

Müşteri Adı / Adresi: ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti
Client name/address : Abdurrahmangazi, Sevenler CD. BİNA NO 55 D:5, 34887 Sancaktepe/İstanbul

İş Emri No: 250930-08
Work Order No:

Test Edilen Ürün: YFB-200, Acil Durum Aydınlatma Kiti
Items tested: YFB-200, Emergency Lighting Kit

Açıklamalar DGC'ye EN IEC 55015:2019/A11:2020, EN IEC 61547:2023, EN IEC 61000-3-2:2019/AMD1:2021/AMD2:2024, EN IEC 61000-3-3:2014/AMD1:2019/AMD2:2021 standardı uyarınca testler uygulanmıştır. Detaylı Bilgi için 7. sayfaya bakınız.

Remarks: Test were applied to EUT according to EN IEC 55015:2019/A11:2020, EN IEC 61547:2023, EN IEC 61000-3-2:2019/AMD1:2021/AMD2:2024, EN IEC 61000-3-3:2014/AMD1:2019/AMD2:2021 standart. Check Page 7 for further information.

Numune Kabul Tarihi: 09.10.2025
The date of receipt of test item:

Deney Tarihi : 08.10.2025-27.10.2025
Date of test:

Yayımlandığı Tarih: 13.11.2025
Date of Publication:

Onay Tarihi : 13.11.2025
Date of Approval

Rapor Sorumlusu
Person in Charge of Test Report

Laboratuvar Müdürü
Head of Testing Laboratory

Mühür / Seal

Hatice Kübra ÇALIN

Oktay TOSUN

TÜRKAK Akreditasyon Markası: TÜRKAK tarafından akredite edilmiş kuruluşların, akreditasyon statülerini göstermek için kullanılan, TÜRKAK logosunun altına; akreditasyon alanı, akreditasyona konu olan standardın numarası ve akredite edilmiş kuruluşun akreditasyon numarasının eklenmesi ile oluşturulan semboldür.

"TÜRKAK Accreditation Marking" is a symbol to state the Turkish Accreditation Agency (TÜRKAK) accredited company's accreditation status, accredited standard, accreditation number and is presented below the TÜRKAK logo.

Raporda kullanılan TÜRKAK akreditasyon markasının kullanım yetkisi sadece Eldaş Test ve Kalibrasyon Elektrik Sanayi ve Ticaret A.Ş. 'ye ait olup üçüncü tarafların kullanması kesinlikle yasaktır.

All rights regarding the "TÜRKAK Accreditation Marking" belong solely to Eldaş Test ve Kalibrasyon Elektrik Sanayi ve Ticaret A.Ş. and cannot be used by third parties.

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Agency (TÜRKAK) is signatory to the multilateral agreements of the European cooperation for the Accreditation (EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognition of test reports.

*** İşaretili deneyler akreditasyon kapsamı dahilinde değildir.**

* Signed tests accreditation number are not in the scope of accreditation.

Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması 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.

Bu belge bir bütündür, herhangi bir sebeple ya da amaçla parçalarına ayrılamaz ve bütün halinde değerlendirilir. Belge ve bütün versiyonlarının Eldaş test ve Kalibrasyon Elektrik Sanayi ve Tic. A.Ş.'nin izni olmadan değiştirilmesi veya çoğaltılması yasaktır. Islak imza içermeyen deney raporları geçerli değildir. Islak imzalı kağıt baskı ve Elektronik versiyon arasında bir ihtilafın bulunması durumunda ıslak imzalı kağıt baskı versiyon geçerlidir.

This report, in any circumstances, cannot be divided into parts and must be presented and evaluated in its entirety. It is prohibited to change or duplicate any version of this document without the approval of Eldaş test ve Kalibrasyon Elektrik Sanayi ve Tic. A.Ş.

The reports without a signature are considered invalid for all purposes. In case of a conflict between the electronic version (e.g. PDF file) and the original paper version with signature, the paper version with signature is valid.

ELDAŞ; TÜRKAK'tan AB-1532-T ile TS EN ISO/IEC 17025:2017 standardında göre akredite edilmiştir.

ELDAŞ; It has been accredited by TÜRKAK according to AB-1532-T and TS EN ISO/IEC 17025:2017 standard.

Bu raporda verilen sonuçlar ve değerlendirmeler sadece üretici/başvuru sahibi tarafından test için sağlanan ürün/sistem ile ilgilidir. Üretilen diğer ürünlerin ve versiyonlarının, bu raporda verilen gereksinimleri karşılaması üreticinin/başvuru sahibinin sorumluluğundadır. Test raporu, ürün aile grubunda bulunan ürünler ile ilgili herhangi bir sonuç içermez ve bu işlem tamamen teorik olarak yapıldığı için grupta bulunan ürünler ile ilgili herhangi bir yasal sorumluluk laboratuvar tarafından kabul edilmez.

The results and analysis in content of this report are only about the product/system provided by the manufacturer/applicant for testing. Ensuring all the other models meet the requirements stated in this report is the manufacturer's/applicant's responsibility. The test report does not contain any results regarding the products in the product family group, since this process is carried out completely theoretically, the laboratory does not accept any legal liability regarding the products in the group.

Bu raporun içerisinde belirtilen ürün bilgileri, üretici/başvuru sahibi tarafından sağlanmış olup, test sonuçları ve uygunluk beyanı bu bilgiler doğrultusunda değerlendirilmiştir. Üretici/başvuru sahibi tarafından sağlanan bilgilerde/verilerde meydana gelebilecek değişikliklerden üretici/başvuru sahibi sorumludur.

The test results and conformity assessments in this report are evaluated with the product information written in this report which was provided by the manufacturer/applicant. All responsibilities of any changes in the information about the product belongs to the manufacturer/applicant.

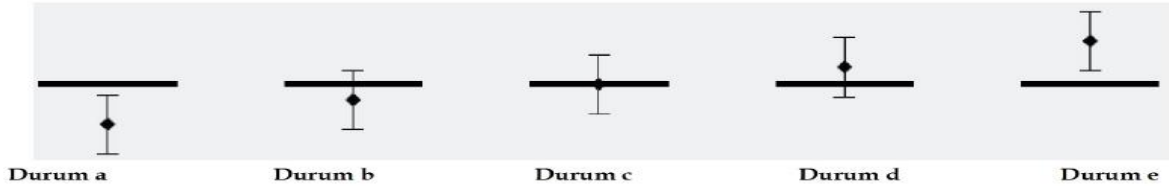
Eldas Test ve Kalibrasyon Elektrik Sanayi ve Ticaret A.Ş. bu belgenin içinde ihtiva edilmekte olan bilgilerin veya verilerin kullanılmasından veya kullanılmamasından kaynaklanan herhangi bir doğrudan, dolaylı, arızı ve kazaen ortaya çıkan yükümlülükleri kabul etmemektedir. Üretilen raporun içerikleri, üçüncü taraflara, yalnızca tam olarak, telif hakkı bildirimi, değiştirme yasağı, feragat beyanı, elektronik versiyonların geçerlilik bildirimi içeren halde gönderilebilir.

The contents of this report may only be transmitted to third parties in its entirety and provided with the copyright notice, prohibition to change, electronic versions validity notice and disclaimer.

