於四 0 0 燭光(cd)。</u> <u>5.2 各晝行燈燈具照射角度應符合圖二，光度應符合以下：</u>	

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this Regulation, the intensity of the light emitted by each daytime running lamp must: 7.2.1. In each direction corresponding to the points in the table of standard light distribution reproduced in Annex 3 to this Regulation, be not less than the minimum specified in paragraph 7.1. above, multiplied by the percentage specified in the said table of the direction in question, and 7.2.2. Not exceed 1,200 cd in any direction the daytime running lamp is visible. 7.3. Moreover, throughout the field defined in the diagram in Annex 6, the intensity of the light emitted must not be less than 1.0 cd. 7.4. Light source failure 7.4.1. In the case of a daytime running lamp containing more than one light source, the daytime running lamp shall comply with the minimum intensity required when any one light source has failed and when all light sources are illuminated the maximum intensity shall not be exceeded. 7.4.2. In case of failure of any one light source in a single lamp containing more than one light source, one of the		<u>5.2.1 各角度光度值應不小於對應點百分比與 5.1 所述光度之乘積，如圖一所示。</u> <u>5.2.2 晝行燈自任何觀察方向量得之光度應不超過一二〇〇燭光。</u> <u>5.3 於 11.規定之範圍內，發光強度應不小於一・〇燭光。</u> <u>5.4 光源失效</u> <u>5.4.1 若晝行燈包含超過一個之光源，則在其任一光源失效時仍應滿足最小光度要求，且於所有光源點亮時不應超過最大亮度要求。</u> <u>5.4.2 若單燈包含超過一個之光源，則在任一光源失效時，應滿足下述其中之一要求：</u> <u>(a) 標準光度分佈點上之光度應至少</u>	

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following provisions shall apply: (a) The light intensity at the points of standard light distribution defined in Annex 3 shall be at least 80 per cent of the minimum intensity required, or (b) The light intensity in the axis of reference shall be at least 50 per cent of the minimum intensity required, provided that a note in the communication form states that the lamp is only for use on a vehicle fitted with an operating tell-tale. 7.4.3 A group of light sources, wired so that the failure of any one of them causes all of them to stop emitting light, shall be considered to be one light source.		<u>為最小光度值要求之百分之八〇，或</u> <u>(b) 若申請者宣告所搭配裝設之車輛有其作動識別標誌(Tell-tale)，則於參考軸之光度應至少為最小光度值要求之百分之五〇。</u> <u>5.4.3 若光源組合之電路接線設計，使得有任一光源失效會導致所有光源無法發光時，則其應視為單一光源。</u>	
8. Apparent surface The area of the apparent surface in the direction of the axis of reference of the daytime running lamp shall be not less than 25cm² and not more than 200cm².		<u>6. 外表面</u> <u>晝行燈沿參考軸方向之外表面面積不應小於二五平方公分且不應大於二〇〇平方公分。</u>	
9. Colour of light The colour of the light shall be white. It shall be measured under the conditions as prescribed in paragraph 10. below.		<u>7. 光源顏色</u> <u>應為白色，其測試條件如 8.所述。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
10. Test procedure 10.1. All measurements, photometric and colorimetric, when not supplied by an electronic light source control gear, shall be carried out with an uncoloured or coloured standard light source of the category prescribed for the daytime running lamp, supplied with the voltage: (a) In the case of filament lamps, that is necessary to produce the reference luminous flux required for that category of filament lamp; (b) In the case of LED light sources of 6.75 V, 13.5 V or 28.0 V; the luminous flux value produced shall be corrected. The correction factor is the ratio between the objective luminous flux and the mean value of the luminous flux found at the voltage applied. 10.2. In the case of a system that uses an electronic light source control gear being part of the daytime running lamp, all measurements, photometric and colorimetric, shall be made applying at the input terminals of the lamp a voltage of 6.75 V, 13.5 V or 28.0 V respectively. 10.3. In the case of a system that uses an		<u>8. 各項試驗測量條件</u> <u>8.1 對無電子式光源控制單元之光度和色度量測，應使用該<u>晝行燈裝置</u>設計指定光源類型之無色或有色標準光源，提供以下之電壓：</u> <u>(a) 若裝設燈泡，應調整至該類型燈泡產生參考光通量之電壓。</u> <u>(b) 若裝設六·七五伏特、一三·五伏特或二八伏特之LED光源，燈具產生之光通量必須矯正。矯正係數(Correction factor)為目標光通量(Objective luminous flux)與試驗電壓下平均光通量之比值。</u> <u>8.2 對使用電子式光源控制單元且其為<u>晝行燈燈具</u>之一部分者，供給燈具輸入端之電壓分別以六·七五伏特、一三·五伏特或二八伏特以進行所有(光度與色度)量測。</u> <u>8.3 對使用電子式光源控制單元，但其</u>	

