

AB-0114-T

LVD-2019199

2020-04-07

TEST REPORT / DENEY RAPORU

IEC 60598-2-5

Luminaires - Part 2: Particular requirements - Section 5: Floodlights

Aydınlatma armatürleri - Bölüm 2-5: Belirli özellikler – Projektörler

Report Reference No./ Rapor Referans No.:	LVD-2019199
Date of issue / Yayın Tarihi:	2020-04-07
Tested by (name + signature) / Test eden (isim + imza):	Esat KÖSELER Expert Test Engineer / Uzman Test Mühendisi
Approved by (+ signature) / Onaylayan (isim + imza):	Engin URULU Expert Test Engineer / Uzman Test Mühendisi
Total number of pages / Toplam Sayfa Sayısı:	70 Pages / Sayfa
Testing Laboratory / Test Laboratuvarı:	Esım Test Hizmetleri San. ve Tic. A.Ş.
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Applicant's name / Başvuran:	Hera Eğlence ve Mimari Aydınlatma Sistemleri A.Ş
Address / Adres:	Güllübağlar Mah. Kahramanlar Cad. No:3-1 34906 Pendik – İstanbul / Turkey / Türkiye
Test specification / Test özelliği:	Standard / Standart
Standard / Standart:	*/**IEC 60598-2-5:2015 used in conjunction with / ile birlikte kullanılan */**IEC 60598-1:2014, AMD1:2017
Non-standard test method / Standart olmayan test methodu:	N/A / Uygulanmaz
Test Report Form No. / Test Rapor Form No.:	ESİM60598_2_5F
Test Report Form(s) Originator / Test Rapor Formu Düzenleyen:	ESİM
Master TRF / Asıl TRF:	Dated 2018-04-06
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The result of clauses 5.6(4.24.2) and 5.6.7(-) of the standard which indicate with “**” in this test report have been obtained from an externally provider service / Bu deney raporu içerisinde “**” ile belirtilen standardın 5.6(4.24.2) ve 5.6.7(-) maddelerine ait sonuçlar, dış hizmet sağlayıcıdan temin edilmiştir.	

Test item description / Test ögesi tanımı.....:	Floodlight / Projektör
Trademark / Ticari marka.....:	HERA
Manufacturer / Üretici.....:	Hera Eğlence ve Mimari Aydınlatma Sistemleri A.Ş
Model and/or type reference / Model ve/veya tip referansı.....:	Tested model / Test edilen model: P02024102; Leoline® S12 1515mm DMX RGBW Linear Medium Beam 30° For covered models, see page 8 to 14. / Kapsanan modeller için sayfa 8 ile 14 arasına bakınız.
Ratings / Beyan değerleri.....:	48 Vdc, Max.1,56 A, 75 W, IP67, Class III / Sınıf III

General disclaimer / Genel uyarılar:

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Summary of testing / Testin özeti:**Testing location / Test yeri:**

Esim Test Hizmetleri San. ve Tic. A.S.

TOSB Otomotiv Yan Sanayi İhtisas O.S.B. 2.Cad. 17.Sok. No:2/5

41420 Çayirova - Kocaeli / **Turkey / Türkiye**

Tests performed (name of test and test clause) / Uygulanan testler (test adı ve maddesi):

All tests for relevant clauses of the standard has been performed.

/ Standardın ilgili maddelerindeki tüm testler yapılmıştır.

The product fulfils the requirements of the standards *IEC 60598-2-5:2015 used in conjunction with ***IEC 60598-1:2014, AMD1:2017 and ***EN 60598-2-5:2015 used in conjunction with ***EN 60598-1:2015 + A1:2018. / Test edilen ürün ***IEC 60598-2-5:2015 ile birlikte kullanılan ***IEC 60598-1:2014, AMD1:2017 ve ***EN 60598-2-5:2015 ile birlikte kullanılan ***EN 60598-1:2015 + A1:2018 standartlarındaki ilgili tüm gereklilikleri yerine getirmektedir.**

***: The Clauses 4.20 and 4.24.2 are outside of the accreditation scope. / 4.20 maddesi ve 4.24.2 maddesi akreditasyon kapsamı dışındadır.**

**** The Clause 4.20 has been performed in the accredited GCNTR Uluslararası Belgelendirme, Gözetim, Eğitim ve Dış Tic. Ltd. Şti. / 4.20 maddesi maddesi akredite olarak GCNTR Uluslararası Belgelendirme, Gözetim, Eğitim ve Dış Tic. Ltd. Şti.'nde yapılmıştır.**

**** The Clause 4.24.2 has been performed in the accredited TSE Elektroteknik Laboratuvarı Gebze Müdürlüğü. / 4 24.2 maddesi akredite olarak TSE Elektroteknik Laboratuvarı Gebze Müdürlüğü'nde yapılmıştır.**

List of Attachments / Eklerin listesi:

APPENDIX 1 : List of test equipment used , in Page 45 / EK 1 : Kullanılan test ekipmanların listesi sayfa 45'de.

APPENDIX 2 : Photos of product, in Pages 46 to 50. / EK 2 : Test edilen ürün fotoğrafları sayfa 46'dan 50'ye kadar.

APPENDIX 3: European group differences and national differences, in Pages 50 to 52. / EK 3: Avrupa grup farklılıkları ve ulusal farklılıklar eki sayfa 50'den 52'ye kadar.

APPENDIX 4 : Retinal blue light hazard test report issued by TSE Elektroteknik Laboratuvarı Gebze Müdürlüğü, in Pages 52 to 63. EK 4: TSE Elektroteknik Laboratuvarı Gebze Müdürlüğü tarafından düzenlenen retinal mavi ışık tehlikesi test raporu sayfa 52'den 63'e kadar.

APPENDIX 5 : Sinusoidal vibration test report issued by GCNTR Uluslararası Belgelendirme, Gözetim, Eğitim ve Dış Tic. Ltd. Şti., in Pages 63 to 70. EK 5: GCNTR Uluslararası Belgelendirme, Gözetim, Eğitim ve Dış Tic. Ltd. Şti. tarafından düzenlenen sinüs biçimli titreşim test raporu sayfa 63'den 70'e kadar.

Copy of marking plate / İşaret etiketi kopyası:



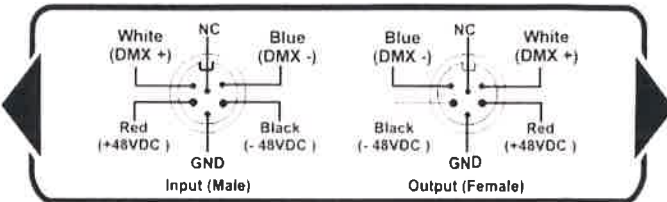
entertainment & architecture lighting






RoHS compliant **IP67**

Model: P02024102
Leoline®S12 1515mm DMX RGBW Linear Medium Beam 30°
48V DC / Max. 1,56A / Max.75W Ta: 50°



Address: Güllübağlar Mah. Kahramanlar Cad. No. 3/1 Pendik / İstanbul / Turkey
www.heraled.com Made in Turkey

Test item particulars	Floodlight / Projektör
Classification of installation and use / kullanım ve yerleşim sınıfı	Class III / Sınıf III
Supply Connection / Besleme bağlantısı	2+4 pins connector with supply cord / 2+4 pinli konnektör beraberinde besleme kordonu
Possible test case verdicts / test durum kararları	
- test case does not apply to the test object / Bu ürüne uygulanmaz	N/A / Uygulanmaz
- test object does meet the requirement / test edilen ürünü kuralları karşılıyor	P(Pass) / Karşılıyor
- test object does not meet the requirement / test edilen ürün kuralları karşılamıyor	F(Fail) / Karşılamıyor
Testing / Test etme	
Date of receipt of test item / Ürünün geliş tarihi	2019-10-10
Date (s) of performance of tests / Ürün testlerinin yapılış tarihleri	2019.10.11 –2020.04.07

Table / Tablo – 1: Covered models / Kapsanan modeller

Model / Model	Description / Açıklama	
P02020011	Leoline® S12 315mm DMX SC Surface Mounted Narrow Beam 15°	P 1 2 3 4 X X 7 ↓ 01-Red 02-Green 03-Blue 04-Amber 05-Warm White 06-Natural White 07-Cool White
P02020XX2	Leoline® S12 315mm DMX SC Surface Mounted Medium Beam 30°	
P02020XX3	Leoline® S12 315mm DMX SC Surface Mounted Wide Beam 45°	
P02020XX4	Leoline® S12 315mm DMX SC Surface Mounted Very Wide Beam 60°	
P02020XX6	Leoline® S12 315mm DMX SC Surface Mounted Asymmetric Beam 35°+15°	
P02021XX1	Leoline® S12 615mm DMX SC Surface Mounted Narrow Beam 15°	
P02021XX2	Leoline® S12 615mm DMX SC Surface Mounted Medium Beam 30°	
P02021XX3	Leoline® S12 615mm DMX SC Surface Mounted Wide Beam 45°	
P02021XX4	Leoline® S12 615mm DMX SC Surface Mounted Very Wide Beam 60°	
P02021XX6	Leoline® S12 615mm DMX SC Surface Mounted Asymmetric Beam 35°+15°	
P02022XX1	Leoline® S12 915mm DMX SC Surface Mounted Narrow Beam 15°	
P02022XX2	Leoline® S12 915mm DMX SC Surface Mounted Medium Beam 30°	
P02022XX3	Leoline® S12 915mm DMX SC Surface Mounted Wide Beam 45°	
P02022XX4	Leoline® S12 915mm DMX SC Surface Mounted Very Wide Beam 60°	
P02022XX6	Leoline® S12 915mm DMX SC Surface Mounted Asymmetric Beam 35°+15°	
P02023XX1	Leoline® S12 1215mm DMX SC Surface Mounted Narrow Beam 15°	
P02023XX2	Leoline® S12 1215mm DMX SC Surface Mounted Medium Beam 30°	
P02023XX3	Leoline® S12 1215mm DMX SC Surface Mounted Wide Beam 45°	
P02023XX4	Leoline® S12 1215mm DMX SC Surface Mounted Very Wide Beam 60°	

P02023XX6	Leoline® S12 1215mm DMX SC Surface Mounted Asymmetric Beam 35°+15°	
P02024XX1	Leoline® S12 1515mm DMX SC Surface Mounted Narrow Beam 15°	
P02024XX2	Leoline® S12 1515mm DMX SC Surface Mounted Medium Beam 30°	
P02024XX3	Leoline® S12 1515mm DMX SC Surface Mounted Wide Beam 45°	
P02024XX4	Leoline® S12 1515mm DMX SC Surface Mounted Very Wide Beam 60°	
P02024XX6	Leoline® S12 1515mm DMX SC Surface Mounted Asymmetric Beam 35°+15°	
P02020081	Leoline® S12 315mm DMX RGB Surface Mounted Narrow Beam 15°	
P02020082	Leoline® S12 315mm DMX RGB Surface Mounted Medium Beam 30°	
P02020083	Leoline® S12 315mm DMX RGB Surface Mounted Wide Beam 45°	
P02020084	Leoline® S12 315mm DMX RGB Surface Mounted Very Wide Beam 60°	
P02020086	Leoline® S12 315mm DMX RGB Surface Mounted Asymmetric Beam 35°+15°	
P02021081	Leoline® S12 615mm DMX RGB Surface Mounted Narrow Beam 15°	
P02021082	Leoline® S12 615mm DMX RGB Surface Mounted Medium Beam 30°	
P02021083	Leoline® S12 615mm DMX RGB Surface Mounted Wide Beam 45°	
P02021084	Leoline® S12 615mm DMX RGB Surface Mounted Very Wide Beam 60°	
P02021086	Leoline® S12 615mm DMX RGB Surface Mounted Asymmetric Beam 35°+15°	
P02022081	Leoline® S12 915mm DMX RGB Surface Mounted Narrow Beam 15°	
P02022082	Leoline® S12 915mm DMX RGB Surface Mounted Medium Beam 30°	
P02022083	Leoline® S12 915mm DMX RGB Surface Mounted Wide Beam 45°	
P02022084	Leoline® S12 915mm DMX RGB Surface Mounted Very Wide Beam 60°	
P02022086	Leoline® S12 915mm DMX RGB Surface Mounted Asymmetric Beam 35°+15°	
P02023081	Leoline® S12 1215mm DMX RGB Surface Mounted Narrow Beam 15°	