DOKÜMAN TARİHÇESİ / REVISION HISTORY

Baskı / Edition	Tarih / Date	Açıklama / Remarks
İlk yayın / First edition	13.11.2025	–

Karar Kuralı Seçimi / Decision Rule Chosen



“♦” Ölçüm Sonucu / Measurement Result

“I” Ölçüm Belirsizliği Aralığı / Measurement Uncertainty Range

Durum a/Situation a;

Üst sınırın altındadır bu sebeple ürün spesifikasyona uygundur. / EUT results below the upper limit therefore results are OK

Durum b / Situation b;

Üst sınırın altındadır fakat ölçülen sonuç, belirsizlik aralığının yarısından az bir pay ile üst sınırın altındadır; bu sebeple, uygunluk belirtmek mümkün değildir. Laboratuvar bu sınıra kendi ölçüm belirsizliği hesabına göre karar vererek müşteriye bilgilendirme sağlar. / EUT results are below the upper limit line but below the upper limit line with a margin of less than half of the uncertainty; therefore it is not possible to state conformity. The laboratory decides this limit according to its own measurements of the uncertainty and informs the customer.

Durum c/ Situation c ;

Ölçülen sonuç sınırın tam üzerindedir, bu sebeple ile “uygun” ya da “uygun değil” diye belirtmek mümkün değildir. Müşteri ile görüşülerek ölçülen değerin limitinin altına indirilmesi sağlanmalıdır. / Eut results are on the limit line therefore could not to say "pass" or "fail". In consultation with the customer, should be ensured that the measured value is reduced below the limit.

Durum d / Situation d;

Üst sınırın üstündedir bu sebeple ürün spesifikasyona uygun değildir. / EUT results above the upper limit therefore results are does not OK

Durum e / Situation e ;

Üst sınırın üstündedir bu sebeple ürün spesifikasyona uygun değildir. / EUT results above the upper limit therefore results are does not OK

Bu sertifika laboratuvarın yazılı izni olmaksızın kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expectation of the permission of the laboratory. Certificate without signature and seal are not valid.

İÇİNDEKİLER
(Contents)

Sayfa
(Page)

1 Dokümantasyon

Documentation

1.1 DGC, Çevre Koşulları ve Sembollerin Tanımları

(Conditions/Power Utilized, Description of the EUT & Symbol Definitions)

5

1.2 Deney Standartları ve Deney Çizelgesi

(Test Standards and Test Table)

6

1.3 Deney Sonuçları

(Test Results)

7

1.4 Performans Kriterleri

(Performance Criteria)

8

2 Deney Sonuçları ve Koşulları

(Test Results and Conditions)

2.1 Elektrostatik Boşalma Bağışıklık Deneyi

(Electrostatic Discharge Immunity Test)

9-10

2.2 Ani Yükselmelere Karşı Bağışıklık Deneyi

(Surge Immunity Test)

11

2.3 RF Alanlar Tarafından Endüklenen, İletilen Bozulmalara Karşı Bağışıklık Deneyi

(Immunity to Conducted Disturbances Induced by Radio Frequency Fields)

12

2.4 Işıyan, Radyo Frekans, Elektromanyetik Alan Bağışıklık Deneyi

(Radiated, Radio Frequency, Electromagnetic Field Immunity Test)

13

2.5 Elektriksel Hızlı Geçici Rejim/Patlama Bağışıklık Deneyi

(Electrical Fast Transient/Burst Immunity Test)

14

2.6 Bağlantı Ucu Bozulma Gerilimi

(Conducted Emission)

15

2.7 Yayılım Bozulması

(Radiated Emission)

16

2.8 Gerilim Çukurları, Kısa Kesintiler ve Gerilim Değişimleri Bağışıklık Deneyi

(Voltage Dips, Short Interruptions and Voltage Variations Immunity Test)

17

2.9 Gerilim Dalgalanmaları ve Kırpışma

(Voltage Variations and Flicker)

18



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle çoğaltılamaz. İmza ve mühürsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full or part without the permission of the laboratory. Certificate without signature and seal are not valid.

İÇİNDEKİLER
(Contents)

Sayfa
(Page)

2.10 Şebeke Frekanslı Manyetik Alan Bağışıklık Deneyi
(Power Frequency Magnetic Field Immunity Test)

19

3 Ekler

(Attachments)

3.1 Test Ekipman Listesi (A)
(List of Test Equipment)

20

3.2 Deney Kurulumunun ve DGC'nin Fotoğrafları (B1-B11)
(Photos of the Test Set-up and EUT)

21-31

3.3 Deney Notları (C1-C10)
(Test Notes)

32-41

3.4 Komponent Listesi (D1)
(Component List)

42

3.5 Ayniyet Beyanı (E1)
(Identity Declaration)

43



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

DENEYDEN GEÇİRİLEN CİHAZIN :

(Equipment Under Test's)

Markası: ALBEX
(Brand)**Beyan Gerilimi:** 220—240 V AC
(Rated Voltage)**Modeli** YFB-200
(Model)**Beyan Gücü:** 5W / 1300mA
(Rated Power)**Seri No:** ALB001
(Serial Number)**Kısa Tanımı:** Dahili batarya sayesinde şebeke elektriği olmasa da 3 saat ışık sağlar.
Short Description: Thanks to its internal battery, it provides light for 3 hours even when there is no mains electricity.

- **Testler;** ALBEX marka YFB-200 model ürüne 50 Hz, 230 V AC şebeke gerilimi ile beslenerek yapılmıştır.
■ Tests were applied to ALBEX brand YFB-200 model product by supplying with 50 Hz, 230 V AC main voltage.

Ürün Aile Grubu (Müşteri beyanı):

Product Family Group (Customer Declaration):

Ürün aile grubu müşteri beyanı Ek E1, Sayfa 43'de verilmiştir.**Ürün aile grubundaki diğer modeller müşteri beyanı ile oluşturulmuştur.**(Customer declaration of the product family group is given on Attachment E1, Page 43.
The product family group is created with the declaration of manufacturer.)**ÇEVRE ŞARTLARI**

(Environmental Conditions)

Deneyler sırasında ölçülen çevre şartları ilgili sayfalarda belirtilmiştir.

(The environmental conditions are measured during tests, are determined related pages.)

1.1.DENEY RAPORUNDA KULLANILAN SEMBOLLERİN TANIMLARI

(Definitions of Symbols Used in This Test Report)

DGC-Deneyden Geçirilen Cihaz
(EUT-Equipment Under Test)**LISN-Hat Empedansını Sabitleyen Şebeke**
(LISN-Line Impedance Stabilization Network)**AM-Genlik modülasyonu**
(AM-Amplitude Modulation)**CDN-Bağlaştırma/Ayrıştırma Şebekesi)**
(CDN-Coupling/Decoupling Network)

- - **Siyah kutu, deney raporunda kullanılan cihaz, standard ve koşulları gösterir.**
(The black square indicates that the listed condition, standard or equipment is applicable for this report.)

- - **Boş kutu, deney raporunda kullanılmayan cihaz, standard ve koşulları gösterir.**
(The empty square indicates that the listed condition, standard or equipment is not applicable for this report.)