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electronic light source control gear not being part of the daytime running lamp the voltage declared by the manufacturer shall be applied to the input terminals of the daytime running lamp. The test laboratory shall require from the manufacturer the light source control gear needed to supply the light source and the applicable functions. The voltage to be applied to the daytime running lamp shall be noted in the communication form in Annex 1 of this Regulation. 10.4. For any lamp except those equipped with filament lamps, the luminous intensities, measured after one minute and after 30 minutes of operation, shall comply with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated from the luminous intensity distribution after 30 minutes of operation by applying at each test point the ratio of luminous intensities measured at HV after one minute and after 30 minutes of operation. 10.5. The limits of the apparent surface in the direction of the reference axis of		<u>非為晝行燈燈具之一部分者，應以申請者宣告之電壓供給晝行燈燈具輸入並紀錄於試驗報告。</u> <u>8.4 對任何非使用燈泡之晝行燈燈具，其光度值於點燈一分鐘及三〇分鐘後進行測量應符合最小及最大值之規範。而對於點燈一分鐘後之光度分佈值，可由點燈三〇分鐘後之光度分佈值計算而得，其方式為先測量一分鐘後及三〇分鐘後之HV點光度並取得其比值，接著計算各應測點之光度值。</u> <u>8.5 應測量燈具於參考軸方向之外表面邊界。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
a light signalling device shall be determined.			
11. Heat resistance test 11.1. The daytime running lamp shall be subjected to a one-hour test of continuous operation following a warm-up period of 20 minutes. The ambient temperature shall be 23 deg. C +/- 5 deg.C. The light source used shall be a light source of the category specified for the daytime running lamp, and shall be supplied with a current at a voltage such that it gives the specified average power at the corresponding test voltage. However, for daytime running lamps equipped with nonreplaceable light sources (filament lamps and other), the test shall be made with the light sources present in the daytime running lamp, in accordance with paragraph 10.2. of this Regulation. 11.2. Where only the maximum power is specified, the test shall be carried out by regulating the voltage to obtain a power equal to 90 per cent of the specified power. The specified average or maximum power referred to above shall in all cases be chosen from the voltage range of 6, 12 or 24		<u>9. 耐熱試驗</u> <u>9.1 晝行燈燈具應於二〇分鐘暖機後進行連續一小時操作之檢測，環境溫度攝氏二三度正負五度，應使用該晝行燈指定之光源類型，並提供對應試驗電壓下指定平均功率之電流。</u> <u>對裝設不可更換式光源(燈泡或其他)之晝行燈燈具，則使用晝行燈燈具內既有光源，依 8.2 規定進行檢測。</u> <u>9.2 若僅指定最大功率，則檢測應以達此指定功率九〇％之電壓進行。前述之指定平均功率或指定最大功率應以六、一二或二四伏特之下所能取得最大值者；對裝設不可更換式光源(燈泡或其他)之晝行燈燈具，依 8.2 規定進行檢測。</u>	

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V at which it reaches the highest value; for daytime running lamps equipped with non-replaceable light sources (filament lamps and other) the test conditions set in paragraph 10.2. of this Regulation shall be applied. 11.3. After the daytime running lamp has been stabilized at the ambient temperature, no distortion, deformation, cracking or colour modification shall be perceptible. In case of doubt the intensity of light according to paragraph 7. above shall be measured. At that measurement the values shall reach at least 90 per cent of the values obtained before the heat resistance test on the same device.		<u>9.3 在晝行燈燈具穩定至環境溫度後，目視下應無扭曲、變形、裂紋或顏色變化之情況發生。對試驗後之光度值有疑義時，應依 5.規定進行量測，其值應至少為試驗前之九〇%。</u>	
Annex 3 Photometric measurements 1. When photometric measurements are taken, stray reflections shall be avoided by appropriate masking. 2. In the event that the results of measurements are challenged, measurements shall be taken in such way as to meet the following requirements: 2.1. The distance of measurement shall be such that the law of the inverse of the square of the distance is applicable:		<u>10. 配光量測</u> <u>10.1 應適當遮蔽以減少雜光反射。</u> <u>10.2 量測時，應以下列方式進行測試：</u> <u>10.2.1 量測距離應引用照度與距離之反平方定律。</u>	

增/修內容	原內容	修訂國內法規條文案	對應國內法規條文
2.2. The measuring equipment shall be such that the angle subtended by the receiver from the reference centre of the light is between 10' and 1 deg. : 2.3. The intensity requirement for a particular direction of observation shall be satisfied if the required intensity is obtained in a direction deviating by not more than one-quarter of a degree from the direction of observation. 3. In the case where the daytime running lamp may be installed on the vehicle in more than one or in a field of different positions the photometric measurements shall be repeated for each position or for the extreme positions in the field of the reference axis specified by the manufacturer. 4. Photometric measurement of daytime running lamps The photometric performance shall be checked: 4.1. For non-replaceable light sources (filament lamps or other): With the light sources present in the daytime running lamp, in accordance with paragraph 10. of this Regulation. 4.2. For replaceable light sources: When equipped with filament lamps at		<u>10.2.2 量測設備之受光器開孔角度自光束參考中心觀察應介於一 0 分與一度之間。</u> <u>10.2.3 光度觀察方向允許偏差一五分範圍內。</u> <u>10.3 若晝行燈可安裝於車輛之位置不只一處，則應於每一位置或是依據申請者指定之參考軸區域範圍內之各端點位置重複進行配光量測。</u> <u>10.4 晝行燈燈具之光度量測</u> <u>10.4.1 對不可更換或光源(燈泡或其他)之燈具： 以晝行燈燈具內光源，依 8.規定進行量測。</u> <u>10.4.2 對可更換式光源之燈具：</u>	