P02023082	Leoline® S12 1215mm DMX RGB Surface Mounted Medium Beam 30°
P02023083	Leoline® S12 1215mm DMX RGB Surface Mounted Wide Beam 45°
P02023084	Leoline® S12 1215mm DMX RGB Surface Mounted Very Wide Beam 60°
P02023086	Leoline® S12 1215mm DMX RGB Surface Mounted Asymmetric Beam 35°+15°
P02024081	Leoline® S12 1515mm DMX RGB Surface Mounted Narrow Beam 15°
P02024082	Leoline® S12 1515mm DMX RGB Surface Mounted Medium Beam 30°
P02024083	Leoline® S12 1515mm DMX RGB Surface Mounted Wide Beam 45°
P02024084	Leoline® S12 1515mm DMX RGB Surface Mounted Very Wide Beam 60°
P02024086	Leoline® S12 1515mm DMX RGB Surface Mounted Asymmetric Beam 35°+15°
P02020101	Leoline® S12 315mm DMX RGBW Surface Mounted Narrow Beam 15°
P02020102	Leoline® S12 315mm DMX RGBW Surface Mounted Medium Beam 30°
P02020103	Leoline® S12 315mm DMX RGBW Surface Mounted Wide Beam 45°
P02020104	Leoline® S12 315mm DMX RGBW Surface Mounted Very Wide Beam 60°
P02020106	Leoline® S12 315mm DMX RGBW Surface Mounted Asymmetric Beam 35°+15°
P02021101	Leoline® S12 615mm DMX RGBW Surface Mounted Narrow Beam 15°
P02021102	Leoline® S12 615mm DMX RGBW Surface Mounted Medium Beam 30°
P02021103	Leoline® S12 615mm DMX RGBW Surface Mounted Wide Beam 45°
P02021104	Leoline® S12 615mm DMX RGBW Surface Mounted Very Wide Beam 60°
P02021106	Leoline® S12 615mm DMX RGBW Surface Mounted Asymmetric Beam 35°+15°
P02022101	Leoline® S12 915mm DMX RGBW Surface Mounted Narrow Beam 15°
P02022102	Leoline® S12 915mm DMX RGBW Surface Mounted Medium Beam 30°
P02022103	Leoline® S12 915mm DMX RGBW Surface Mounted Wide Beam 45°

P02022104	Leoline® S12 915mm DMX RGBW Surface Mounted Very Wide Beam 60°
P02022106	Leoline® S12 915mm DMX RGBW Surface Mounted Asymmetric Beam 35°+15°
P02023101	Leoline® S12 1215mm DMX RGBW Surface Mounted Narrow Beam 15°
P02023102	Leoline® S12 1215mm DMX RGBW Surface Mounted Medium Beam 30°
P02023103	Leoline® S12 1215mm DMX RGBW Surface Mounted Wide Beam 45°
P02023104	Leoline® S12 1215mm DMX RGBW Surface Mounted Very Wide Beam 60°
P02023106	Leoline® S12 1215mm DMX RGBW Surface Mounted Asymmetric Beam 35°+15°
P02024101	Leoline® S12 1515mm DMX RGBW Surface Mounted Narrow Beam 15°
P02024102	Leoline® S12 1515mm DMX RGBW Surface Mounted Medium Beam 30°
P02024103	Leoline® S12 1515mm DMX RGBW Surface Mounted Wide Beam 45°
P02024104	Leoline® S12 1515mm DMX RGBW Surface Mounted Very Wide Beam 60°
P02024106	Leoline® S12 1515mm DMX RGBW Surface Mounted Asymmetric Beam 35°+15°
P02020091	Leoline® S12 315mm DMX RGBA Surface Mounted Narrow Beam 15°
P02020092	Leoline® S12 315mm DMX RGBA Surface Mounted Medium Beam 30°
P02020093	Leoline® S12 315mm DMX RGBA Surface Mounted Wide Beam 45°
P02020094	Leoline® S12 315mm DMX RGBA Surface Mounted Very Wide Beam 60°
P02020096	Leoline® S12 315mm DMX RGBA Surface Mounted Asymmetric Beam 35°+15°
P02021091	Leoline® S12 615mm DMX RGBA Surface Mounted Narrow Beam 15°
P02021092	Leoline® S12 615mm DMX RGBA Surface Mounted Medium Beam 30°
P02021093	Leoline® S12 615mm DMX RGBA Surface Mounted Wide Beam 45°
P02021094	Leoline® S12 615mm DMX RGBA Surface Mounted Very Wide Beam 60°
P02021096	Leoline® S12 615mm DMX RGBA Surface Mounted Asymmetric Beam 35°+15°

P02021123	Leoline® S12 615mm DMX DW Surface Mounted Wide Beam 45°
P02021124	Leoline® S12 615mm DMX DW Surface Mounted Very Wide Beam 60°
P02021126	Leoline® S12 615mm DMX DW Surface Mounted Asymmetric Beam 35°+15°
P02022121	Leoline® S12 915mm DMX DW Surface Mounted Narrow Beam 15°
P02022122	Leoline® S12 915mm DMX DW Surface Mounted Medium Beam 30°
P02022123	Leoline® S12 915mm DMX DW Surface Mounted Wide Beam 45°
P02022124	Leoline® S12 915mm DMX DW Surface Mounted Very Wide Beam 60°
P02022126	Leoline® S12 915mm DMX DW Surface Mounted Asymmetric Beam 35°+15°
P02023121	Leoline® S12 1215mm DMX DW Surface Mounted Narrow Beam 15°
P02023122	Leoline® S12 1215mm DMX DW Surface Mounted Medium Beam 30°
P02023123	Leoline® S12 1215mm DMX DW Surface Mounted Wide Beam 45°
P02023124	Leoline® S12 1215mm DMX DW Surface Mounted Very Wide Beam 60°
P02023126	Leoline® S12 1215mm DMX DW Surface Mounted Asymmetric Beam 35°+15°
P02024121	Leoline® S12 1515mm DMX DW Surface Mounted Narrow Beam 15°
P02024122	Leoline® S12 1515mm DMX DW Surface Mounted Medium Beam 30°
P02024123	Leoline® S12 1515mm DMX DW Surface Mounted Wide Beam 45°
P02024124	Leoline® S12 1515mm DMX DW Surface Mounted Very Wide Beam 60°
P02024126	Leoline® S12 1515mm DMX DW Surface Mounted Asymmetric Beam 35°+15°
P02025101	Leoline® M6 315mm DMX RGBW Surface Mounted Narrow Beam 10°
P02025102	Leoline® M6 315mm DMX RGBW Surface Mounted Medium Beam 25°
P02025103	Leoline® M6 315mm DMX RGBW Surface Mounted Wide Beam 35°
P02025104	Leoline® M6 315mm DMX RGBW Surface Mounted Asymmetric Beam 12+40°

P02025106	Leoline® M6 315mm DMX RGBW Surface Mounted Asymmetric Beam 40+12°
P02026101	Leoline® M6 615mm DMX RGBW Surface Mounted Narrow Beam 10°
P02026102	Leoline® M6 615mm DMX RGBW Surface Mounted Medium Beam 25°
P02026103	Leoline® M6 615mm DMX RGBW Surface Mounted Wide Beam 35°
P02026104	Leoline® M6 615mm DMX RGBW Surface Mounted Asymmetric Beam 12+40°
P02026106	Leoline® M6 615mm DMX RGBW Surface Mounted Asymmetric Beam 40+12°
P02027101	Leoline® M6 915mm DMX RGBW Surface Mounted Narrow Beam 10°
P02027102	Leoline® M6 915mm DMX RGBW Surface Mounted Medium Beam 25°
P02027103	Leoline® M6 915mm DMX RGBW Surface Mounted Wide Beam 35°
P02027104	Leoline® M6 915mm DMX RGBW Surface Mounted Asymmetric Beam 12+40°
P02027106	Leoline® M6 915mm DMX RGBW Surface Mounted Asymmetric Beam 40+12°
P02028101	Leoline® M6 1215mm DMX RGBW Surface Mounted Narrow Beam 10°
P02028102	Leoline® M6 1215mm DMX RGBW Surface Mounted Medium Beam 25°
P02028103	Leoline® M6 1215mm DMX RGBW Surface Mounted Wide Beam 35°
P02028104	Leoline® M6 1215mm DMX RGBW Surface Mounted Asymmetric Beam 12+40°
P02028106	Leoline® M6 1215mm DMX RGBW Surface Mounted Asymmetric Beam 40+12°
P02029101	Leoline® M6 1515mm DMX RGBW Surface Mounted Narrow Beam 10°
P02029102	Leoline® M6 1515mm DMX RGBW Surface Mounted Medium Beam 25°
P02029103	Leoline® M6 1515mm DMX RGBW Surface Mounted Wide Beam 35°
P02029104	Leoline® M6 1515mm DMX RGBW Surface Mounted Asymmetric Beam 12+40°
P02029106	Leoline® M6 1515mm DMX RGBW Surface Mounted Asymmetric Beam 40+12°

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

5.4 (0+2)	CLASSIFICATION OF LUMINAIRES		—
5.4 (0)	General requirements and tests		—
5.4 (0.3)	More sections applicable	Yes ☐ No ☒ Section/s:---	—
5.4 (0.5)	Components	(see Annex 1)	—
5.4 (0.7)	Information for luminaire design in light sources standards		—
5.4 (0.7.2)	Light source safety standard	IEC/TR 62778; Risk Group RG2 tested by TSE (see appendix 4)	—
	Luminaire design in the light source safety standard	IEC/EN 62031 tested by ESİM	—
5.4 (2)	Classification of luminaires		—
5.4 (2.2)	Type of protection	Class III	P
5.4 (2.3)	Degree of protection	IP67	—
5.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces	Yes ☒ No ☐	—
5.4 (2.5)	Luminaire for normal use	Yes ☒ No ☐	—
	Luminaire for rough service	Yes ☐ No ☒	—