1.2 - DENEY STANDARDLARI VE DENEY ÇİZELGESİ
(Test Standards and Test Table)

Deneyler aşağıdaki standartlara göre yapılmıştır:
(The tests were performed according to following standards)

- | | | |
|--|---|--|
| ■ TS EN IEC 55015:2019/A11:2020 | ■ EN IEC 55015:2019/A11:2020 | ■ CISPR 15:2018 |
| ■ TS EN IEC 61547:2023 | ■ EN IEC 61547:2023 | ■ IEC 61547:2020 |
| ■ TS EN IEC 61000-3-3:2014/A1:2019/A2:2021 | ■ EN IEC 61000-3-3:2013/A1:2019/A2:2021 | ■ IEC 61000-3-3:2013/AMD1:2017/AMD2:2021 |
| ■ TS EN IEC 61000-3-2:2019/A1:2021/A2:2024 | ■ EN IEC 61000-3-2:2019/A1:2021/A2:2024 | ■ IEC 61000-3-2:2018/AMD1:2020/AMD2:2024 |

EMC Deneyleri EMC Tests	Deney Standartları Test Standards (TS / EN / IEC)
1 - Elektrostatik Boşalma Bağışıklık Deneyi (Electrostatic Discharge Immunity Test)	61000-4-2
2 - Ani Yükselmelere Karşı Bağışıklık Deneyi (Surge Immunity Test)	61000-4-5
3 - RF Alanlar Tarafından Endüklenen, İletilen Bozulmalara Karşı Bağışıklık Deneyi (Immunity to Conducted Disturbances Induced by Radio Frequency Fields)	61000-4-6
4 - Işıyan, Radyo Frekans, Elektromanyetik Alan Bağışıklık Deneyi (Radiated, Radio Frequency, Electromagnetic Field Immunity Test)	61000-4-3
5 - Elektriksel Hızlı Geçici Rejim / Patlama Bağışıklık Deneyi (Electrical Fast Transient / Burst Immunity Test)	61000-4-4
6 - Bağlantı Ucu Bozulma Gerilimi (Conducted Emission)	55015
7 - Yayılım Bozulması (Radiated Emission)	55015
8 - Gerilim Çukurları, Kısa Kesintiler ve Gerilim Değişimleri Bağışıklık Deneyi (Voltage Dips, Short Interruptions and Voltage Variations Immunity Test)	61000-4-11
9 - Gerilim Dalgalandırması ve Kırpılma (Voltage Variations and Flicker)	61000-3-3
10 - Şebeke Frekanslı Manyetik Alan (Power Frequency Magnetic Field)	61000-4-8



Bu sertifika laboratuvarın yazılı izni olmadan kopya yapılmaz ve kullanılmaz. İmzasız ve mührsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full except with the permission of the laboratory. Certificate without signature and seal are not valid.

1.3 - DENEY SONUÇLARI
(Tests Results)

Uygulanan Testler	Uygulama Yeri	Sonuç	Deneyi Yapan
Applied Tests	(Appliance Location)	Result	By tested
2.1 - Elektrostatik Boşalma Bağışıklık Deneyi (Electrostatic Discharge Immunity Test)	Mahfaza (Enclosure)	Geçti (Passed)	Enes ASLAN
2.2 - Ani Yükselmelere Karşı Bağışıklık Deneyi (Surge Immunity Test)	Güç Portu (Power Port)	Geçti (Passed)	
2.3 - RF Alanlar Tarafından Endüklenen, İletilen Bozulmalara Karşı Bağışıklık Deneyi (Immunity to Conducted Disturbances Induced by Radio Frequency Fields)	Güç Portu (Power Port)	Geçti (Passed)	
2.4 - Işıyan, Radyo Frekans, Elektromanyetik Alan Bağışıklık Deneyi (Radiated, Radio Frequency, Electromagnetic Field Immunity Test)	Mahfaza (Enclosure)	Geçti (Passed)	
2.5 - Elektriksel Hızlı Geçici Rejim / Patlama Bağışıklık Deneyi (Electrical Fast Transient / Burst Immunity Test)	Güç Portu (Power Port)	Geçti (Passed)	
2.6 - Bağlantı Ucu Bozulma Gerilimi (Conducted Emission)	Güç Portu (Power Port)	Geçti (Passed)	Talha EKE
2.7 - Yayılım Bozulması (Radiated Emission)	Mahfaza (Enclosure)	Geçti (Passed)	
2.8 - Gerilim Çukurları, Kısa Kesintiler ve Gerilim Değişimleri Bağışıklık Deneyi (Voltage Dips, Short Interruptions and Voltage Variations Immunity Test)	Güç Portu (Power Port)	Geçti (Passed)	Enes ASLAN
2.9 - Gerilim Dalgalanmaları ve Kırpışma (Voltage Variations and Flicker)	Güç Portu (Power Port)	Geçti (Passed)	Ayça URAL
2.10 - Şebeke Frekanslı Manyetik Alan (Power Frequency Magnetic Field)	Mahfaza (Enclosure)	Geçti (Passed)	



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full except with the permission of the laboratory . Certificate without signature and seal are not valid.

1.4 - PERFORMANS KRİTERLERİ

(Performance Criteria)

a) Performans kriteri A: Aparatın, deney sırasında ve sonrasında tasarlandığı şekilde çalışmaya devam etmesi sağlanmalıdır. Aparat tasarlandığı şekilde kullanıldığı zaman, imalatçı tarafından tarif edilen performans seviyesi izin verilebilir bir performans kaybı ile değiştirilebilir. En düşük performans seviyesi veya izin verilebilir performans kaybı imalatçı tarafından tarif edilmemişse, bu hususlar mamul tanıtımılığı veya mamul dokümantasyonundan ve aparat tasarlandığı şekilde kullanıldığı zaman kullanıcının aparatın nasıl davranacağı yönünde beklediği tepkiden elde edilebilir.

IEC 61547-1:2020: Test sırasında, ışık yoğunluğunda hiçbir değişiklik gözlenmeyecek ve varsa düzenleyici kontrol, test sırasında amaçlandığı gibi çalışacaktır.

[Performance Criterion A: The apparatus shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus, if used as intended.

IEC 61547-1:2020: During the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.]

b) Performans kriteri B: Aparatın deney sırasında ve sonrasında tasarlandığı şekilde çalışmaya devam etmesi sağlanmalıdır. Aparat tasarlandığı şekilde kullanıldığı zaman, imalatçı tarafından tarif edilen performans seviyesinin altına düşecek bir performans azalmasına veya işlev kaybına izin verilmez. Performans seviyesi izin verilebilir bir performans kaybı ile değiştirilebilir. Bununla beraber deney sırasında performans kaybına izin verilir. Gerçek çalışma durumundaki bir değişime veya saklanmış verinin değişimine izin verilmez. En düşük performans seviyesi veya izin verilebilir performans kaybı imalatçı tarafından tarif edilmemişse, bu hususlar mamul tanıtımılığı veya mamul dokümantasyonundan ve aparat tasarlandığı şekilde kullanıldığı zaman kullanıcının aparatın nasıl davranacağı yönünde beklediği tepkiden elde edilebilir.

IEC 61547-1:2020: Test sırasında ışık şiddeti herhangi bir değere düşebilir. Testten sonra, ışık yoğunluğu 1 dakika içinde (yüksek basınçlı gaz deşarj lambaları için 30 dakika) başlangıç değerine geri getirilecektir. Kontrolün düzenlenmesi, testi yürütmek zorunda değildir, ancak testten sonra, teste devam ederken hiçbir mod değiştirme komutunun verilmemesi koşuluyla, kontrol modu testten önceki ile aynı olacaktır.