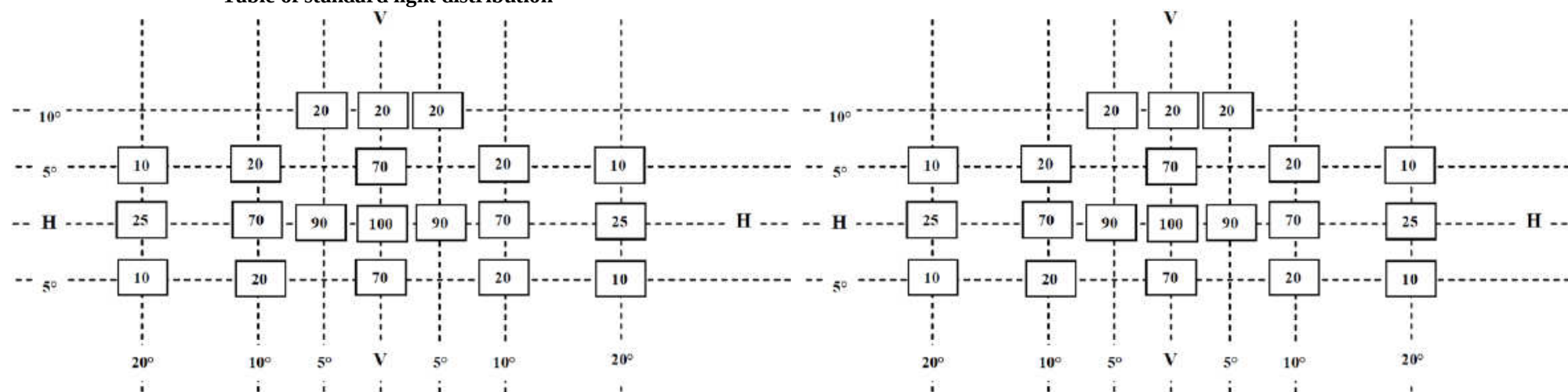
增/修內容	原內容	修訂國內法規條文案草案	對應國內法規條文
6.75 V, 13.5 V or 28.0 V, the luminous intensity values produced shall be corrected. For filament lamps the correction factor is the ratio between the reference luminous flux and the mean value of the luminous flux found at the voltage applied (6.75 V, 13.5 V or 28.0 V). For LED light sources the correction factor is the ratio between the objective luminous flux and the mean value of the luminous flux found at the voltage applied (6.75 V, 13.5V or 28.0 V). The actual luminous fluxes of each filament lamp used shall not deviate more than +/-5 percent from the mean value. Alternatively and in case of filament lamps only, a standard filament lamp may be used in turn, in each of the individual positions, operated*/ At its reference flux, the individual measurements in each position being added together. 4.3. For any daytime running lamp except those equipped with filament lamp(s), the luminous intensities, measured after one minute and after 30 minutes of operation, shall comply		<u>當燈具裝設六・七五伏特、一三・五伏特或二八伏特之燈泡光源，燈具產生之光度值必須矯正。燈泡之矯正係數為參考光通量與試驗電壓〈六・七五伏特、一三・五伏特或二八伏特〉下平均光通量之比值。</u> 對LED光源，矯正係數為目標光通量(objective luminous flux)與試驗電壓下〈六・七五伏特、一二・五伏特或二八伏特〉平均光通量之比值。 <u>每個燈泡光源之實際光通量不得與平均值相差百分之五以上。另外，對於燈泡，可用標準燈泡依序裝設於燈具的每個燈泡位置以參考通量操作，並將每個位置之量測值相加做為結果。</u> <u>10.4.3 對任何非使用燈泡之晝行燈，其光度值於點燈一分鐘及三〇分鐘後進行量測應符合最小及最大值之規範。而對於點燈一分鐘後之光度</u>	

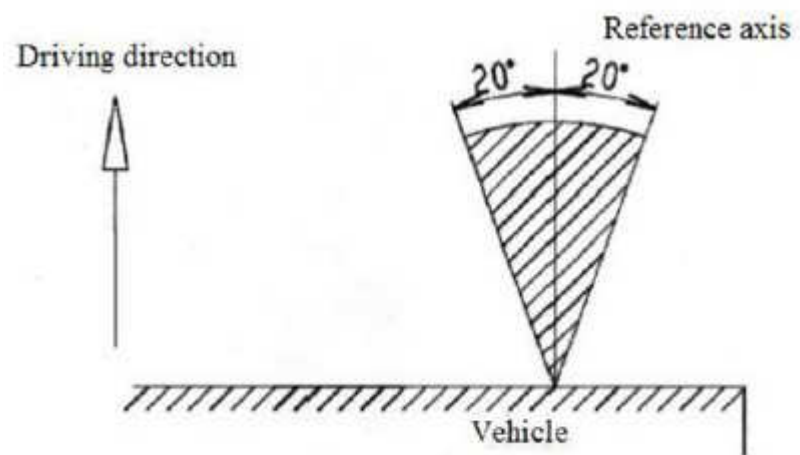
增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
with the minimum and maximum requirements. The luminous intensity distribution after one minute of operation can be calculated from the luminous intensity distribution after 30 minutes of operation by applying at each test point the ratio of luminous intensities measured at HV after one minute and after 30 minutes of operation. 5. Table of standard light distribution 5.1. The direction $H = 0$ deg. and $V = 0$ deg. corresponds to the reference axis. (On the vehicle, it is horizontal, parallel to the median longitudinal plane of the vehicle and oriented in the required direction of visibility). It passes through the centre of reference. The values shown in the table give, for the various directions of measurement, the minimum intensities as a percentage of the minimum required in the axis for each daytime running lamp (in the direction $H = 0$ deg. and $V = 0$ deg.). 5.2. Within the field of light distribution of paragraph 3. above schematically shown as a grid, the light pattern should be substantially uniform, i.e. in so far as the light intensity in each		<u>分布值，可由點燈三〇分鐘後之光度分佈值計算而得，其方式為先測量一分鐘後及三〇分鐘後之 HV 點光度並取得其比值，接著計算各應測點之光度值。</u> <u>10.5 標準光度分佈 (百分比)</u> <u>10.5.1 $H=0$ 度與 $V=0$ 度應對準參考軸 (其為水平、平行於車輛縱向中心面且朝目視方向)，且其通過參考中心。圖一所列為由各個方向量測晝行燈時，各對應點應達到之最小百分比(相對於 $H=0$ 度與 $V=0$ 度之最小值)。</u> <u>10.5.2 光線分佈區以格線示意，且光型應均勻以使在各對應點之光度符合最小之百分比。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
direction of a part of the field formed by the gird lines shall meet at least the lowest minimum value being shown on the gird lines surrounding the questioned direction as a percentage.			
Annex 6 Minimum angles required for light distribution in space In all cases, the minimum vertical angles of light distribution in space are 10 deg. above and 5 deg. below the horizontal for the daytime running lamp included in the Regulation. Minimum horizontal angles of light distribution in space:		11. 光分佈區內最小照射角度 於所有情況下，光分佈區內最小垂直照射角度為 <u>晝行燈 DRL 裝置水平線上方一〇度、下方五度。</u> 光分佈區內最小水平照射角度如圖二所示。	