5.5 (3)	MARKING		—
5.5 (3.2)	Mandatory markings	See rating plate	P
	Position of the marking		P
	Format of symbols/text		P
5.5 (3.3)	Additional information		P
	Language of instructions		P
5.5 (3.3.1)	Combination luminaires		N/A
5.5 (3.3.2)	Nominal frequency in Hz	DC	N/A
5.5 (3.3.3)	Operating temperature	Ta: 50°C	P
5.5 (3.3.5)	Wiring diagram		P
5.5 (3.3.6)	Special conditions		N/A
5.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
5.5 (3.3.8)	Limitation for semi-luminaires		N/A
5.5 (3.3.9)	Power factor and supply current		P
5.5 (3.3.10)	Suitability for use indoors	IP67; Suitability for use outdoor	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5 (3.3.11)	Luminaires with remote control	DMX; Remote Addressable System	P
5.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
5.5 (3.3.13)	Specifications of protective shields		N/A
5.5 (3.3.14)	Symbol for nature of supply	DC	N/A
5.5 (3.3.15)	Rated current of socket outlet	No socket outlet	N/A
5.5 (3.3.16)	Rough service luminaire		N/A
5.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
5.5 (3.3.18)	Non-ordinary luminaires with PVC cable	IP67	N/A
5.5 (3.3.19)	Protective conductor current in instruction if applicable	Class III	N/A
5.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N/A
5.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided		P
5.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N/A
5.5 (3.3.23)	Luminaire without controlgear provided with necessary information for selection of appropriate component		P
5.5 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
5.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
5.5 (-)	Additional information if applicable		—
	a) Operation position	surface-mounted exterior	P
	b) Weight and dimensions	5,3 kg ; 47,5x51x1515 mm	P
	c) Maximum protected area	32,6 lm/W; 2568 lm 27575 cd	P
	d) Limitation of use indoors and/or outdoor	only use outdoor	P
	e) Maximum mounting height if ≤ 5 m	mounting height; ≤ 5 m and > 5 m	N/A
5.6 (4)	CONSTRUCTION		—
5.6 (4.2)	Components replaceable without difficulty		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.3)	Wireways smooth and free from sharp edges		P
5.6 (4.4)	Lampholders		—
5.6 (4.4.1)	Integral lampholder		N/A
5.6 (4.4.2)	Wiring connection		N/A
5.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
5.6 (4.4.4)	Positioning		N/A
	- pressure test (N)		—
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (N)		—
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
5.6 (4.4.5)	Peak pulse voltage		N/A
5.6 (4.4.6)	Centre contact		N/A
5.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
5.6 (4.4.8)	Lamp connectors		N/A
5.6 (4.4.9)	Caps and bases correctly used		N/A
5.6 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N/A
5.6 (4.5)	Starter holders		—
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
5.6 (4.6)	Terminal blocks		—
	Tails		N/A
	Unsecured blocks		N/A
5.6 (4.7)	Terminals and supply connections		—
5.6 (4.7.1)	Contact to metal parts	Class III	N/A
5.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
5.6 (4.7.3)	Terminals for supply conductors		N/A
5.6 (4.7.3.1)	Welded method and material		—
	- stranded or solid conductor		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
5.6 (4.7.4)	Terminals other than supply connection		P
5.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
5.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
5.6 (4.8)	Switches		—
	- adequate rating	No switch	N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
5.6 (4.9)	Insulating lining and sleeves		—
5.6 (4.9.1)	Retainment		N/A
	Method of fixing.....		N/A
5.6 (4.9.2)	Insulated linings and sleeves:		—
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C).....		N/A
5.6 (4.10)	Double or reinforced insulation		—
5.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	Class III	N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
5.6 (4.10.2)	Assembly gaps:		—
	- not coincidental		N/A
	- no straight access with test probe		N/A
5.6 (4.10.3)	Retainment of insulation:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
5.6 (4.10.4)	Protective impedance device		—
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		N/A
	Y1 or Y2 capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A
5.6 (4.11)	Electrical connections and current-carrying parts		—
5.6 (4.11.1)	Contact pressure		N/A
5.6 (4.11.2)	Screws:		N/A
	- self-tapping screws	No electrical connection screws	N/A
	- thread-cutting screws		N/A
5.6 (4.11.3)	Screw locking:		—
	- spring washer		N/A
	- rivets		N/A
5.6 (4.11.4)	Material of current-carrying parts		N/A
5.6 (4.11.5)	No contact to wood or mounting surface		N/A
5.6 (4.11.6)	Electro-mechanical contact systems		N/A
5.6 (4.12)	Screws and connections (mechanical) and glands		—
5.6 (4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part		N/A
	Torque test: torque (Nm); part		N/A
	Torque test: torque (Nm); part		N/A
5.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
5.6 (4.12.4)	Locked connections:		—
	- fixed arms; torque (Nm)		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm		N/A
5.6 (4.12.5)	Screwed glands; force (Nm)		N/A
5.6 (4.13)	Mechanical strength		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.13.1)	Impact tests:		—
	- fragile parts; energy (Nm)	Glass: IK09 ; 10 J	P
	- other parts; energy (Nm)	Metal: IK09 ; 10 J	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
5.6 (4.13.2)	Metal parts have adequate mechanical strength		P
5.6 (4.13.3)	Straight test finger		P
5.6 (4.13.4)	Rough service luminaires		—
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
5.6 (4.13.6)	Tumbling barrel		N/A
5.6 (4.14)	Suspensions, fixings and means of adjusting		—
5.6 (4.14.1)	Mechanical load:		—
	A) four times the weight	4 x 5,3 kg= 21,2 kg	P
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm)		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N/A
	Metal rod. diameter (mm)		N/A
	Fixed luminaire or independent control gear without fixing devices		P
5.6 (4.14.2)	Load to flexible cables		—
	Mass (kg)		N/A
	Stress in conductors (N/mm ²)		N/A
	Mass (kg) of semi-luminaire		N/A
	Bending moment (Nm) of semi-luminaire		N/A
5.6 (4.14.3)	Adjusting devices:		—
	- flexing test; number of cycles		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- strands broken		N/A
	- electric strength test afterwards		N/A
5.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
5.6 (4.14.5)	Guide pulleys		N/A
5.6 (4.14.6)	Strain on socket-outlets		N/A
5.6 (4.15)	Flammable materials		—
	- glow-wire test 650°C	See Test Table 5.15 (13.3.2)	P
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		N/A
5.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		—
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
5.6 (4.16)	Luminaires for mounting on normally flammable surfaces		—
	No lamp control gear	(compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
5.6 (4.16.1)	Lamp control gear spacing:		—
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
5.6 (4.16.2)	Thermal protection:		—
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
5.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N/A
5.6 (4.17)	Drain holes		—
	Clearance at least 5 mm		N/A
5.6 (4.18)	Resistance to corrosion		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.18.1)	- rust-resistance		P
5.6 (4.18.2)	- season cracking in copper		P
5.6 (4.18.3)	- corrosion of aluminium		N/A
5.6 (4.19)	Ignitors compatible with ballast		N/A
5.6 (4.20)	Rough service vibration		N/A
5.6 (4.21)	Protective shield		—
5.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
5.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
5.6 (4.21.3)	No direct path		N/A
5.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment	See Test Table 5.15 (13.3.2)	N/A
5.6 (4.22)	Attachments to lamps not cause overheating or damage		N/A
5.6 (4.23)	Semi-luminaires comply Class II		N/A
5.6 (4.24)	Photobiological hazards		—
5.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
*/**5.6 (4.24.2)	Retinal blue light hazard		—
	Class of risk group assessed according to IEC/TR 62778	Risk group RG2 (See appendix 4)	—
	Luminaires with E_{thr}		—
	a) Fixed luminaires		P
	- distance x m, borderline between RG1 and RG2 ...	RG2, >25 m	P
	- marking and instruction according 3.2.23	See rating plate	P
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
5.6 (4.25)	Mechanical hazard		—
	No sharp point or edges		P
5.6 (4.26)	Short-circuit protection		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N/A
5.6 (4.26.2)	Short-circuit test with test chain according 4.26.3		—
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
5.6 (4.27)	Terminal blocks with integrated screwless earthing contacts		—
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A
5.6 (4.28)	Fixing of thermal sensing control		—
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		—
	Max. temperature on adhesive material ($^{\circ}\text{C}$)		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
5.6 (4.29)	Luminaires with non-replaceable light source		—
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
5.6 (4.30)	Luminaires with non-user replaceable light source		—
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		—
	Minimum two fixing means		N/A
5.6 (4.31)	Insulation between circuits		—
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
5.6 (4.31.1)	SELV circuits		—
	Used SELV source	48 Vdc	P
	Voltage $\leq$ ELV		N/A
	Insulating of SELV circuits from LV supply		N/A
	Insulating of SELV circuits from other non SELV circuits		N/A
	Insulating of SELV circuits from FELV		N/A
	Insulating of SELV circuits from other SELV circuits		N/A
	SELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
5.6 (4.31.2)	FELV circuits		—
	Used FELV source		N/A
	Voltage $\leq$ ELV		N/A
	Insulating of FELV circuits from LV supply		N/A
	FELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to enter socket-outlets of other voltage systems		N/A
	Socket outlets does not admit plugs of other voltage systems		N/A
	Socket-outlets does not have protective conductor contact		N/A
5.6 (4.31.3)	Other circuits		—
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		—
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
5.6 (4.32)	Overvoltage protective devices		—
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		—
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
5.6.1 (-)	At least IPX3 if for outdoor use	IP67	P
5.6.2 (-)	Lampholder brackets and lamp supports		N/A
5.6.3 (-)	Adjusting means		P
5.6.4 (-)	Controlling components		N/A
5.6.5 (-)	Fixing device		P
	Wind force test		N/A
5.6.6 (-)	Locking of angular adjustment		P
*/**5.6.7 (-)	Vibration resistance	See appendix 5	P
5.6.8 (-)	Requirement on glass cover if mounting height > 5 m	mounting height; ≤ 5 m and > 5 m	P
	Method of protection	a) constituted with a glass that fractures into small pieces, 59 glass particles > 40 b) constituted with a glass having a high impact shock resistance, IK09 (see ESIM test report LVD-2019227)	—

5.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		—
5.7 (11.2.1)	Impulse withstand category (Normal category II)	Category II ☐ Category III ☐	—
	Category III according Annex U	Class III; < 60 Vdc	N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
5.7 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 5.7 (11.2) I	N/A
	Creepage distances for frequency over 30 kHz:		—

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Clause	Requirement + Test	Result - Remark	Verdict

	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according IEC 61347-1, clause 7.1, item w	See Test Table 5.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 5.7 (11.2) II	N/A
5.7 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 5.7 (11.2) I	N/A
	Clearances distances for frequency over 30 kHz:		—
	- Controlgear marked with U_P	See Test Table 5.7 (11.2) II	N/A
	- Requirements according IEC 60664-4 for controlgear not covered by IEC 61347	See Test Table 5.7 (11.2) II	N/A

5.8 (7)	PROVISION FOR EARTHING		—
5.8 (7.2.1 + 7.2.3)	Accessible metal parts	Class III	N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a groove		N/A
	Earth makes contact first		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
5.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N/A
5.8 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
5.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
5.8 (7.2.6)	Earth terminal adjacent to mains terminals		N/A
5.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
5.8 (7.2.8)	Material of earth terminal		N/A
	Contact surface bare metal		N/A
5.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
5.8 (7.2.11)	Earthing core coloured green-yellow		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Length of earth conductor		N/A
5.9 (14)	SCREW TERMINALS		—
	Separately approved; component list		N/A
	Part of the luminaire		N/A
5.9 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		—
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 4)	N/A
5.10 (5)	EXTERNAL AND INTERNAL WIRING		—
5.10 (5.2)	Supply connection and external wiring		—
5.10 (5.2.1)	Means of connection	Type Y	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment	Class III; 48 Vdc, IP67 No PVC cable, Used Halogen cable	P
5.10 (5.2.2)	Type of cable	PV1-F LSZH-FR	P
	Nominal cross-sectional area (mm ²)	Class III, 48 Vdc, ≤ 2 A; 0,5 mm ²	P
	Cables equal to IEC 60227 or IEC 60245		N/A
5.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
5.10 (5.2.5)	Type Z not connected to screws		N/A
5.10 (5.2.6)	Cable entries:		—
	- suitable for introduction		P
	- adequate degree of protection		P
5.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
5.10 (5.2.8)	Insulating bushings:		—
	- suitably fixed		P
	- material in bushings		P
	- material not likely to deteriorate		P
	- tubes or guards made of insulating material		P
5.10 (5.2.9)	Locking of screwed bushings		P
5.10 (5.2.10)	Cord anchorage:		—
	- covering protected from abrasion	Gland used as anchorage	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
5.10 (5.2.10.1)	Cord anchorage for type X attachment:		—
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
5.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Gland used as anchorage for type Y	P
5.10 (5.2.10.3)	Tests:		—
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)	30 N	P
	- torque test: torque (Nm)	0,08 Nm	P
	- displacement ≤ 2 mm	No displacement	P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		N/A
5.10 (5.2.11)	External wiring passing into luminaire		P
5.10 (5.2.12)	Looping-in terminals		P
5.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
5.10 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No unsafe compatibility		P
5.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Other appliance inlet or connector according relevant IEC standard		N/A
5.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
5.10 (5.2.18)	Used plug in accordance with		—
	- IEC 60083		N/A
	- other standard		N/A
5.10 (5.3)	Internal wiring		—
5.10 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		—
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)		N/A
	- temperatures..... (see Annex 2)		N/A
	Green-yellow for earth only		N/A
5.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		—
	Cross-sectional area (mm ²)	<2 A ; 0,5 mm ²	P
	Insulation thickness (mm)	<2 A; 0,5 mm	P
	Extra insulation added where necessary		N/A
5.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		—
	Cross-sectional area (mm ²)		N/A
5.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
5.10 (5.3.1.4)	Conductors without insulation		N/A
5.10 (5.3.1.5)	SELV current-carrying parts		P
5.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
5.10 (5.3.2)	Sharp edges etc.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
5.10 (5.3.3)	Insulating bushings:		—
	- suitable fixed		P
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.10 (5.3.4)	Joints and junctions effectively insulated		N/A
5.10 (5.3.5)	Strain on internal wiring		P
5.10 (5.3.6)	Wire carriers	Not settable and adjustable luminaire	N/A
5.10 (5.3.7)	Wire ends not tinned	No connecting leads	N/A
	Wire ends tinned: no cold flow		N/A
5.10 (5.4)	Test to determine suitability of conductors having a reduced cross-sectional area		—
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(see Annex 2)	P
	No damage to luminaire wiring after test		P
5.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		—
5.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
5.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
5.11 (8.2.3.a)	Class II luminaire:		—
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
5.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
5.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		—
	Ordinary luminaire:		—
	- voltage under load (V)		N/A
	- no-load voltage (V)		N/A
	- touch current if applicable (mA)		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		—
	- nominal voltage (V)	48 Vdc	P
	Class III luminaire only for connection to SELV		P
	Class III luminaire not provided with means for protective earthing		P
5.11 (8.2.4)	Portable luminaire has protection independent of supporting surface	Fixed luminaire	N/A
5.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
5.11 (8.2.6)	Covers reliably secured		P
5.11 (8.2.7)	Luminaire other than below with capacitor > 0,5 μ F not exceed 50 V 1 min after disconnection		N/A
	Portable luminaire with capacitor > 0,1 μ F (0.25) not exceed 34 V 1 s after disconnection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Other luminaires with capacitor > 0,1 μ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
5.12 (12)	ENDURANCE TEST AND THERMAL TEST		—
5.12.2 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 5.13		—
5.12 (12.2)	Selection of lamps and ballasts		—
	Lamp used according Annex B	(Lamp used see Annex 2)	—
	Controlgear if separate and not supplied	(Controlgear used see Annex 2)	—
5.12 (12.3)	Endurance test		—
	a) mounting-position	Mounted on wall	—
	b) test temperature (°C)	60°C (ta + 10°C)	—
	c) total duration (h)	240 h	—
	d) supply voltage (V)		—
	d) if not equipped with controlgear, constant voltage/current (V) or (A)	Constant voltage 48 Vdc	—
	e) luminaire ceases to operate		—
5.12 (12.3.2)	After endurance test:		—
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		P
	- marking legible		P
	- no cracks, deformation etc.		P
5.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
5.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
5.12 (12.6)	Thermal test (failed lamp control gear condition):		—
5.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—
	- case of abnormal conditions		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N/A
	- calculated mounting surface temperature (°C)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- track-mounted luminaires		N/A
5.12 (12.6.2)	Temperature sensing control		—
	- case of abnormal conditions		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)		N/A
	- track-mounted luminaires		N/A
5.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		—
5.12 (12.7.1)	Luminaire without temperature sensing control		—
5.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		—
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		—
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		—
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part (°C)		—
	Ball-pressure test	See Test Table 5.15 (13.2.1)	N/A
5.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		—
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part (°C)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Ball-pressure test	See Test Table 5.15 (13.2.1)	N/A
5.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
5.12 (12.7.2)	Luminaire with temperature sensing control		—
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/ exposed part (°C):		—
	Ball-pressure test:	See Test Table 5.15 (13.2.1)	N/A
5.12.1 (-)	Reduction 10 °C of measured temperatures if for outdoor use		—
5.12.2 (-)	Glass covers used within the thermal limits	Glass operating temperature: glass cover manufacturer decelerated 650 – 700 °C	P