[Performance criterion B: The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

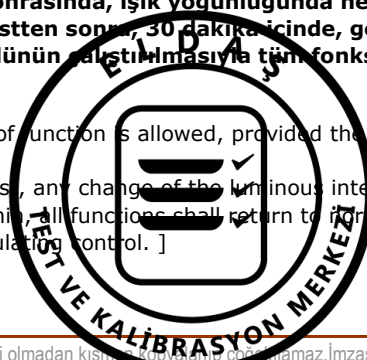
IEC 61547-1:2020: During the test, the luminous intensity may change to any value. After the test, the luminous intensity shall be restored to its initial value within 1 min (30 min for high pressure gas discharge lamps). Regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test, provided that during the test no mode changing commands were given.]

c) Performans kriteri C: Geçici işlev kaybına izin verilir. Ancak sağlanan fonksiyon kontrol işlemi ile kendi kendine toparlanabilir veya düzeltilebilir olmalıdır.

IEC 61547-1:2020: Test sırasında ve sonrasında, ışık yoğunluğunda herhangi bir değişikliğe izin verilir ve ışık kaynağı / kaynakları söndürülebilir. Testten sonra, 30 dakika içinde, gerekirse şebeke beslemesinin geçici olarak kesilmesi ve / veya ayar kontrolünün restorasyonu ile tüm fonksiyonlar normale dönecektir.

[Performance criterion C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

IEC 61547-1:2020: During and after the test, any change of the luminous intensity is allowed and the light source(s) may be extinguished. After the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the mains supply and/or operating the regulating control.]



2.1 - ELEKTROSTATİK BOŞALMA BAĞIŞIKLIK DENEYİ
(Electrostatic Discharge Immunity Test)

Deney Talimat No: (Test Method No)	DT-EMC-01	İlgili standard: (Related Standard)	TS EN 61000-4-2: EN 61000-4-2 IEC 61000-4-2
Çevre Koşulları: (Environmental Conditions)	23,2 °C , % 42 RH	Tarih: (Date)	27.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı:	DGC, ekranlı odada referans toprak düzlem üzerinde 0,5 mm kalınlıktaki yalıtkan üzerine yerleştirildi. Test kurulumu IEC 61000-4-2 standardına göre hazırlandı. DGC'nin iletken yüzeylerine ve bağlaştırma düzlemine temasla boşalma, yalıtkan yüzeylere de havadan boşalma uygulandı.
(Test specification:	EUT has been placed on an isolator which was 0,5 mm thickness from reference ground plane in the shielded room. Test set-up is prepared related to IEC 61000-4-2. EUT has been applied contact discharge to the conductive surfaces and to coupling plane, air discharge at insulating surfaces.)

Temasla boşalma voltajı: (Contact discharge voltage)	☐ ±2 kV	☒ ±4 kV
	☐ ±6 kV	☐ ±8 kV
Havadan boşalma voltajı: (Air discharge voltage)	☐ ±2 kV	☐ ±4 kV
	☒ ±8 kV	☐ ±15 kV
Boşalma direnci ve kapasitörü: (Discharge resistor and capacitor)	☒ 330 Ω / 150 pF	
Boşalma faktörü: (Discharge factor)	☒ ≥ 1 s	
Boşalma sayısı: (Number of discharge)	☒ ≥ 20	(10 pozitif, 10 negatif boşalma) (10 positive, 10 negative discharge)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.1 - ELEKTROSTATİK BOŞALMA BAĞIŞIKLIK DENEYİ
(Electrostatic Discharge Immunity Test)

Boşalma metodu:
(Type of discharge)

■ **Doğrudan boşalma**
(Direct discharge)

■ **Temasla boşalma**
(Contact discharge)

■ **Havadan boşalma**
(Air discharge)

■ **Dolaylı boşalma**
(Indirect discharge)

■ **Temasla boşalma**
(Contact discharge)

Polarizasyon:
(Polarity)

■ **Pozitif**
(Positive)

■ **Negatif**
(Negative)

Boşalma Alanı:
(Discharge location)

■ **Yatay bağlaştırma düzlemi**
(Horizontal coupling plate -HCP-)

■ **Dikey bağlaştırma düzlemi**
(Vertical coupling plate -VCP-)

Test Sonucu:
(Test Result)

■ **Geçti**
(Passed)

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4 sütun 5.2'de belirtilen Performans Kriteri B'ye ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion B with related to TS EN IEC 61547:2023 column 5.2 in Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 4.2 de belirtilen Performans Kriteri B'ye ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion B with related to IEC 61547:2020 in Item 4.2)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.2 - ANİ YÜKSELMELERE KARŞI BAĞIŞIKLIK DENEYİ
(Surge Immunity Test)

Deney Talimat No: (Test Method No)	DT-EMC-03	İlgili standard: (Related Standard)	TS EN 61000 EN 61000-4-5 IEC 61000-4-5
Çevre Koşulları: (Environmental Conditions)	23,5 °C , % 39 RH	Tarih: (Date)	27.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: (Test specification:	DGC, ekranlı odada referans toprak düzlemi üzerinde 10 cm yükseklikteki ahşap yalıtkan üzerine üstüne konularak test edildi. Test kurulumu IEC 61000-4-5 standardına göre hazırlandı. Hat-hat ve hat-toprak arasına surge sinyali uygulandı. EUT was tested in a shielded room by placing the EUT on a 10 cm thickness insulator on a reference ground plane. Test set-up is prepared related to IEC 61000-4-5. Surge signal is applied to line-line and line-ground couplings.)		
Test seviyesi: (Test level)	■ ±1 kV (Hat - Hat) (Line - Line)		
Çıkış empedansı: (Output impedance)	■ 2 ohm (Hat - Hat) (Line - Line)		
Faz açısı: (Phase angle)	■ Pozitif 90° (positive)	■ Negatif 270° (negative)	
Uygulama sayısı: (Application number)	■ 5		
Tekrarlama oranı: (Repetition rate)	■ 1 dakika (1 minute)		
Test Sonucu: (Test Result)	■ Geçti (Passed)		

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4 sütun 5.7'de belirtilen Performans Kriteri C'ye ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion C with related to TS EN IEC 61547:2023 column 5.7 in Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 4.2 de belirtilen Performans Kriteri C'ye ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion C with related to IEC 61547:2020 in Item 4.2)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.3 - RF ALANLAR TARAFINDAN ENDÜKLENEN İLETİLEN BOZULMALARA KARŞI BAĞIŞIKLIK DENEYİ (Immunity to Conducted Disturbances, Induced by Radio Frequency Fields)

Deney Talimat No: (Test Method No)	DT-EMC-09	İlgili standard: (Related Standard)	TS EN IEC 61000-4-6 EN IEC 61000-4-6 IEC 61000-4-6
Çevre Koşulları: (Environmental Conditions)	23,5 °C , % 39 RH	Tarih: (Date)	27.10.2025

TEST ŞARTLARI VE SONUÇLARI (TEST CONDITIONS AND RESULTS)

Testin tanımı: DGC'nin besleme uçları, CDN cihazına bağlandı. DGC, ekranlı odada referans toprak düzlem üzerinden 10 cm yükseklikteki yalıtkan üzerine yerleştirildi. Test kurulumu IEC 61000-4-6 standardına göre hazırlandı. İletimle bozulmalar için gerekli sinyaller CDN ile uygulandı.

(Test specification: Electrical power input terminals of EUT were connected to CDN device. EUT was placed on an wooden isolator which is 10 cm height from reference ground plane in shielded room. Test set-up was prepared related to IEC 61000-4-6 standard.)