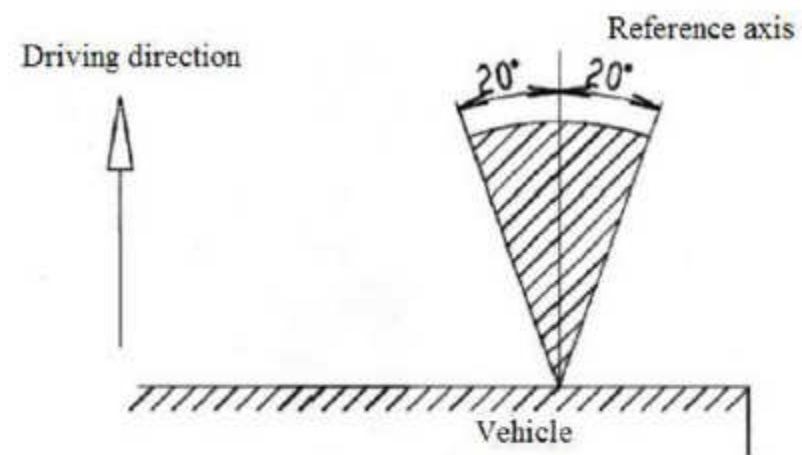
Annex 3

Table of standard light distribution





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行車方向

參考軸

車輛

圖二：最小水平照射角度

項次	法規名稱	修訂法規內容	新增之法規項目	頁碼	UN 版本別	內容摘要
1	七十〇、LED (發光二極體)光源(草案)		◎	P.1	UN R128 00-S2 2013/11/13	1.參考 UN R128 00-S2 版，研擬用於動力驅動車輛及其拖車的標誌燈具之發光二極體(LED)光源規定。

UN R128 LED 00-S2 2013/11/13 LED(發光二極體)光源

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
00-S2			
1. Scope This Regulation applies to LED light sources shown in Annex 1 and intended for use in approved signalling lamp units of power-driven vehicles and of their trailers.		<u>七十〇、LED (發光二極體)光源(草案)</u> 1. 實施時間及適用範圍： <u>中華民國〇年〇月〇日起，M、N、O 及 L 類車輛其車輛型式安全審驗相關燈具所使用之新型式 LED 光源，及中華民國〇年〇月〇日起 M、N、O 及 L 類車輛其車輛型式安全審驗相關燈具所使用之各型式 LED 光源，若為可更換式，則應符合本項規定。</u>	
3. Technical requirements 3.1. Definitions 3.1.1. Rated voltage: voltage (in volts) marked on the LED light source; 3.1.2. Test voltage(s): voltage(s) or voltage range(s), at the LED light sources terminals for which the electrical and photometric characteristics of the LED light sources are intended and are to be		2. 名詞釋義 2.1. 額定電壓: LED 光源上標記之輸入電壓。 2.2 試驗電壓: 於 LED 光源之端子，對 LED 光源之電性及光度特性進行試驗之電壓。	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
tested. 3.1.3. Objective values: Design value of an electrical or photometric characteristic. To be achieved, within the specified tolerances, when the LED light source is energized at relevant test voltage. 3.1.4. Standard (etalon) LED light source: Special LED light source used for the testing of lighting and light-signalling devices. It has reduced tolerances for dimensional, electrical and photometric characteristics as specified on the relevant data sheet. Standard LED light sources are specified in only one voltage rating for each category. 3.1.5. Reference axis: an axis defined with reference to the cap and to which certain dimensions of the LED light sources are referred; 3.1.6. Reference plane: a plane defined with reference to the cap perpendicular to the reference axis and to which certain dimensions of the LED light sources are referred. 3.1.7. Light centre: a point on the reference axis at a defined distance from the reference plane that		<u>2.3 目標值：於試驗電壓作動 LED 光源，而使達到在指定之公差內之電性或光度特性設計值。</u> <u>2.4 標準 LED 光源：用於照明裝置及燈光信號裝置之特殊 LED 光源。具有對應相關資料表(data sheet)中所列出之較小公差尺寸、電性及光度特性，且每一類型標準 LED 光源皆只有指定一個額定電壓。</u> <u>2.5 參考軸：以燈帽(Cap)為基準而定義之軸，並作為一般 LED 光源之部分尺寸之基準。</u> <u>2.6 參考面：以燈帽(Cap)為基準而定義之平面，其垂直於基準軸，並作為一般 LED 光源之部分尺寸之基準。</u> <u>2.7 發光中心：可見光線發出之標稱原點，其位於參考軸上，相對於參考面之一定距離處。</u> <u>2.8 發光中心長度：指參考面與發光中心間之距離。</u>	