5.13 (9)	RESISTANCE TO DUST AND MOISTURE		—
5.13.1 (-)	If IP > IP 20 the order of tests as specified in clause 5.12		—
5.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP	IP67 (see ESIM test report LVD-2019228)	—
	- mounting position during test	Mounted on wall	—
	- fixing screws tightened; torque (Nm)		—
	- tests according to clauses	9.2.2, 9.2.8	—
	- electric strength test afterwards	500 VAC	P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight or pressure watertight luminaire		P
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		P
5.13 (9.3)	Humidity test 48 h	25°C, 93% Rh	P

5.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		—
5.14 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (MΩ)		—
	SELV		—
	- between current-carrying parts of different polarity	199,9 MΩ	P
	- between current-carrying parts and mounting surface	199,9 MΩ	P
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		—
	- between live parts of different polarity		N/A
	- between live parts and mounting surface		N/A
	- between live parts and metal parts		N/A
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Insulation bushings as described in Section 5		N/A
5.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V).....		N/A
	SELV		—
	- between current-carrying parts of different polarity:	500 Vac; no breakdown	P
	- between current-carrying parts and mounting surface	500 Vac; no breakdown	P
	- between current-carrying parts and metal parts of the luminaire		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
	Other than SELV		—
	- between live parts of different polarity		N/A
	- between live parts and mounting surface		N/A
	- between live parts and metal parts		N/A
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts		N/A
	- Insulation bushings as described in Section 5		N/A
5.14 (10.3)	Touch current or protective conductor current (mA):	Class III	N/A
5.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		—
5.15 (13.2.1)	Ball-pressure test	See Test Table 5.15 (13.2.1)	P
5.15 (13.3.1)	Needle-flame test (10 s).....	See Test Table 5.15 (13.3.1)	P
5.15 (13.3.2)	Glow-wire test (650°C).....	See Test Table 5.15 (13.3.2)	P
5.15 (13.4)	Proof tracking test (IEC 60112)	See Test Table 5.15 (13.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict

5.7 (11.2)	TABLE I: Creepage distances and clearances							N/A
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages							
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*							
	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:								
Working voltage (V).....:							—	
PTI.....:					< 600 ☐ ≥ 600 ☐		—	
Pulse voltage or U_P if applicable (kV)							—	
Supplementary information:								
Distance 2:								
Working voltage (V).....:							—	
PTI.....:					< 600 ☐ ≥ 600 ☐		—	
Pulse voltage or U_P if applicable (kV)							—	
Supplementary information:								
Distance 3:								
Working voltage (V).....:							—	
PTI.....:					< 600 ☐ ≥ 600 ☐		—	
Pulse voltage or U_P if applicable (kV)							—	
Supplementary information:								

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

5.7 (11.2)	TABLE II: Creepage distances and clearances						N/A
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages							
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2							
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required	
			clearance	*Table		creepage	*Table
Distance 1:							
Working voltage (V).....*							—
Frequency if applicable (kHz)*							—
PTI.....*					< 600 ☐ ≥ 600 ☐		—

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Clause		Requirement + Test				Result - Remark			Verdict
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)									—
Supplementary information:									
Distance 2:									
Working voltage (V).....									—
Frequency if applicable (kHz)									—
PTI.....						< 600 ☐			$\geq$ 600 ☐
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)									—
Supplementary information:									
Distance 3:									
Working voltage (V).....									—
Frequency if applicable (kHz)									—
PTI.....						< 600 ☐			$\geq$ 600 ☐
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)									—
Supplementary information:									

** Insulation type: B – Basic; S – Supplementary; R – Reinforced.

5.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm):		≤2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB type connector	HERA	125	1,0	
LED lens	LEDIL	75	1,2	
LED lens holder	LEDIL	75	0,9	
Supplementary information:				

5.15 (13.3.1)	TABLE: Needle-flame test (IEC 60695-11-5)				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
PCB type connector	HERA	10	No	5	P
Printed Circuit Board	Baskı Devre San. Tic. A.Ş.	10	No	0	P

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

5.15 (13.3.2)	TABLE: Glow-wire test (IEC 60695-2-11)				P
Glow wire temperature:			650°C		—
Object/ Part No./ Material	Manufacturer/ trademark		Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
LED lens	LEDIL		No	0	P
LED lens holder	LEDIL		No	0	P
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.15 (13.4) TABLE: Proof tracking test (IEC 60112)				P
Test voltage PTI		175 V		—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens		Verdict
PCB type connector	HERA			P
Printed Circuit Board	Baskı Devre San. Tic. A.Ş.			P
Supplementary information:				

ANNEX 1	TABLE: Critical components information					P
Object / part No.	Code	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
LED module	C	HERA	Constant voltage	48 Vdc	IEC/EN 62031	Tested with appliance
LED	B	Cree INC.	XTEAWT 6500K White Led	Maximum Vf for High Efficacy XT-E White: 2.85 V • Binned at 85 °C • Available in 2200 K CCT • • Maximum drive current: White 1.5 A, Royal Blue 1.5 A	ANSI/UL 8750	UL E349212
LED	B	Cree INC.	XPE2 Red XPEBRD Series Led	White binned at 85 °C • Maximum drive current: 1 A • Low thermal resistance: as low as 5 °C/W • Wide viewing angle: 110°-140° • Unlimited floor life at ≤ 30 °C/85% RH	ANSI/UL 8750	UL E349212

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Clause	Requirement + Test			Result - Remark		Verdict
LED	B	Cree INC.	XPE2 Green XPEBGR Series Led	White binned at 85 °C • Maximum drive current: 1 A	ANSI/UL 8750	UL E349212
LED	B	Cree INC.	XPE2 Blue XPEBRY Series Led	White binned at 85°C • Maximum drive current: 1 A	ANSI/UL 8750	UL E349212
PCB	B	BASKI DEVRE SAN. TIC. A S	FR4 (C13093_R1.0)	V-0, 90°C, 0.8 mm FR4 4 Layers 35+35+35+35u mCu/BlackSold erMask/WhiteSilkScreen	ANSI/UL 796, ANSI/UL 796F	UL E201793
LED Lens with holder	C	LEDIL	CA11017_TIN A2-M-30	Lens; clear, PMMA Holder; Black, PC Dimensions Ø 16,1 mm, Height 9,7 mm	IEC/EN 60598-1, IEC/EN 60598-2-5	Tested with appliance
PCB type connector	C	HERA	1X8 Pin Header	1X8 Pin	IEC/EN 60598-1, IEC/EN 60598-2-5	Tested with appliance
Push Lock Type 2+4 Extension Cable	C	HERA	2+4 pin push lock	IP67, 2+4 pin push lock	IEC/EN 60598-1, IEC/EN 60598-2-5	Tested with appliance
Description:		The extension cables are IP67 class, 2+4 pin push lock type and are used in HERA - Sword, Leoline, Moleline and 3D VT Series.				
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.						
The codes above have the following meaning:						
A - The component is replaceable with another one, also certified, with equivalent characteristics						
B - The component is replaceable if authorised by the test house						
C - Integrated component tested together with the appliance						
D - Alternative component						

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	TABLE: Thermal tests of Section 12		—				
	Type reference	Leoline® S12 1515mm DMX RGBW Linear Medium Beam 30°	—				
	Lamp used	LED module	—				
	Lamp control gear used	P08013 POWER PACK 2000	—				
	Mounting position of luminaire	Mounted on wall	—				
	Supply wattage (W).....	74,6 W	—				
	Supply current (A)		—				
	Temperatures in test 1 - 4 below are corrected for ta (°C)	50°C	—				
	- abnormal operating mode		—				
1.12 (12.4)	- test 1: rated voltage	48 Vdc	—				
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current		—				
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage		—				
	Through wiring or looping-in wiring loaded by a current of A during the test		—				
1.12 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current		—				
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Glass enclosure middle point	50	66			90		
Glass enclosure	50	59			90		
Mounting metal surface	50	52			90		
Mounting metal surface top side	50	63			90		
Connector	50	53			cl.13.2.1		
Supply cord	50	56			90		
LED tc point	50	70			85		
LED lens	50	66			cl.13.2.1		
PCB	50	59			90		
Supplementary information:							

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	Screw terminals (part of the luminaire)		N/A
(14)	SCREW TERMINALS		N/A
(14.2)	Type of terminal		—
	Rated current (A)		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm ²)		—
(14.3.3)	Conductor space (mm)		N/A
(14.4)	Mechanical tests		—
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm).....		N/A
	Torque (Nm).....		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....		N/A
(14.4.8)	Without undue damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 4	Screwless terminals (part of the luminaire)		N/A
(15)	SCREWLESS TERMINALS		N/A
(15.2)	Type of terminal		—
	Rated current (A)		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples)		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples)		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		—
	Voltage drop (mV) after 1 h (4 samples)		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		—

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Clause	Requirement + Test	Result - Remark	Verdict