Test seviyesi: ■ 3 V
(Test level)

Frekans aralığı: ■ 0,15 - 80 MHz
(Frequency range)

Modülasyon: ■ AM 80% Genlik (Amplitude) ■ 1 kHz ■ Sinüs (Sinusoidal)
(Modulation)

Frekans adımı: ■ %1 adımlarla 3 saniye bekleme süresi
(Frequency step) (1 % with 3 s dwell time)

Test Sonucu: ■ Geçti
(Test Result) (Passed)

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4 sütun 5.6'da belirtilen Performans Kriteri A'ya ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion A with related to TS EN IEC 61547:2023 column 5.6 in Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 4.2 de belirtilen Performans Kriteri A'ya ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion A with related to IEC 61547:2020 in Item 4.2)



2.4 - İŞIYAN, RADYO FREKANS, ELEKTROMANYETİK ALAN BAĞIŞIKLIK DENEYİ
(Radiated, Radio Frequency, Electromagnetic Field Immunity Test)

Deney Talimat No: (Test Method No)	DT-EMC-05	İlgili standard: (Related Standard)	TS EN IEC 61000-4-3 EN IEC 61000-4-3 IEC 61000-4-3
Çevre Koşulları: (Environmental Conditions)	23,5°C , % 41 RH	Tarih: (Date)	27.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: DGC, tam yansız odada yerden 80 cm yükseklikteki ahşap masa üzerinde 230 V AC gerilimle beslendi. Anten dikey ve yatay konumdayken DGC dört yönde çevrilerek test edildi.

(Test specification: EUT has been supplied with 230 V AC in full anechoic chamber on a wooden table that is above 80 cm height from floor. Test is made by turning EUT four positions on vertical and horizontal polarizations of the antenna.)

Frekans aralığı: ■ 80 MHz – 1000 MHz
(Frequency range)

Alan Şiddeti: ■ 3 V/m
(Field Strength)

Anten-DGC arası uzaklık: ■ 1 m
(Distance of antenna – EUT)

DGC pozisyonu: ■ 0° ■ 90° ■ 180° ■ 270°
(Position of EUT)

Modülasyon: ■ AM 80% Genlik (Amplitude) 1 kHz sinüs(sinusoidal)
(Modulation)

Frekans adımı: ■ %1 adımlarla 2 saniye bekleme süresi
(Frequency step) (1 % with 2 s dwell time)

Anten polarizasyonu: ■ Yatay ■ Dikey
(Polarization of antenna) (horizontal) (vertical)

Test Sonucu: ■ Geçti
(Test Result) (Passed)

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4'sünün 5.3'ü'ne Belirlenen Performans Kriteri A'ya ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion A with related to TS EN IEC 61547:2023 column 5.3 in Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 4.2'de belirtilen Performans Kriteri A'ya ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion A with related to IEC 61547:2020 in Item 4.2)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.5 - ELEKTRİKSEL HIZLI GEÇİCİ REJİM / PATLAMA BAĞIŞIKLIK DENEYİ
(Electrical Fast Transient / Burst Immunity Test)

Deney Talimat No: (Test Method No)	DT-EMC-02	İlgili standard: (Related Standard)	TS EN 61000-4-4 EN 61000-4-4 IEC 61000-4-4
Çevre Koşulları: (Environmental Conditions)	23,5 °C , % 39 RH	Tarih: (Date)	27.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: (Test specification:)	DGC, ekranlı odada referans toprak düzlemi üzerinde 10 cm yükseklikteki ahşap yalıtkan üstüne konularak test edildi. Test kurulumu IEC 61000-4-4 standardına göre hazırlandı. DGC çalışırken, güç hattına burst sinyali uygulandı. EUT was tested in a shielded room by placing the EUT on a 10 cm thickness wooden insulator on a reference ground plane. Test set-up is prepared related to IEC 61000-4-4. When EUT is power on, burst signal is applied to the power line.)		
Test seviyesi: (Test level)	☐ ± 0.5 kV (Level 1)	☒ ± 1 kV (Level 2)	
	☐ ± 2 kV (Level 3)	☐ ± 4 kV (Level 4)	
Patlama frekansı: (Burst frequency)	☒ 5 kHz		
Uygulama süresi: (Coupling time)	☒ - - ≥2 min.		
Test Sonucu: (Test Result)	☒ Geçti (Passed)		

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4 sütun 5.5'te belirtilen Performans Kriteri B'ye ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion B with related to TS EN IEC 61547:2023 column 5.5 in Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 4.2 de belirtilen Performans Kriteri B'ye ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion B with related to IEC 61547:2020 in Item 4.2)



2.6 - BAĞLANTI UCU BOZULMA GERİLİMİ
(Conducted Emission)

Deney Talimat No: DT-EMC-06
(Test Method No)

İlgili standard:
(Related Standard)

TS EN IEC 55015
EN IEC 55015
CISPR 15
09.10.2025

Çevre Koşulları: 23,5 °C , % 44 RH
(Environmental Conditions)

Tarih:
(Date)

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: DGC, ekranlı odada LISN cihazının L ve N bağlantı noktalarından beslendi. DGC normal çalışma modunda iken şebekeye verdiği yayılım değeri Emi Test Receiver cihazıyla ölçüldü.

(Test specification: EUT is supplied by LISN equipment on L and N couplings in the shielded room. When the EUT is in the normal period of operation emission value that was given to main supply is measured by Emi Test Receiver.)

Frekans aralığı: ■ 9 kHz - 30 MHz
(Frequency range)

Test Sonucu: ■ Geçti
(Test Result) (Passed)

Not: Test sonuçları için lütfen EK C(C1-C2)'ye bakınız.
(Please see the attachment C(C1-C2) for the test results.)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.7 - YAYILIM BOZULMASI
(Radiated Emission)**Deney Talimat No:** DT-EMC-06
(Test Method No)**İlgili standard:**
(Related Standard)TS EN IEC 55015
EN IEC 55015
CISPR 15
21.10.2025**Çevre Koşulları:** 22,5 °C , % 42 RH
(Environmental Conditions)**Tarih:**
(Date)**TEST ŞARTLARI VE SONUÇLARI**
(TEST CONDITIONS AND RESULTS)

Testin tanımı: 30 MHz - 1000 MHz frekans aralığında emisyon ölçümleri için: DGC, yansımaz odada yerden 80 cm yükseklikteki ahşap masa üzerine yerleştirildi. Anten dikey ve yatay konumdayken DGC, dört yönde çevrilerek test edildi. Yayılım bozulması testi için gerekli ölçümler Emi Test receiver cihazı kullanılarak alındı.

9 kHz - 30 MHz frekans aralığında emisyon ölçümleri için: DGC, LLAS merkezine yerleştirildi. DGC'den LLAS'ın üç büyük döngü anteninin her birine manyetik alan kuvveti tarafından indüklenen akım, akım probu ile ölçüldü.

(Test specification: For emission measurements in the 30 MHz to 1000 MHz frequency range: EUT has been placed on a wooden table that is above 80 cm height from floor in anechoic chamber. Test is made by turning EUT four dimensions on vertical and horizontal polarizations of the antenna. Necessary data have been measured by using Emi Test receiver for radiated emission test.

For emission measurements in the 9 kHz to 30 MHz frequency range: EUT has been placed in the center of LLAS. The current induced by the magnetic field strength from the EUT to each of the three large loop antennas of the LLAS was measured with the current probe.)