增/修內容	原內容	修訂國內法規條文案草案	對應國內法規條文
represents the nominal origin of the visible radiation emitted. 3.1.8. Light centre length: the distance between the reference plane and the light centre 3.1.9. Viewing axis on to the LED light source: an axis through the light centre at defined polar and azimuthal angle used to characterize photometrical properties of the LED light source. 3.1.10. Apparent light emitting area: area that contains the (apparent) element of visible radiation when observed under a certain viewing axis. The apparent light emitting area is defined in a plane that contains the light centre and that is perpendicular to the corresponding viewing axis. 3.1.11. Normalized luminous intensity: luminous intensity divided by the luminous flux of the light source in order to characterize the angular radiation pattern of the LED light source. 3.1.12. Cumulative luminous flux: luminous flux emitted by the light source under operating conditions, within a cone enclosing the specified solid angle and centred on the		<u>2.9 LED 光源觀測軸：指穿過發光中心之特定極座標和方位角之軸線，用以表示其光學特性。</u> <u>2.10 外表面發光區域(Apparent light emitting area)：包括發出可見光線之外表元件區域，該可見光線係於某一觀測軸觀測得。此區域為一個包括發光中心之平面，且垂直於相對應之觀測軸。</u> <u>2.11 正規化發光強度(Normalized luminous intensity)：係指 LED 光源發光強度除以光通量，其被運用於角輻射圖(Angular radiation pattern)之呈現。</u> <u>2.12 累計光通量(Cumulative luminous flux)：指操作條件下之 LED 光源於特定錐體所圍成空間內所發出之光通量；該特定錐體中心點位於參考軸上且涵蓋特定角度。</u> <u>2.13 LED 光源：指一種或多種半導體材料固態接面(Solid state junction)</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
reference axis1. 3.1.13. Light emitting diode (LED) light source: a light source where the element for visible radiation is one or more solid state junctions producing injection-luminescence and/or fluorescence.		<u>之可見光發出元件，其產生注入式發光及/或螢光。</u>	
2. Administrative provisions Definitions 2.1.2.1. Trade name or mark; LED light sources bearing the same trade name or mark but produced by different manufacturers are considered as being of different types. LED light sources produced by the same manufacturer differing only by the trade name or mark may be considered to be of the same type. 2.1.2.2. Light source design, in so far as these differences affect the optical results; 2.1.2.3. Rated voltage.		<u>3. LED 光源之適用型式及其範圍認定原則：</u> <u>3.1 廠牌相同。廠牌相同而製造者不同，仍視為非相同型式。</u> <u>3.2 光源類型設計資料(其變化未影響光學結果) 相同。</u> <u>3.3 額定電壓相同。</u>	
3. Technical requirements 3.2. General specifications 3.2.1. Each sample submitted shall conform to the relevant specifications of this Regulation. 3.2.2. LED light sources shall be so designed as to be and to remain in good working order when in normal		<u>4. 技術要求</u> <u>4.1 外觀檢視：</u> <u>4.1.1 本基準燈具使用之可更換式 LED 光源應符合本項規定。</u> <u>4.1.2 LED 光源之製造或設計應無缺失，並於正常使用狀態下，維持其良好工作狀態。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
use. They shall moreover exhibit no fault in design or manufacture. 3.2.3. LED light sources shall exhibit no scores or spots on their optical surfaces which might impair their efficiency and their optical performance. 3.2.4. LED light sources shall be equipped with standard caps complying with the cap data sheets of IEC Publication 60061 as specified on the individual data sheets of Annex 1. 3.2.5. The cap shall be strong and firmly secured to the rest of the LED light source. 3.2.6. To ascertain whether LED light sources conform to the requirements of paragraphs 3.2.3. to 3.2.5. above, a visual inspection, a dimension check and, where necessary, a trial fitting into the holder as specified in IEC publication 60061 shall be carried out. 3.2.7. The solid state junction(s) shall be the only element(s) of the LED light source that generate and emit light, either directly or via fluorescence-based conversion, when energized. 3.3. Tests 3.3.1. LED light sources shall first be		<u>4.1.3 發光表面不應有影響其效能及光學性能之刮痕或斑點。</u> <u>4.1.4 LED 光源之燈帽應符合 IEC60061 規範之特性及其所適用 LED 光源類型。</u> <u>4.1.5 燈帽之設計應堅固，並牢固於 LED 光源座。</u> <u>4.1.6 為確認 LED 光源符合上述 4.1.3 至 4.1.5 之規定，應對其進行目視檢查、尺寸檢查，必要時依據 IEC60061 規範之特性進行底座試裝。</u> <u>4.1.7 半導體材料之固態接面應是 LED 光源直接或經過螢光轉換而發光之唯一元件。</u> <u>4.2 性能試驗</u> <u>4.2.1 LED 光源應於試驗電壓下老化</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
aged at their test voltage for at least forty-eight hours. For multi-function LED light sources, each function shall be aged separately.		<u>四八小時。多功能 LED 光源者，各項功能應分別進行此程序。</u>	
3.3.2. Unless otherwise specified, electrical and photometric measurements shall be carried out at the relevant test voltage(s).		<u>4.2.2 除另有規定，電性及光度特性量測應以相關試驗電壓進行。</u>	
3.3.3. Electrical measurements as specified in Annex 4 shall be carried out with instruments of at least class 0.2 (0.2 per cent full scale accuracy).		<u>4.2.3 依規定 5.規定執行之電性量測，其檢測儀器之準度應至少為 0.2 級 (指準度為全刻度之 0.2%)。</u>	
3.4. Position and dimensions of apparent light emitting area		<u>4.3 外表面發光區域之位置與尺寸：</u>	
3.4.1 The position and dimensions of the apparent light emitting area shall conform to the requirements as given on the relevant data sheet of Annex 1.		<u>4.3.1 外表面發光區域之位置與尺寸應符合相關資料表(data sheet)之規定。</u>	
3.4.2. The measurement shall be made after ageing the LED light source according to paragraph 3.3.1.		<u>4.3.2 應於依據 4.2.1 老化 LED 光源後進行量測。</u>	
3.5. Luminous flux		<u>4.4 光通量</u>	
3.5.1. When measured according to the conditions specified in Annex 4, the luminous flux shall be within the limits given on the relevant data sheet of Annex 1.		<u>4.4.1 依規定 5.之條件進行量測時，應符合該類型光源相關資料表之光通量限制值。</u>	
3.5.2. The measurement shall be made after ageing the LED light source according to 3.3.1.		<u>4.4.2 應於依據 4.2.1 老化 LED 光源後進行量測。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
3.6. Normalized luminous intensity distribution / cumulative luminous flux distribution 3.6.1. When measured according to the test conditions specified in Annex 4, the normalized luminous intensity distribution and/or cumulative luminous flux distribution shall be within the limits given on the relevant data sheet of annex 1. 3.6.2. The measurement shall be made after ageing the LED light source according to paragraph 3.3.1. 3.7. Colour 3.7.1. The colour of the light emitted by the LED light sources shall be specified on the relevant data sheet. The definitions of the colour of the light emitted given in Regulation No. 48 and its series of amendments in force at the time of application for type approval shall apply to this regulation. 3.7.2. The colour of the light emitted shall be measured by the method specified in Annex 4. Each measured value shall lie within the required tolerance area. 3.7.3. Moreover, in the case of LED light sources emitting white light,		<u>4.5 正規化光度分佈/累計光通量分佈 (cumulative luminous flux distribution)</u> <u>4.5.1 依據規定 5.之條件進行量測時，正規化光度分佈及累計光度分佈應符合該類型光源相關資料表之限制值。</u> <u>4.5.2 應於依據 4.2.1 老化 LED 光源後進行量測。</u> <u>4.6 顏色</u> <u>4.6.1 LED 光源之發光顏色應符合相關資料表(data sheet)之規定。車輛安全檢測基準項目「車輛燈光與標誌檢驗規定」之發光顏色定義應適用於本項法規。</u> <u>4.6.2 發光顏色應依規定 5.進行量測，每個量測值應在要求之公差範圍內。</u> <u>4.6.3 若 LED 光源發光顏色為白色，則光源之紅色最小含量應使下式成立：</u>	