	Terminal size and rating		N/A
15.6.2	Mechanical tests		—
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N)		N/A
(15.6.3)	Electrical tests		—
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	TABLE: Contact resistance test / Heating tests										N/A
	Voltage drop (mV) after 1 h										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop of two inseparable joints										
	Voltage drop after 10th alt. 25th cycle										
	Max. allowed voltage drop (mV).....:										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop after 50th alt. 100th cycle										
	Max. allowed voltage drop (mV).....:										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 10th alt. 25th cycle										
	Max. allowed voltage drop (mV).....:										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 50th alt. 100th cycle										
	Max. allowed voltage drop (mV).....:										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
Supplementary information:											

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX 1: List of test equipment used:

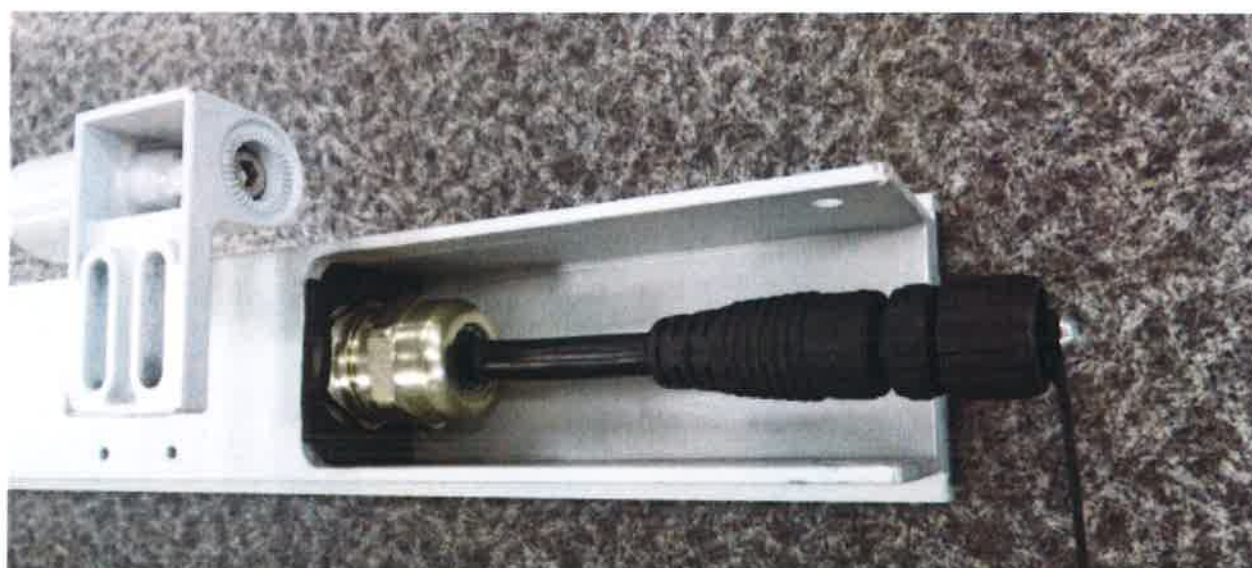
Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Last Calibration date	Calibration due date
9.3	Humidity test	Climate chamber / WELLTECH (EL1-195)	2019/02	2021/02
Cl.10.2.1 Cl.10.2.1 Cl.7.2.3	Insulation resistance, Electric strength, Earth test	Multitester / Metrel / MI 3394 (EL1-203)	2019/05	2020/05
Cl.5.2	Tests for cord anchorage	Digital Force Guage / Handy 112438 (EL1-110)	2019/09	2021/09
Cl.12.4	Calculated power factor and Heating test	Digital Multimeter / Fluke/ 600 V CAT III 15B+ (EL1-209)	2019/06	2020/06
Cl.13.2.1, Cl.5.2, Cl.5.3	Ball Pressure, Supply cable, Internal wiring	Digital Calipper / Mitutoyo / CD-6" CK (EL2-101)	2019/06	2020/06
Cl.12.4	Heating	Data Acquisition / Agilent / 34972A / MY49012456 (EL1-163)	2019/09	2021/09
Cl.12.4	Heating	20 Channel Multiplexer / Agilent / 34901A / MY41168649 (EL1-164)	2019/09	2021/09
Cl.12.3	Endurance test	Climats / WELLTECH / YTH960 (EL1-174)	2019/02	2021/02
Cl.13.2.1	Ball Pressure	Ball Pressure test / Etüv Nüve / FN400 / 01-2219 (EL1-31)	2019/12	2021/12
Cl.13.2.1	Ball Pressure	Dual channel Thermometer / Fluke / 52-2 (EL1-222)	2018/10	2020/10
Cl.13.2.1	Ball Pressure	15x Zoom scale lens / GWJ Co (EL1-149)	2019/12	2024/12
Cl.13.3.1	Needle flame	Needle Flame Test Apparatus / Systemak (EL1-111)	---	---
Cl.13.3.2	Glow-wire	Glow-Wire Test Device / EMS / GW-2003 (EL1-102)	2019/12	2021/12
Cl.13.4	Resistance to tracking	Tracking Test Equipment / Kema (EL1-43)	2019/12	2021/12
Cl.13.2.1 Cl.5.2	Ball Pressure, Tests for cord anchorage	Timer / CP / 94410-10 (EL1-172)	2018/10	2020/10
3.6.5.2.1 (-)	Impact test	The vertical hammer equipment / KBS (EL1-185)	---	---
3.6.5.2.1 (-)	Impact test	IK09 The vertical hammer / KBS (EL1-182)	2020/01	2025/01

IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

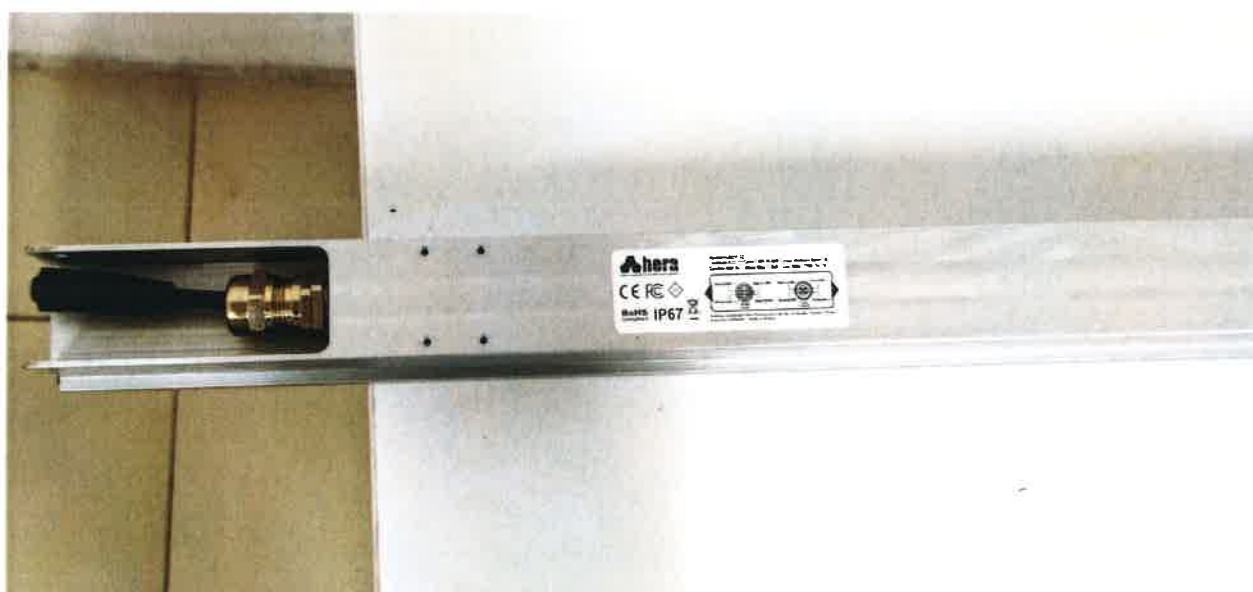
APPENDIX 2: Photos of product



IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict



IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict



IEC 60598-2-5			
Clause	Requirement + Test	Result - Remark	Verdict



IEC 60598-2-5 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX 3:

ATTACHMENT TO TEST REPORT IEC 60598-2-5 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Luminaires Part 2: Particular requirements Section 5: Floodlights	
Differences according to	EN 60598-2-5:2015 used in conjunction with EN 60598-1:2015 + A1:2018
Annex Form No.	EU_GD_ESIM60598_2_5F
Annex Form Originator	ESIM
Master Annex Form	2019-01-24

	CENELEC COMMON MODIFICATIONS (EN)	
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5.5 (3)	MARKING	
5.5 (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package	N/A

5.6 (4)	CONSTRUCTION	
5.6 (4.11.6)	Electro-mechanical contact systems	N/A

5.10 (5)	EXTERNAL AND INTERNAL WIRING	
5.10 (5.2.1)	Connecting leads	N/A
	- without a means for connection to the supply	N/A
	- terminal block specified	N/A
	- relevant information provided	N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	N/A
5.10 (5.2.2)	Cables equal to EN 50525	Class III, 48 Vdc
	Replace table 5.1 – Supply cord	N/A

IEC 60598-2-5 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.12 (12)	ENDURANCE TESTS AND THERMAL TESTS		—
5.12 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring	No unsleeved fixed wiring	N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		—
(3.3)	DK: power supply cords of class I luminaires with label		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, GB: type of plug		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		—
(4 & 5)	FR: Shuttered socket-outlets 10/16A		—
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		—
	- 850°C for luminaires in stairways and horizontal travel paths		N/A
	- 650°C for indoor luminaires		N/A
	GB: Requirements according to United Kingdom Building Regulation		N/A