LLAS: Large Loop Antenna Systems**Frekans aralığı:** ■ 30 MHz - 1000 MHz
(Frequency range)**Dedektör:** ■ Quasi-Peak
(Dedector)**Test mesafesi:** ■ 3 metre
(The Test Distance)**Anten polarizasyonu:** ■ Yatay ■ Dikey
(Polarization of antenna) (horizontal) (vertical)**DGC pozisyonu:** ■ 0° ■ 90° ■ 180° ■ 270°
(Position of EUT)**Frekans aralığı:** ■ 9 kHz - 30 MHz
(Frequency range)**Dedektör:** ■ Quasi-Peak
(Dedector)**LLAS çapı:** ■ 2m
(LLAS diameter)**Test Sonucu:** ■ Geçti
(Test Result) (Passed)**Not: Test sonuçları için lütfen EK C(C3-C9) ye bakınız.**
(Please see the attachment C(C3-C9) for the test results.)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full except with the permission of the laboratory . Certificate without signature and seal are not valid.

2.8 - GERİLİM ÇUKURLARI, KISA KESİNTİLER VE GERİLİM DEĞİŞMELERİ BAĞIŞIKLIK DENEYİ
(Voltage Dips, Short Interruptions and Voltage Variations Immunity Test)

Deney Talimat No: (Test Method No)	DT-EMC-06	İlgili standard: (Related Standard)	TS EN IEC 61000-4-11 EN IEC 61000-4-11 IEC 61000-4-11
Çevre Koşulları: (Environmental Conditions)	23,5 °C , % 39 RH	Tarih: (Date)	27.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: DGC, ekranlı odada referans toprak düzlem üzerinden 10 cm yükseklikte ahşap yalıtkan üzerine yerleştirildi. Test kurulumu IEC 61000-4-11 standardına göre hazırlandı. Güç hattına gerilim kesintisi ve çukurları uygulandı.

(Test specification: EUT has been placed on a wooden isolator which was 10 cm height from reference ground plane in the shielded room. Test set-up is prepared related to IEC 61000-4-11. Voltage interruption and dips are applied to the power line.)

Gerilim Çukuru (Voltage Dip)	Gerilim Deney Seviyesi (Voltage Tests Level)	Süre/Periyot (Duration/Period)	Süre/Saniye (Duration/Second)	Performans Kriteri (Performance Criteria)
	■ % 70 Ut	■ 10 Cycle	■ 200 ms	C

Kısa Kesinti (Short Interruptions)	Gerilim Deney Seviyesi (Voltage Tests Level)	Süre/Periyot (Duration/Period)	Süre/Saniye (Duration/Second)	Performans Kriteri (Performance Criteria)
	■ % 0 Ut	■ 0,5 Cycle	■ 10 ms	B

Ut değeri, deney seviyesi uygulanmadan önceki A.A şebeke gerilimidir.

Ut is the AC mains voltage prior to application of the test level.

Test Sonucu: ■ Geçti
(Test Result) (Passed)

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4'te tanımlanan, yukarıda belirtilen kriterleri sağlamıştır.
(EUT, has been propered to above related citerions from described to TS EN IEC 61547:2023 Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 6.3.4'te tanımlanan, yukarıda belirtilen kriterleri sağlamıştır.
(EUT, has been propered to above related citations from described to IEC 61547:2020 Item 6.3.4.)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz.İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.9 - GERİLİM DALGALANMALARI VE KIRPIŞMA
(Voltage Variations and Flicker)

Deney Talimat No: (Test Method No)	DT-EMC-07	İlgili standard: (Related Standard)	TS EN 61000-3-3 EN 61000-3-3 IEC 61000-3-3
Çevre Koşulları: (Environmental Conditions)	23,2 °C , % 41 RH	Tarih: (Date)	08.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: (Test specification:	DGC'nin besleme kablosu, harmonik cihazına bağlandı. Cihazın şebekeye vermiş olduğu gerilim dalganması ve kırpışma değeri ölçüldü. The power supply of the EUT is connected to harmonics device. The voltage variations and flicker value of the device to the network were measured.)
---	--

LİMİT KOŞULLARI :
(LIMIT CONTIDITIONS)

Kısa süreli kırpışma göstergesi (P_{st}) (Short-term Flicker)	■ 1.00
Uzun süreli kırpışma göstergesi (P_{lt}) (Long-term Flicker)	■ 0.65
Bağıl sürekli durum gerilim değişimi (d_c) (Relative steady-state voltage change)	■ 3.30 %
En büyük bağıl gerilim değişimi (d_{max}) (Maximum relative voltage change)	■ 4.00 %

Test Sonucu: (Test Result)	■ Geçti (Passed)
--------------------------------------	---------------------

Not: Test sonuçları için lütfen EK C(C12-C13)'ye bakınız.
(Please see the attachment C(C12-C13) for the test results.)



Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

2.10 - ŞEBEKE FREKANSLI MANYETİK ALAN BAĞIŞIKLIK DENEYİ
(Power Frequency Magnetic Field Immunity Test)

Deney Talimat No: (Test Method No)	DT-EMC-10	İlgili standard: (Related Standard)	TS EN 61000-4-8 EN 61000-4-8 IEC 61000-4-8
Çevre Koşulları: (Environmental Conditions)	23,2 °C , % 42 RH	Tarih: (Date)	08.10.2025

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: DGC, kontrol odasında antenin merkezine yerleştirildi. Manyetik alan uygulandı.
(Test specification: EUT has been placed on centre of the antenna in Control Room. Magnetic field is applied.)

Sürekli Alan için Deney Seviyesi: ■ 3 A/m
(Continuous field test level)

Frekans: ■ 50 Hz
(Frequency)

Test Sonucu: ■ Geçti
(Test Result) (Passed)

DGC, TS EN IEC 61547:2023 standardı Madde 6.3.4 sütun 5.4'te belirtilen Performans Kriteri A'ya ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion A with related to TS EN IEC 61547:2023 column 5.4 in Item 6.3.4.)

DGC, IEC 61547:2020 standardı Madde 4.2 de belirtilen Performans Kriteri A'ya ilişkin şartları sağlamıştır.

(EUT is proper for Performans Criterion A with related to IEC 61547:2020 in Item 4.2)

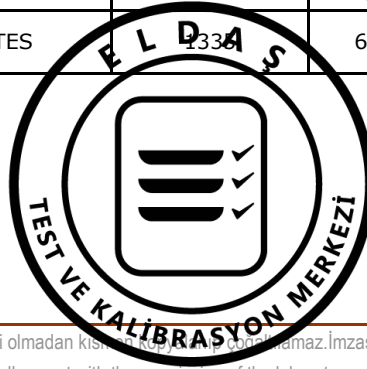


Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

3.1 - TEST EKİPMAN LİSTESİ
(List of Test Equipment)

Cihaz Adı (Equipment Name)	Marka (Brand)	Model (Model)	Seri No (Serial No)	Kalibrasyon Bitiş Tarihi (Calibration Due Date)
Emi Test Receiver	Rohde&Schwarz	ESCI	100173	09/2026
Emi Test Receiver	Rohde&Schwarz	ESR7	101817	09/2026
Solid State Power Amplifier 15 W	Bonn Elektronik	BSA012515	035357A	N/A
AMETEK SURGE BURST	EM TEST	Compact NX5 bsp- 1-300-16	P1602169864	02/2026
Sinyal Jeneratörü	Rohde&Schwarz	SML03	102312	09/2026
Sinyal Jeneratörü	Rohde&Schwarz	SMB100B	101649	03/2026
Alan Probu	Frankonia	EFS-10	611WX70703	07/2026
Coupling Decoupling	TESEQ	M316	43158	02/2026
ESD CİHAZI	TESEQ	NSG 437	1152	09/2026
Video Monitors	LAVA	LT-15EEP	L40950600001-S	N/A
Mini Kamera	INOVI	GK-İ40	2010/112640357	N/A
RF Zayıflatıcı	BIRD ELEKTRONIC	8341-200	2382	11/2026
LISN	Rohde&Schwarz	ENV432	101489	06/2026
RF Power Amplifier	AR	100W1000B1	305583	N/A
Magnetik-Field Test System	EMC Elektronik	AD4950H	1804050015	09/2026
E Stacked Double Log-Per.Antenna	Schwarzbeck	STLP 9128E	9128E 006	N/A
Bi-log Antenna	Rohde&Schwarz	HL562E	102101	10/2027
Triple Loop Antenna	EMC Elektronik	HA0930	93001	03/2026
Harmonics and Flicker Analyzer	EMC PARTNER	HAR1000-1P	HAR1000-1P 230V-0232	02/2026
Lüxmetre	TES	3334	60702277	11/2025

**EK A (Attachment A)**

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full except with the permission of the laboratory . Certificate without signature and seal are not valid.