增/修內容	原內容	修訂國內法規條文案草案	對應國內法規條文				
the minimum red content of the light shall be such that: $k_{red} = \frac{\int_{\lambda=610\text{ nm}}^{780\text{ nm}} E_e(\lambda)V(\lambda)d\lambda}{\int_{\lambda=380\text{ nm}}^{780\text{ nm}} E_e(\lambda)V(\lambda)d\lambda} \geq 0.05$ where: Ee(lambda) (unit: W) is the spectral distribution of the irradiance; V(lambda) (unit: 1) is the spectral luminous efficiency; lambda (unit: nm) is the wavelength. This value shall be calculated using intervals of one nanometer. 3.8. UV-radiation The UV-radiation of the LED light source shall be such that the LED light source is of the low UV type complying with: $k_{UV} = \frac{\int_{\lambda=250\text{ nm}}^{400\text{ nm}} E_e(\lambda)S(\lambda)d\lambda}{k_m \int_{\lambda=380\text{ nm}}^{780\text{ nm}} E_e(\lambda)V(\lambda)d\lambda} \leq 10^{-5} \text{ W / lm}$ where: S(lambda)(unit: 1) is the spectral weighting function; km = 683 lm/W is the maximum value of the luminous efficacy of radiation. (For definitions of the other symbols		$k_{red} = \frac{\int_{\lambda=610\text{ nm}}^{780\text{ nm}} E_e(\lambda)V(\lambda)d\lambda}{\int_{\lambda=380\text{ nm}}^{780\text{ nm}} E_e(\lambda)V(\lambda)d\lambda} \geq 0.05$ 其中: <u>Ee(λ) [W] 輻射光(Irradiance)之光譜分布</u> <u>V(λ)[1] 光譜發光效能</u> <u>λ [nm] 波長</u> <u>此值應使用一奈米之間距計算。</u> <u>4.7 紫外線輻射：LED 光源應為低紫外線之型式，並應使下式成立：</u> $k_{UV} = \frac{\int_{\lambda=250\text{ nm}}^{400\text{ nm}} E_e(\lambda)S(\lambda)d\lambda}{k_m \int_{\lambda=380\text{ nm}}^{780\text{ nm}} E_e(\lambda)V(\lambda)d\lambda} \leq 10^{-5} \text{ W / lm}$ 其中 <u>S(lambda)為光譜權變函數[1]</u> <u>Km 為輻射常數 683 lm/W</u> <u>此值應使用一奈米之間距計算。</u> <u>應依下表對應之數值 S(lamda)予以加權得其紫外線輻射：</u> <table border="1"> <tr> <td><u>lambda</u></td><td><u>S(lambda)</u></td><td><u>lambda</u></td><td><u>S(lambda)</u></td></tr> </table>	<u>lambda</u>	<u>S(lambda)</u>	<u>lambda</u>	<u>S(lambda)</u>	
<u>lambda</u>	<u>S(lambda)</u>	<u>lambda</u>	<u>S(lambda)</u>				