APPENDIX 4 : Retinal blue light hazard test report issued by TSE

 TSE		TÜRKAK - TÜRK AKREDITASYON KURUMU tarafından akredite Accredited by TÜRKAK TSE DENEY ve KALİBRASYON MERKEZİ BAŞKANLIĞI Elektroteknik Laboratuvarı Gebze Müdürlüğü					
Adres: TSE Kahve Kampüsü Cumhuriyet Mah. 2258 Sk. No: 10 H-Blok, Çayırova Tirm (İstasyon) Yarı Gebze/ Kocaeli Tel: +90 (262) 723 1526 Fax: +90 (262) 723 16 20 E-posta: elektrotekniklab@tse.org.tr Web: www.tse.org.tr		Adres: TSE Kahve Kampüsü Cumhuriyet Mah. 2258 Sk. No: 10 H-Blok, Çayırova Tirm (İstasyon) Yarı Gebze/ Kocaeli Tel: +90 (262) 723 1526 Fax: +90 (262) 723 16 20 E-posta: elektrotekniklab@tse.org.tr Web: www.tse.org.tr		Adres: TSE Kahve Kampüsü Cumhuriyet Mah. 2258 Sk. No: 10 H-Blok, Çayırova Tirm (İstasyon) Yarı Gebze/ Kocaeli Tel: +90 (262) 723 1526 Fax: +90 (262) 723 16 20 E-posta: elektrotekniklab@tse.org.tr Web: www.tse.org.tr		Adres: TSE Kahve Kampüsü Cumhuriyet Mah. 2258 Sk. No: 10 H-Blok, Çayırova Tirm (İstasyon) Yarı Gebze/ Kocaeli Tel: +90 (262) 723 1526 Fax: +90 (262) 723 16 20 E-posta: elektrotekniklab@tse.org.tr Web: www.tse.org.tr	
HEADSHIP OF TSE TEST and CALIBRATION CENTER ELECTROTECHNICAL LABORATORY (GEBZE)		HEADSHIP OF TSE TEST and CALIBRATION CENTER ELECTROTECHNICAL LABORATORY (GEBZE)		HEADSHIP OF TSE TEST and CALIBRATION CENTER ELECTROTECHNICAL LABORATORY (GEBZE)		HEADSHIP OF TSE TEST and CALIBRATION CENTER ELECTROTECHNICAL LABORATORY (GEBZE)	
MUAYENE VE DENEY RAPORU TEST REPORT		MUAYENE VE DENEY RAPORU TEST REPORT		MUAYENE VE DENEY RAPORU TEST REPORT		MUAYENE VE DENEY RAPORU TEST REPORT	
Deneyi Talep Eden/Firma : ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.		Deneyi Talep Eden/Firma : ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.		Deneyi Talep Eden/Firma : ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.		Deneyi Talep Eden/Firma : ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.	
(Adı, Adresi, Şehri vb.) Requesting/Customer (Name, Address (city etc))		(Adı, Adresi, Şehri vb.) Requesting/Customer (Name, Address (city etc))		(Adı, Adresi, Şehri vb.) Requesting/Customer (Name, Address (city etc))		(Adı, Adresi, Şehri vb.) Requesting/Customer (Name, Address (city etc))	
Deney Talep Tarihi/No : 15.10.2019 / 351372 Order Date / No		Deney Talep Tarihi/No : 15.10.2019 / 351372 Order Date / No		Deney Talep Tarihi/No : 15.10.2019 / 351372 Order Date / No		Deney Talep Tarihi/No : 15.10.2019 / 351372 Order Date / No	
Numunenin Tanımı : 544114, PROJEKTÖR, HERA P02024102, 100 adet (No, Class, Marka, Tip, Tür, Model vb.) Sample Description (No, Type, Mark, Model etc)		Numunenin Tanımı : 544114, PROJEKTÖR, HERA P02024102, 100 adet (No, Class, Marka, Tip, Tür, Model vb.) Sample Description (No, Type, Mark, Model etc)		Numunenin Tanımı : 544114, PROJEKTÖR, HERA P02024102, 100 adet (No, Class, Marka, Tip, Tür, Model vb.) Sample Description (No, Type, Mark, Model etc)		Numunenin Tanımı : 544114, PROJEKTÖR, HERA P02024102, 100 adet (No, Class, Marka, Tip, Tür, Model vb.) Sample Description (No, Type, Mark, Model etc)	
Numune Kabul Tarihi : 15.10.2019 Test Item Receipt Date		Numune Kabul Tarihi : 15.10.2019 Test Item Receipt Date		Numune Kabul Tarihi : 15.10.2019 Test Item Receipt Date		Numune Kabul Tarihi : 15.10.2019 Test Item Receipt Date	
Deneylerin Yapıldığı Tarih : 22.10.2019 - 23.10.2019 Date of Test		Deneylerin Yapıldığı Tarih : 22.10.2019 - 23.10.2019 Date of Test		Deneylerin Yapıldığı Tarih : 22.10.2019 - 23.10.2019 Date of Test		Deneylerin Yapıldığı Tarih : 22.10.2019 - 23.10.2019 Date of Test	
Uygulanan Standard / Metod : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler		Uygulanan Standard / Metod : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler		Uygulanan Standard / Metod : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler		Uygulanan Standard / Metod : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler	
Applied Standard/Method : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler		Applied Standard/Method : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler		Applied Standard/Method : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler		Applied Standard/Method : TS EN 60598-2-5:2016-02 Aydınlatma armatürleri - Bölüm 2: Özel kurallar - Kısım 5 Projectörler	
Raporun Sayfa Sayısı : 11 Number of pages of the report		Raporun Sayfa Sayısı : 11 Number of pages of the report		Raporun Sayfa Sayısı : 11 Number of pages of the report		Raporun Sayfa Sayısı : 11 Number of pages of the report	
Açıklamalar : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made		Açıklamalar : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made		Açıklamalar : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made		Açıklamalar : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made	
Remarks : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made		Remarks : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made		Remarks : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made		Remarks : Yalnızca Madde 4.24.2 Retinal Mavi Işık Tehlikesi deneyi yapılmıştır 17.10.2019/494651 tarihli rapor iptal edilmiş olup yerine bu rapor düzenlenmiştir Yapılan deneyler yönünde UYGUNDUR It has PASSED according to the tests that were made	
Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşmasını imzalamıştır. The Turkish Accreditation Agency (TÜRKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation (EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognition of test reports. Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report. Numune müşteri tarafından alınmıştır, bu rapordaki sonuçlar numunenin teslim alındığı hali için geçerlidir. Bu rapor özel deney talebine istinaden düzenlenmiş olup, standartlara uygunluk Belgesi niteliğinde değildir. Pazarı temsil etmez. Piyasa Gözetim ve Denetim Faaliyetlerine esas oluşturamaz. İlan, reklam ve ihalelerde 6102 sayılı Türk Ticaret Kanunu'nun 54. ve 55. Maddelerinde yer alan haksız rekabet hükümlerine aykırılık teşkil edecek şekilde kullanılamaz. Söz konusu hesapları aykırı hareket edilmesi halinde hukuki ve cezai açıdan TSE sorumlu tutulamaz. The sample was taken by the customer and the results in this report are valid for the status of the sample being received. This report has been prepared in accordance with the request for special tests and is not qualified as a Certificate of Conformity to Standards. It does not represent the party does not constitute a basis for Market Surveillance and Audit Activities and cannot be used in announcements, advertisements and tenders in contradiction with the provisions of unfair competition in Articles 54 and 55 of the Turkish Commercial Law No. 6102. TSE cannot be held responsible in case of irregularity of the results in legal and criminal terms.							
Mühür Seal		Tarih Date		Deney Sorumlusu Person in charge of tests		Kontrol Eden Reviewer	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
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		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	
		22.10.2019		Ebru AKÇAY ŞENGELİ Deney Personeli Testing Expert		Gökhan GÖKLER TANIŞLI Bölüm Sorumlusu Division Head	



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DENEY RAPORU IEC 60598-2-5 Aydınlatma Armatürleri Bölüm 2: Özel Kurallar: Kısım 5: Projektörler	
Rapor No	494649
Yayın Tarihi	10-19
Toplam sayfa sayısı	11
Raporu hazırlayan test laboratuvarının adı	TSE Elektroteknik Laboratuvarın Gebze Müdürlüğü
Talep Eden	ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.
Adres	TOSB Otomotiv Yan San. İhtisas O.S.B 2.Cad 17. Sk. No:2/5 41420 Şekerpınar – ÇAYIROVA / KOCAELİ
Test Spesifikasyonları:	
Standart	IEC 60598-1:2015 + AMD1:2017 ile birlikte kullanılan IEC 60598-2-5:2014
Test prosedürü	TSE
Standart dışı metot	N/A
Test Rapor Form No	IEC60598_2_5F
Test Report Form(s) Originator	Intertek Semko AB
Master TRF	Dated 2018-04-06
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General sorumluluk reddi:	
Bu deney raporunda sunulan test sonuçları yalnızca test edilen nesne ile ilgilidir. Bu test raporunun tamamı hariç bir bölümü onaylanmış CB test laboratuvarının yazılı onayı olmadan çoğaltılamaz. Bu Deney Raporu ve içeriğinin doğruluğunu bu Deney Raporundan sorumlu NCB temas yoluyla doğrulanabilir.	





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Numunenin Tanımı		PROJEKTÖR
Ticari Marka		HERA
Üretici		ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.
Model/Tip Referansı		P02024102
Anma Değerleri		48VDC, 1,56Amax, 75Wmax
Sorumlu Test Laboratuvarı (uygulanabilir ise), test prosedürü ve test yer(ler)i :		
☐	CB Deney Laboratuvarı:	TSE Elektroteknik Laboratuvarı Gebze Müdürlüğü
Deney yapılan yer/ adres		Cumhuriyet Mah. 2258 Sok. No:10
		Çayırova Tren İstasyonu Yanı Gebze / KOCAELİ
☐	Onaylanmış CB Laboratuvarı:	
Deney yapılan yer/ adres		
Deneyi yapan (adı, görevi, imzası)		Kapak sayfasına bakınız.
Onaylayan (adı, görevi, imzası)		Kapak sayfasına bakınız.
☐	Test prosedürü : CTF Seviye 1:	
Deney yapılan yer/ adres		
Deneyi yapan (adı, görevi, imzası)		
Onaylayan (adı, görevi, imzası)		
☐	Test prosedürü : CTF Seviye 2:	
Deney yapılan yer/ adres		
Deneyi yapan (adı, imzası)		
Gözlemleyen (adı, görevi, imzası)		
Onaylayan (adı, görevi, imzası)		
☐	Test prosedürü : CTF Seviye 3 :	
☐	Test prosedürü : CTF Seviye 4 :	
Deney yapılan yer/ adres		
Deneyi yapan (adı, görevi, imzası)		
Gözlemleyen (adı, görevi, imzası)		
Onaylayan (ad, görevi, imzası)		
Denetleyen (adı, görevi, imzası)		





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Eklerin Listesi (her bir ekteki sayfaların toplam sayısını ekleyerek

Deney özeti:**Uygulanan deney (deneyin adı ve maddesi);**

TS EN 60598-1 Madde 4.24.2- Retinal mavi
ışık tehlikesi deneyi

Deney yapılan yer:

TSE Elektroteknik Laboratuvarı
Gebze Müdürlüğü

Cumhuriyet Mah. 2258 Sok. No:10
Çayırova Tren İstasyonu Yanı

Gebze / KOCAELİ

Ulusal farklılıklara uyum özeti:**Adreslenmiş ülkelerin listesi:**



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İşaretleme Plakasının Örneği



Deney numunesinin ayrıntıları	:
Yalıtımın sınıfı ve kullanımı	--
Besleme bağlantısı	--
Muhtemel Deney Hükümleri:	
- İlgili deney, numuneye uygulanmaz	-- (Uygulanmaz)
- Numune ilgili deneyden geçmiştir	G (Geçti)
- Numune ilgili deneyden geçmemiştir	K (Kaldı)
Deney	:
Numunenin alındığı tarih	15.10.2019
Deney performans tarihleri	22.10.2019 – 23.10.2019





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Genel uyarılar:

"(Bkz. Açıklama #)" Test raporuna eklenmiş açıklamaya atıf yapar.

"(Bkz. Ekli tablo)" Test raporuna eklenmiş ek kısımlarına yapar.

Bu raporda ondalık ayırıcı olarak ☒ virgöl / ☐ nokta kullanılmıştır.

IECEE 02 - Madde 4.2.5 için Üreticinin Beyanı:

Birden fazla üretim yeri ve üreticiden değerlendirme için alınan numunenin/numunelerin her bir fabrikadan sağlanan ürünlerinin temsili olduğunu belirten bir beyan içerdiği durumda bir CB test sertifikası edinmek için olan uygulama ☐ Evet ☒ Uygulanmaz

Farklılıklar varsa ürün hakkında genel bilgi bölümünde tanımlanmalıdır.

Üretim yer(ler)inin adı ve adresi : ESİM TEST HİZMETLERİ SAN. VE TİC. A.Ş.
TOSB Otomotiv Yan San. İhtisas O.S.B 2.Cad 17. Sk
No:2/5 41420 Şekerpınar – ÇAYIROVA / KOCAELİ

Ürün hakkında genel bilgi:



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IEC 60598-2-5			
Madde	Kural + Deney	Sonuç - Açıklama	Karar
5.4 (0+2)	ARMATÜRLERİN SINIFLANDIRILMASI		
5.4(0)	Genel gereksinimler ve testler		
5.4 (0.3)	Uygulanabilir ek kısımlar	Evet ☐ Hayır ☒ Kısım (lar) :	—
5.4 (0.5)	Bileşenler	(Bakınız Ek 1)	—
5.4 (0.7)	Işık kaynağı standartlarında armatür tasarımı için bilgi		
5.4 (0.7.2)	Işık kaynağı güvenlik standardı	Lamba standardı: TS EN 62471 ile birlikte IEC TR 62778: Risk Grup RG2	—
	Işık kaynağı güvenlik standardında armatür tasarımı		—
5.4 (2)	Armatürlerin sınıflandırılması		

5.5 (3)	İŞARETLEME	—
---------	-------------------	---

5.6 (4)	YAPILIŞ	
5.6 (4.2)	Bileşenlerin zorluk çekmeden değiştirilmesi	—
5.6 (4.3)	Tel yollarının düz ve keskin yüzeysiz olması	—
5.6 (4.4)	Lamba duyları	—
5.6 (4.5)	Yolverici duyları	—
5.6 (4.6)	Bağlantı ucu blokları	—
5.6 (4.7)	Bağlantı uçları ve besleme bağlantıları	—
5.6 (4.8)	Anahtarlar:	—
5.6 (4.9)	Yalıtkan kaplamalar ve manşonlar	—
5.6 (4.10)	Çift ve takviyeli yalıtım	—
5.6 (4.11)	Elektriksel bağlantılar ve akım taşıyan bölümler	—
5.6 (4.12)	Vidalar, mekanik bağlantılar ve salmastralar	—
5.6 (4.13)	Mekanik dayanım	—
5.6 (4.14)	Askılar, sabitleme ve ayar elemanları	—
5.6 (4.15)	Alevlenebilir malzemeler	—
5.6 (4.16)	Normal olarak alevlenebilen yüzeyler üzerine monte edilen aydınlatma armatürleri	—
5.6 (4.17)	Boşaltım delikleri	—
5.6 (4.18)	Korozyona dayanıklılık:	—
5.6 (4.21)	Koruyucu siper:	—
5.6 (4.24)	Fotobiyolojik zararlar	—
5.6 (4.24.1)	Tungsten halojenür ve Metal halojenür lambalarda fazla UV radyasyonu olmaması (Ek P)	—