3.2 - Deney Kurulumunun ve DGC'nin Fotoğrafları

(Photos of the Test Set-up and EUT)

DGC

(EUT)



EK B1 (Attachment B1)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

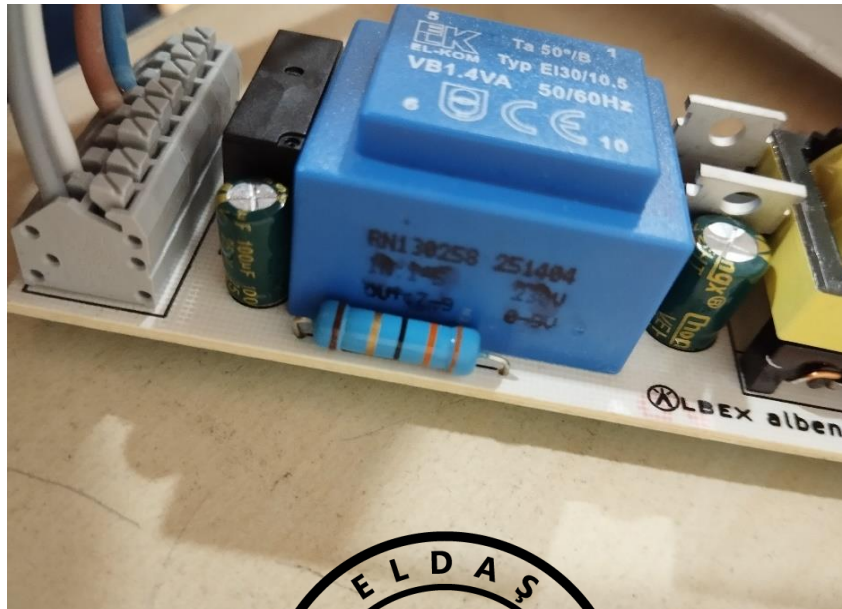
DGC
(EUT)



EK B2 (Attachment B2)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

DGC
(EUT)

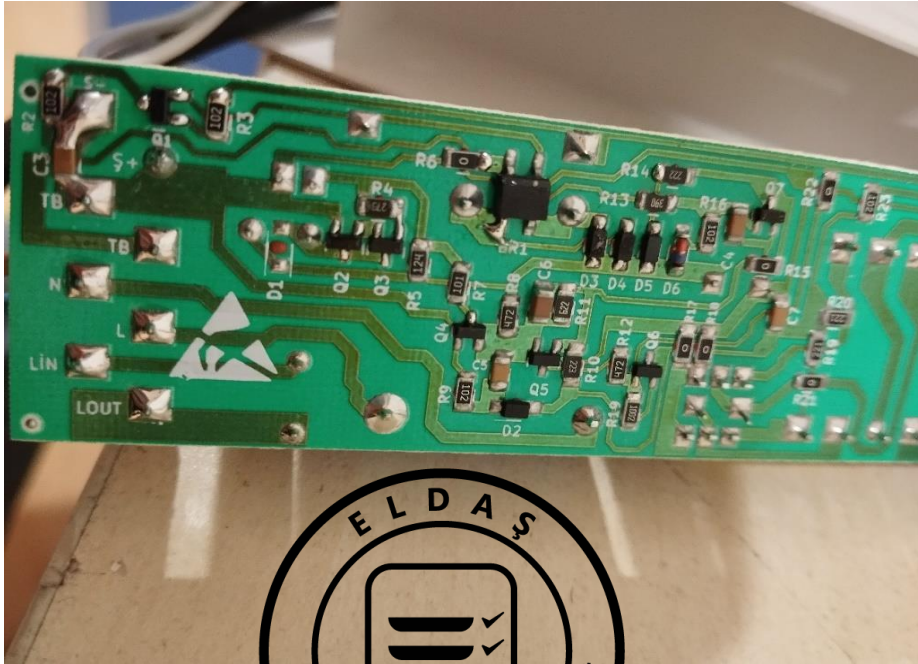
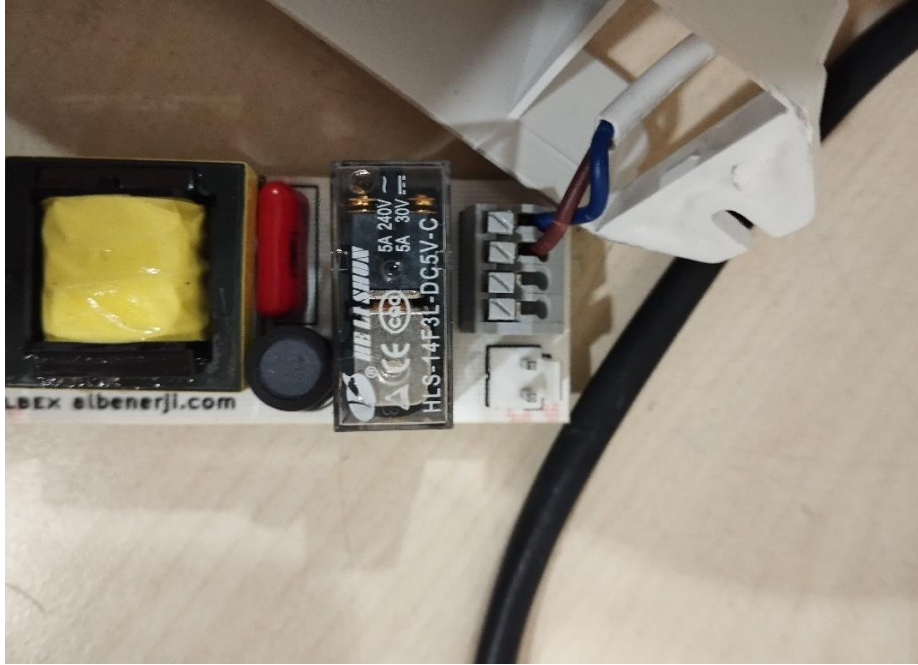


EK B3 (Attachment B3)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

DGC
(EUT)



EK B4 (Attachment B4)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

DGC
(EUT)