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文																																																																																																																																				
see paragraph 3.7.3. above). This value shall be calculated using intervals of one nanometer. The UV-radiation shall be weighted according to the values as indicated in the Table below: <table border="1"> <thead> <tr> <th>lambda</th><th>S(lambda)</th><th>lambda</th><th>S(lambda)</th></tr> </thead> <tbody> <tr><td>250</td><td>0.430</td><td>330</td><td>0.00041</td></tr> <tr><td>255</td><td>0.520</td><td>335</td><td>0.00034</td></tr> <tr><td>260</td><td>0.650</td><td>340</td><td>0.00028</td></tr> <tr><td>265</td><td>0.810</td><td>345</td><td>0.00024</td></tr> <tr><td>270</td><td>1.000</td><td>350</td><td>0.00020</td></tr> <tr><td>275</td><td>0.960</td><td>355</td><td>0.00016</td></tr> <tr><td>280</td><td>0.880</td><td>360</td><td>0.00013</td></tr> <tr><td>285</td><td>0.770</td><td>365</td><td>0.00011</td></tr> <tr><td>290</td><td>0.640</td><td>370</td><td>0.000090</td></tr> <tr><td>295</td><td>0.540</td><td>375</td><td>0.000077</td></tr> <tr><td>300</td><td>0.300</td><td>380</td><td>0.000064</td></tr> <tr><td>305</td><td>0.060</td><td>385</td><td>0.000053</td></tr> <tr><td>310</td><td>0.015</td><td>390</td><td>0.000044</td></tr> <tr><td>315</td><td>0.003</td><td>395</td><td>0.000036</td></tr> <tr><td>320</td><td>0.001</td><td>400</td><td>0.000030</td></tr> <tr><td>325</td><td>0.00050</td><td></td><td></td></tr> </tbody> </table> 3.9. Standard LED light sources Additional requirements for standard (etalon) LED light sources are given on the relevant data sheets of Annex 1.	lambda	S(lambda)	lambda	S(lambda)	250	0.430	330	0.00041	255	0.520	335	0.00034	260	0.650	340	0.00028	265	0.810	345	0.00024	270	1.000	350	0.00020	275	0.960	355	0.00016	280	0.880	360	0.00013	285	0.770	365	0.00011	290	0.640	370	0.000090	295	0.540	375	0.000077	300	0.300	380	0.000064	305	0.060	385	0.000053	310	0.015	390	0.000044	315	0.003	395	0.000036	320	0.001	400	0.000030	325	0.00050				<table border="1"> <tbody> <tr><td>250</td><td>0.430</td><td>330</td><td>0.00041</td></tr> <tr><td>255</td><td>0.520</td><td>335</td><td>0.00034</td></tr> <tr><td>260</td><td>0.650</td><td>340</td><td>0.00028</td></tr> <tr><td>265</td><td>0.810</td><td>345</td><td>0.00024</td></tr> <tr><td>270</td><td>1.000</td><td>350</td><td>0.00020</td></tr> <tr><td>275</td><td>0.960</td><td>355</td><td>0.00016</td></tr> <tr><td>280</td><td>0.880</td><td>360</td><td>0.00013</td></tr> <tr><td>285</td><td>0.770</td><td>365</td><td>0.00011</td></tr> <tr><td>290</td><td>0.640</td><td>370</td><td>0.000090</td></tr> <tr><td>295</td><td>0.540</td><td>375</td><td>0.000077</td></tr> <tr><td>300</td><td>0.300</td><td>380</td><td>0.000064</td></tr> <tr><td>305</td><td>0.060</td><td>385</td><td>0.000053</td></tr> <tr><td>310</td><td>0.015</td><td>390</td><td>0.000044</td></tr> <tr><td>315</td><td>0.003</td><td>395</td><td>0.000036</td></tr> <tr><td>320</td><td>0.001</td><td>400</td><td>0.000030</td></tr> <tr><td>325</td><td>0.00050</td><td></td><td></td></tr> </tbody> </table> 4.8 標準 LED 光源: 標準 LED 光源應符合其對應光源類型之相關資料表規格。	250	0.430	330	0.00041	255	0.520	335	0.00034	260	0.650	340	0.00028	265	0.810	345	0.00024	270	1.000	350	0.00020	275	0.960	355	0.00016	280	0.880	360	0.00013	285	0.770	365	0.00011	290	0.640	370	0.000090	295	0.540	375	0.000077	300	0.300	380	0.000064	305	0.060	385	0.000053	310	0.015	390	0.000044	315	0.003	395	0.000036	320	0.001	400	0.000030	325	0.00050			
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Annex 4

Method of measurement of electrical and photometrical characteristics

Light sources of all categories with integrated heatsink shall be measured at ambient temperature of (23 +/-2) deg. C in still air. For these measurements the minimum free space as defined in the data sheets shall be maintained. Light sources of all categories with definition of a temperature Tb shall be measured by stabilising the Tb point at the specific temperature defined on the category data sheet.