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IEC 60598-2-5			
Madde	Kural + Deney	Sonuç - Açıklama	Karar
5.6 (4.24.2)	Retinal Mavi Işık zararı		
	IEC/TR 62778'e göre risk sınıfı değerlendirme	RG2	—
	E _{mv} 'li aydınlatma armatürleri:		
	a)Sabit aydınlatma armatürleri		G
	- mesafe x m, RG1 ve RG2 arası sınır çizgisi	>25 m (Laboratuvarımız imkanlarıyla tespit edilen maksimum mesafe 25 m'dir.)	G
	- 3.2.23 e göre işaretleme ve talimatname	Kullanıma kılavuzu olmadığından değerlendirilememiştir.	—
	b)Taşınabilir ve elde kullanılan aydınlatma armatürleri		—
	- IEC/TR 62778'e göre 200mm'de RG1'i aşarsa 3.2.23'e göre işaretleme		—
	IEC 60598-2-10 kapsamında çocuklar için taşınabilir aydınlatma armatürleri ve IEC 60598-2-12 kapsamında şebeke prizine takılarak kullanılan gece lambaları armatürlerinin IEC/TR 62778'e göre RG1 200mm'de RG1'i aşmaması		—
5.6 (4.25)	Mekanik tehlikeler		—
5.6 (4.26)	Kısa devre koruması:		—
5.6 (4.27)	Birleşik vidasız topraklama kontaklı bağlantı ucu blokları		—
5.6 (4.28)	Sıcaklık algılama kontrolünün sabitlenmesi		—
5.6 (4.29)	Değiştirilemez ışık kaynaklı aydınlatma armatürleri		—
5.6 (4.30)	Kullanıcı olmayanlar tarafından değiştirilebilir ışık kaynaklı aydınlatma armatürleri		—
5.6 (4.31)	Devreler arası yalıtım		—
5.6 (4.32)	Aşın Gerilim koruma aletleri		—
5.7 (11)	YÜZEYSEL KAÇAK YOLU UZUNLUKLARI VE YALITIM ARALIKLARI		—
5.8 (7)	TOPRAKLAMA DÜZENLERİ		—
5.9 (14)	VİDALI BAĞLANTI UÇLARI		—
5.9 (15)	VİDASIZ BAĞLANTI UÇLARI VE ELEKTRİKSEL BAĞLANTILAR		—
5.10 (5)	DIŞ VE İÇ İLETKENLER		—
5.11 (8)	ELEKTRİK ÇARPMALARINA KARŞI KORUMA		—
5.12 (12)	DAYANIKLILIK DENEYİ VE ISIL DENEY		—





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IEC 60598-2-5			
Madde	Kural + Deney	Sonuç - Açıklama	Karar
5.13 (9)	TOZA, KATI CİSİMLERE VE NEME KARŞI KORUMA		--
5.14 (10)	YALITIM DİRENCİ VE ELEKTRİKSEL DAYANIKLILIK		--
5.15 (13)	ISIYA, YANMAYA VE YÜZEYSEL KAÇAKLARA KARŞI DAYANIKLILIK		--
5.7 (11.2)	TABLO I: Yüzeysel kaçak yolu ve yalıtım aralıkları		--
5.7 (11.2)	TABLO II: Yüzeysel kaçak yolu ve yalıtım aralıkları		--
5.15 (13.2.1)	TABLO: Termoplastiklerin Bilye Basınç Deneyi		--
5.15 (13.3.1)	TABLO: İğne alev deneyi (IEC 60695-11-5)		--
5.15 (13.3.2)	TABLO: Kızaran tel deneyi (IEC 60695-2-11)		--
5.15 (13.4)	TABLO: Yüzeysel kaçak deneyi (IEC 60112)		--
EK 1	TABLO: Kritik bileşen bilgileri		--
EK 2	TABLO: Sıcaklık ölçümleri, Kısım 12'deki ısınma testi		--
EK 3	Vidalı Bağlantı Uçları (armatür bölümü)		--
EK 4	Vidasız Bağlantı Uçları (armatür bölümü)		--
(15.6.3.1) (15.6.3.2)	TABLO: Kontak direnci testi		--





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Numunenin Fotoğrafları

TRF No IEC60598_2_5F
LAB D-FR-36.22.07 2019:5

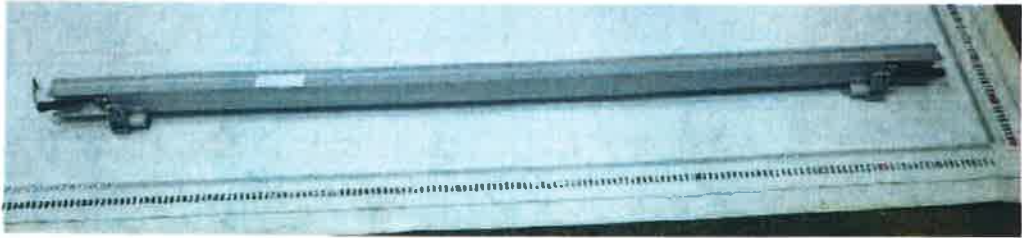
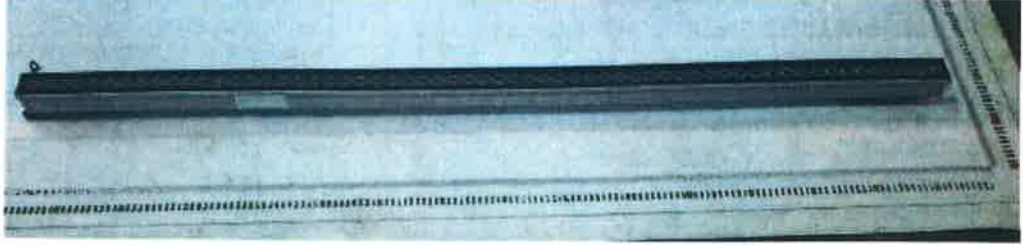
Sayfa 10 / 11

TRF No. ESİM60598_2_5F
RA510-L00-00-T/E

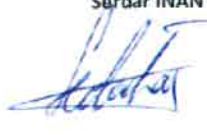


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APPENDIX 5 : Sinusoidal vibration test report issued by GCNTR Uluslararası Belgelendirme, Gözetim, Eğitim ve Dış Tic. Ltd. Şti.

	GCNTR ULUSLARARASI BELGELENDİRME, GÖZETİM, EĞİTİM VE DİŞ TİC. LTD. ŞTİ. Çerkeşli OSB Mah. İMES OSB 18. Cad. A4/2 No 41/2 Dilovası – Kocaeli / TÜRKİYE	  Türk Akreditasyon Kurumu (TÜRKAK) Türk Akreditasyon Birliği (TAKB) AB-1272-T
Deney Raporu Test Report		AB-1272-T GTL ENV T. 341/19 28.11.2019
Müşterinin adı/ Adresi Customer name / address	ESİM Test Hizmetleri San. ve Tic. A.Ş. TOSB Otomotiv Yan Sanayi İhtisas O.S.B. 2.Cad. 17.Sok. No: 2/5 41420 Çayırova/Kocaeli/Türkiye/Turkey	
İstek numarası Order No.	GTL 0336	
Numune Adı ve tarifi Name and identity of the test item	LED Wallwashing Product / LED Wallwasher Armatür	
Numunenin kabul tarihi The date of receipt of the test item	25.11.2019	
Açıklamalar Remarks		
Deneyin yapıldığı tarih Date of the test	25.11.2019	
Ürün no Sample Number	GTL S-1066	
Raporun sayfa sayısı Number of pages of the report	5	
Deney laboratuvarı olarak faaliyet gösteren GCNTR ULUS.BELG.GÖZ.EĞT.VE DİŞ TİC.LTD ŞTİ., TÜRKAK'tan AB-1272 T ile TS EN ISO17025 standardına göre akredite edilmiştir. GCNTR ULUS.BELG.GÖZ.EĞT.VE DİŞ TİC.LTD ŞTİ. accredited by TURKAK under registration number AB 1272 T for EN ISO17025 as test laboratory" Türk Akreditasyon Kurumu(TURKAK) deney raporlarının tanınırılığı konusunda Avrupa Akreditasyon Birliği(EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olmasa halinde) ve deney metodları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.		
Tarih/ Mühür Date/Seal	Deney Sorumlusu Person in charge of test	Laboratuvar Müdürü Head of Testing Laboratory
28.11.2019 	Serdar İNAN 	Sebahattin ÇAY 



GCNTR ULUSLARARASI BELGELENDİRME, GÖZETİM,
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Çerkeşli OSB Mah. İMES OSB 18. Cad. A4/2 No.41/2
Dilovası – Kocaeli / TÜRKİYE

Deney Raporu
Test Report

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GTL-ENV-T-341/19

28.11.2019

İçindekiler Tablosu

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Bu rapor sadece test edilen numune için geçerlidir. / This report only applies to the sample tested. Report No: GTL- ENV -T-341/19
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Dilovası – Kocaeli / TÜRKİYE

Deney Raporu
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AB-1272-T

GTL ENV-T-341/19

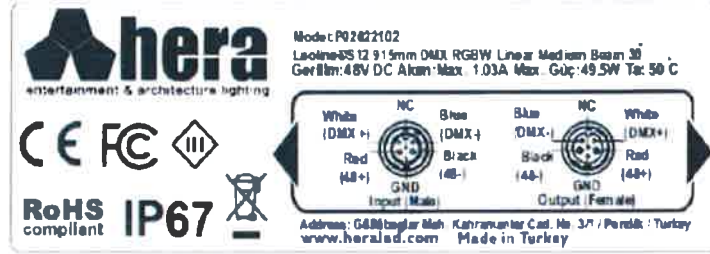
28.11.2019

1. Documentation/Dokümantasyon

1.1 Description of the EUT / Test numunesinin tanımı

Test samples subject to the test

Product Name	Model/Serial Number	Samples No
LED Wallwashing Product	P02022102	GTLS-1066



Label

1.2 Environmental Condition, Symbol Definitions/Çevre Koşulları ve Sembollerin Tanımları

- Test case does not apply to the test object/ Uygulanmaz/ Uygulanmadı.....: N/A
- Test object meets the requirement/ Ürün gereksinimi karşılar.....: P (Pass) / Geçti
- Test object does not meet the requirement / Ürün gereksinimi karşılamaz: F (Fail) / Kaldı
- Environmental Conditions/ Çevre Koşulları : °C , % RH, m/s

1.3 Test Standards /Deney Standartları

EN 60068-2-6



Bu rapor sadece test edilen numune için geçerlidir / This report only applies to the sample tested.