1. Luminous flux

1.1. A luminous flux measurement using an integrating method shall be made

(a) In case of an integrated heatsink after 1 minute and after 30 minutes of operation or

(b) After stabilisation of the temperature at the Tb point.

1.2. The luminous flux values, as measured after

(a) 30 minutes, or

(b) Stabilisation of temperature Tb

Shall comply with the minimum and maximum requirements.

In case of (a) this value shall be in between 100 per cent and 80 per cent of the value measured after 1 minute.

1.3. Measurements have to be carried out at relevant test voltage and at the minimum and maximum values of the relevant voltage range. Unless specified more tightly on the data sheet the following deviation of the luminous flux at the tolerance interval limits shall not be exceeded.

Rated voltage	Min voltage	Max voltage
6	6.0	7.0
12	12.0	14.0
24	24.0	28.0
Corresponding luminous flux tolerance*	+/-30%	+/-15%

5. 電性和光度特性之量測方法

各類型具有整合式散熱器之光源，應於環境溫度攝氏二三(正負二)度且周圍無空氣流動之條件下進行量測。量測應於相關資料表中定義之最小可用空間進行。

具溫度 Tb 點定義之各類型光源，應於其穩定 Tb 點至相關資料表中規定溫度後進行。

5.1 光通量

5.1.1 應使用積分方法，於下述情況進行量測：

(a) 為整合式散熱器者，於一分鐘後及三〇分鐘後，或

(b)穩定溫度於 Tb 點後。

5.1.2 下述情況所得之光通量量測值

(a)三〇分鐘後，或

(b)穩定溫度至 Tb 點後

5.1.2.1 應符合該類型光源之最小值及最大值要求。

5.1.2.2 上述情況(a)之光通量，應為一分鐘後量測值之百分之八〇至百分之百之間。

5.1.3 應於相關試驗電壓，及其相關電壓範圍之最小值予最大值進行量測。除非其相關資料表另有指定較嚴苛條件，光通量變異不應超過下表所列。

<u>額定電壓</u>	<u>最小電壓</u>	<u>最大電壓</u>
<u>6</u>	<u>6.0</u>	<u>7.0</u>
<u>12</u>	<u>12.0</u>	<u>14.0</u>
<u>24</u>	<u>24.0</u>	<u>28.0</u>
<u>對應之光通量公差*</u>	<u>正負百分之三〇</u>	<u>正負百分之十五</u>

* The maximum luminous flux deviation at the tolerance limits is calculated by using the measured flux at test voltage as reference. In between test voltage and voltage range limits the luminous flux behaviour shall be substantially uniform.

2. Normalized luminous intensity/ cumulative luminous flux

2.1. The luminous intensity measurements shall be started after

- a) 30 minutes of stabilization time or
- b) Stabilisation of temperature Tb at the value given in the relevant data sheet.

2.2. Measurements have to be carried out at relevant test voltage.

2.3. Normalized luminous intensity of a test sample is calculated by dividing the luminous intensity distribution as measured under paragraph 2.1. of this annex by the luminous flux as determined after 30 minutes under paragraph 1.2. of this annex.

2.4. Cumulative luminous flux of a test sample is calculated according to CIE publication 84-1989, section 4.3 by integrating the luminous intensity within a cone enclosing a solid angle.

3. Colour

The colour of the light emitted as measured under the same conditions as described paragraph in 1.1. of this annex shall both be within the required colour boundaries.

4. Power consumption

4.1. A power consumption measurement shall be made under the same conditions as described in paragraph 1.1 of this annex using the requirements of paragraph 3.3.3. of this Regulation.

4.2. Power consumption measurements shall be carried out at relevant test voltage.

4.3. Values obtained shall comply with the minimum and maximum requirements of the relevant data sheet.

* 以試驗電壓測得之光通量為基準，計算出最大光通量變異。於試驗電壓和電壓範圍限制值之間之光通量應均一。

5.2 正規化發光強度/累計光通量

5.2.1 於下述情況進行量測

- (a) 穩定三0分鐘後，或
- (b) Tb 溫度於相關資料表規定值穩定後。

5.2.2 應於相關試驗電壓進行量測。

5.2.3 試驗樣本之正規化發光強度，應為 5.2.1 所量測得光度分布除以 5.1.2(三0分鐘後)所量測得光通量。

5.2.4 試驗樣本之累計光通量應依 CIE84-1989 標準之 4.3 規定，對立體角度(Solid angle)錐體內之光度進行積分計算。

5.3 顏色

於 5.1.1 測量條件下，發光顏色均應符合色度邊界規範。

5.4 能量消耗

5.4.1 於 5.1.1 測量條件下，符合 4.2.3 之要求，進行能量消耗量測。

5.4.2 應以該類型光源之相關試驗電壓進行能量消耗量測。

5.4.3 應符合該類型光源相關資料表之最小值及最大值。