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Dilovası – Kocaeli / TÜRKİYE

Deney Raporu
Test Report

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2. Test Result/ Deney Sonuçları

Madde (Clause)	Kural (Requirement)	Sonuç -Açıklama (Result - Remark)	Karar (Verdict)
4	Requirements for testing		
4.1	Required characteristics		PASS
		The product is placed in the vibration device	PASS
		Sweep: 10 – 55 Hz 0,35 mm	PASS
		Sweep rate : 1 octave/min	
		Tarama hızı, dakikada 1 oktav	PASS
4.2	Control strategy	One control sensor-single control	PASS
4.3	Mounting	The mounting photos are given in point 3.2.	PASS
5	Severities		PASS
5.1	Frequency range	10 – 55 Hz	PASS
5.2	Vibration amplitude	10 – 55 Hz 0,35 mm	PASS
5.3	Duration of endurance	resonance frequency was not found in the sweep test	PASS
6	Preconditioning	pre-conditioning has not been made.	N/A
7	Initial measurements.	Functional tests were performed by company personnel.	PASS
8.1	Testing		
		The product has been tested on one axes: Z axis. The control point was taken over the fixture after the axis test was finished, functional control was performed. It has been tested without product packaging.	PASS



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Madde (Clause)	Kural (Requirement)	Sonuç -Açıklama (Result - Remark)	Karar (Verdict)
8.2	Vibration response investigation	See 3.1	PASS
8.3	Endurance <i>procedures</i> .		N/A
9	Intermediate measurements	After each axis is tested, functional control is <i>performed</i> .	PASS
10	Recovery	Functional check was performed 10 minutes after the test	PASS
11	Final measurements	After completion on one axes, functional control of the product was carried out by the company personnel.	PASS

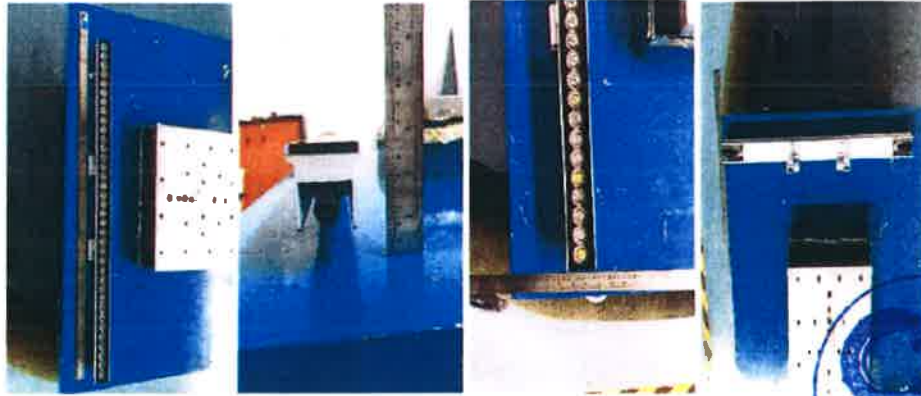
3. Attachments/Ekler

3.1 Test photos and data of vibration(CD)

3.2 List of Test Equipment/Test ekipman Listesi

Name	Calibration date	Next Calibration date	Serial Number
Vibration Test Device Control Unit	02.07.2019	02.07.2020	GTLE-0011-A

3.3 Photos of EUT /Deney Numunesinin Fotoğrafları



Bu rapor sadece test edilen numune için geçerlidir. / This report only applies to the sample tested

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GCNTR VIBRATION/SHOCK TEST REPORT

Report time: Nov-25-2019, 11:24:23

Data measured at: Nov-25-2019, 11:24:23

Test name:

Test type: VCS (Swept Sine)

Test status: Test Running

Run folder: Run20 Nov 25, 2019 10-36-09

Remaining: 00:00:00

Total elapsed: 00:38:17

Full level elapsed: 00:30:02

Sweeping Rate: 1 Oct/Min

Sweep Number: 13

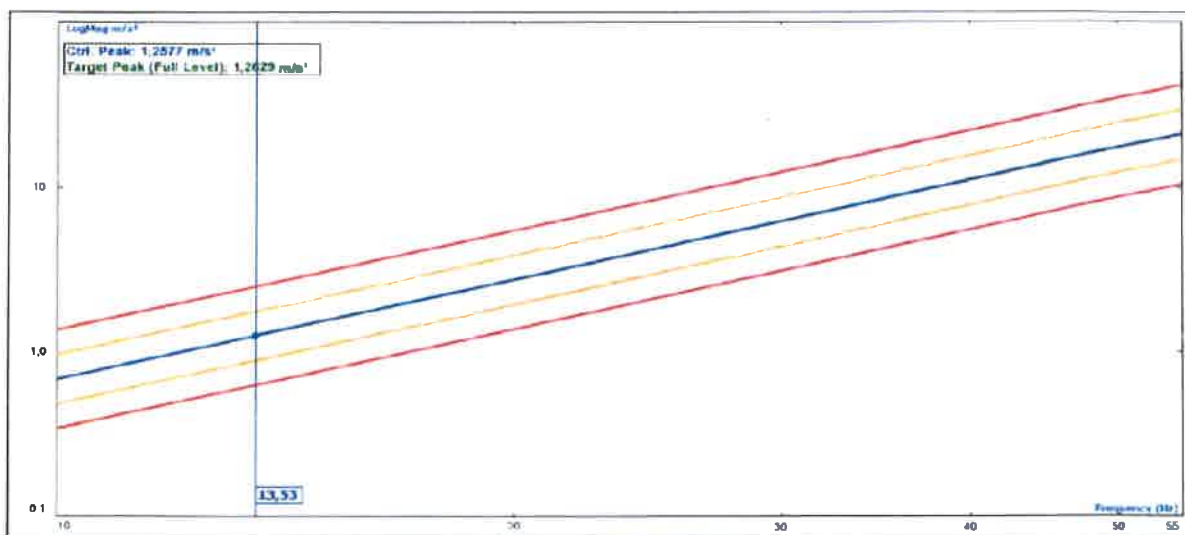
Frequency: 13,53 Hz

Signal Plot Points: 1024

Sweep Type: Logarithmic

Run Start Time: Nov-25-2019, 10:36:27

Control Composite



Total elapsed: 00:38:17

Full level elapsed: 00:30:02

Sweeping Rate: 1 Oct/Min

Sweep Number: 13

Frequency: 13,53 Hz

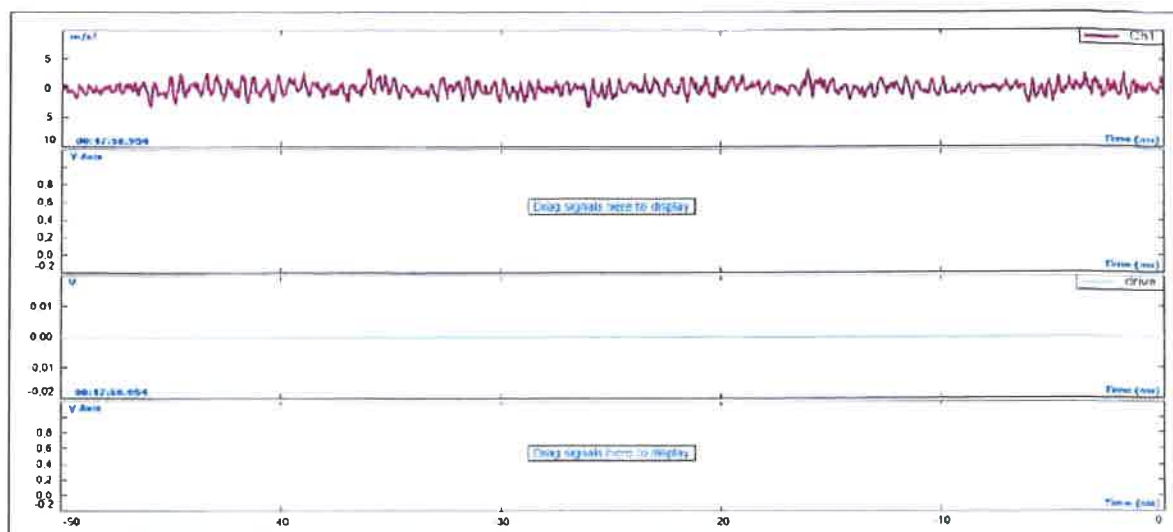
Signal Plot Points: 1024

Sweep Type: Logarithmic

Run Start Time: Nov-25-2019, 10:36:27

All Views

(Ch1 drive)



Total elapsed: 00:38:17

Sweep Number: 13

Sweep Type: Logarithmic

Full level elapsed: 00:30:02

Frequency: 13,53 Hz

Run Start Time: Nov-25-2019, 10:36:27

Sweeping Rate: 1 Oct/Min

Signal Plot Points: 1024

Channel Status

Device name: SN: 1320544

Location ID	Status	Unit	Min	Max	RMS	Pk	Overload
Ch1	Enabled	m/s ²	-3,23982	4,04377	1,12469	4,04377	No
Ch2	Enabled	m/s ²	-0,61638	0,77411	0,35281	0,77411	No

Test Parameters

Signal Plot Points: 1024

Drive limit (V Pk): 3

Compression Rate: Fast

Bandwidth (%): 25

Ramp Rate: Slow

Initial drive (V): 0,005

Sweep Type: Logarithmic

Measurement Strategy: Proportional Filter

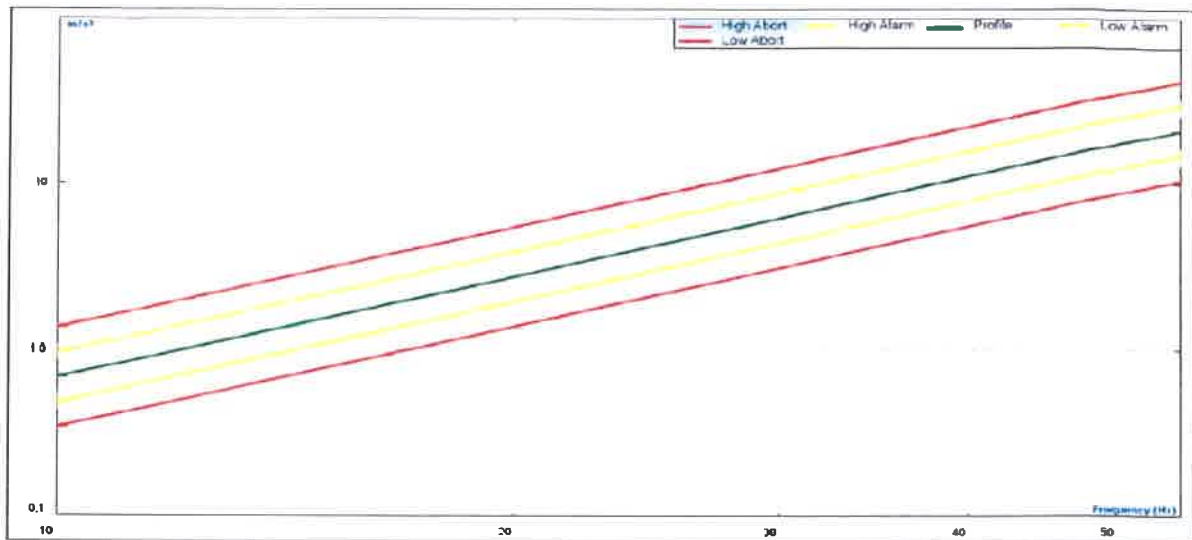
Abort sensitivity: 0,50

Input Channel Table

Location ID	On/Off	Measurement Quantity	Unit	Sensitivity	Input Mode	High-Pass Filter Fc	Description
Ch1	On	Acceleration	m/s ²	1,00340075357028 (pC/(m/s ²))	Charge-10000pc	1,00 Hz	
Ch2	On	Acceleration	m/s ²	2,316 (pC/(m/s ²))	Charge-10000pc	1,00 Hz	

Location ID	Channel Type	Sensor S/N	Max Range	Sensor	Input Range	Control Weighting	Integration Differentiation	/
Ch1	Control		20,0000 (V)		Auto	N/A	No Integration	
Ch2	Monitor		20,0000 (V)		Auto	N/A	No Integration	

Testing Profile



Frequency	Acceleration	Velocity	Displacement	Segment Type	High Abort	High Alarm	Low Alarm	Low Abort
10 Hz	0,690872 m/s ²	0,0109956 m/s	0,35 mm		6 dB	3 dB	-3 dB	-6 dB
				Log-Log Const. Slope				
55 Hz	20,8989 m/s ²	0,0604757 m/s	0,35 mm		6 dB	3 dB	-3 dB	-6 dB

Check against Shaker

Physical Quantity	Max. Profile Value	Shaker Limits	Profile/Shaker Limits
Acceleration (m/s ²)	20,899 (Peak)	4808,5 (Pk)	0,4%
Pk Velocity (m/s)	0,060476	1,45 (Pk)	4,2%
Peak-Peak Displacement (mm)	0,35	26 Peak-Peak	1,3%
Pk Force (Newton)	522,47	19613 (Pk)	2,7%

Run Schedule

12,19793 Sweeps; Start: 10Hz; Range: 10Hz to 55Hz; Level: 100,00%; Duration: 00:30:00
My Report (Create Report(My Report))

Software Screenshot