EK B5 (Attachment B5)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

CONDUCTED EMISSION



RADIATED EMISSION LLAS

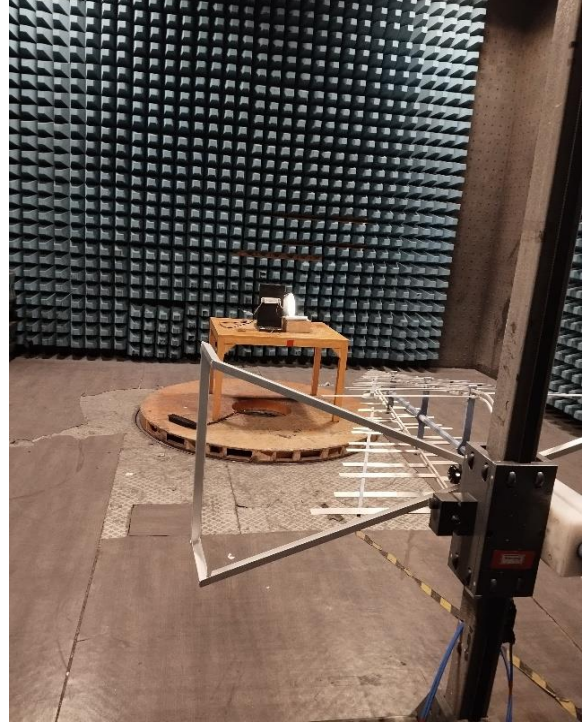
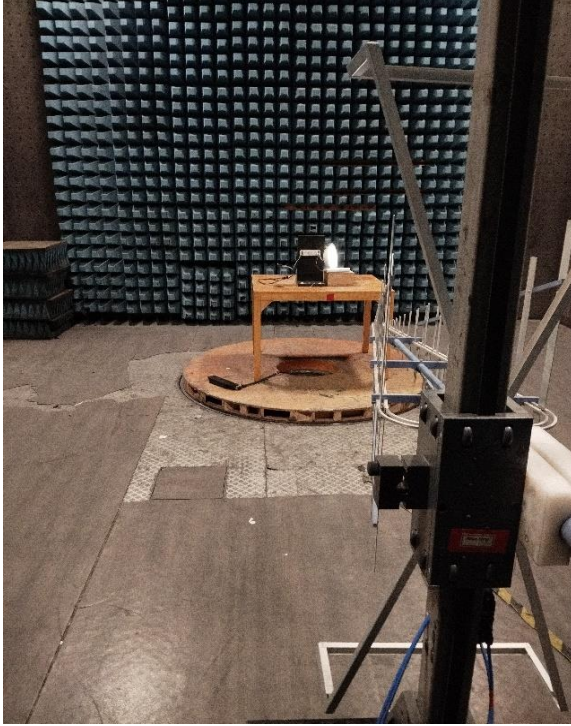


EK B6 (Attachment B6)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

RADIATED EMISSION



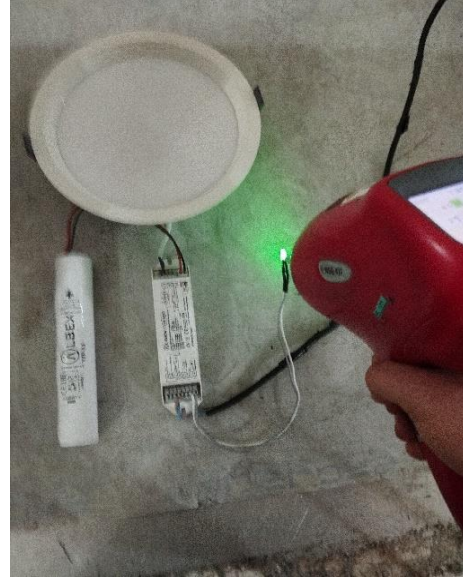
BURST - SURGE - VOLTAGE DIPS



EK B7 (Attachment B7)

Bu sertifika laboratuvarın yazılı izni olmadan kısıtlı olarak çoğaltılamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

ELECTROSTATIC DISCHARGE



EK B8 (Attachment B8)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

FLICKER EMISSION



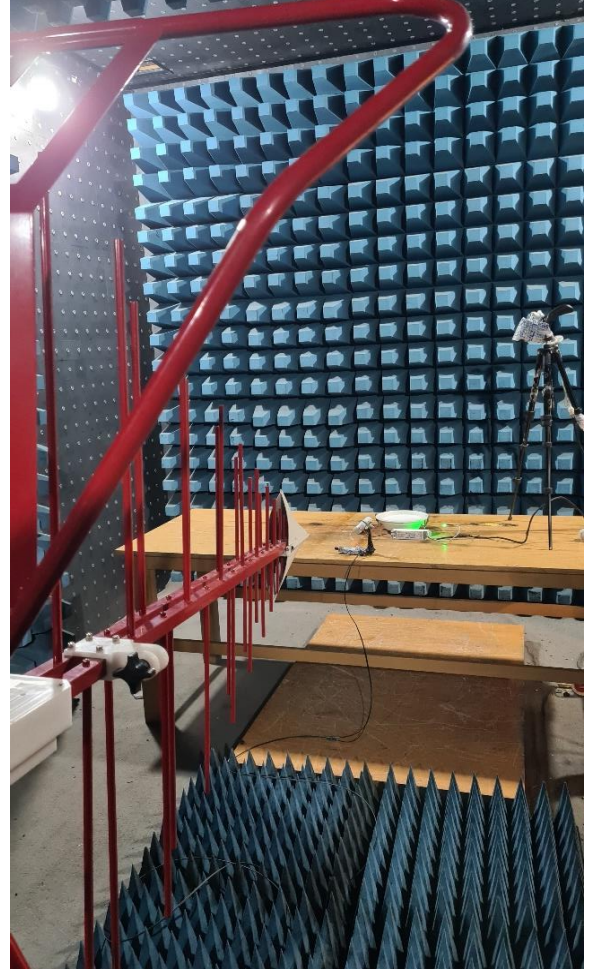
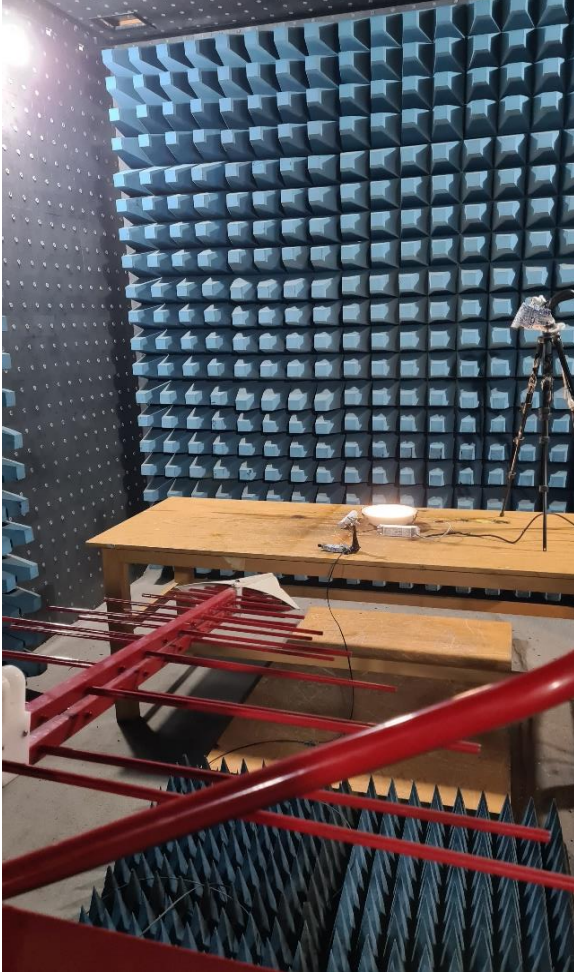
CONDUCTED IMMUNITY



EK B9 (Attachment B9)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

RADIATED IMMUNITY



EK B10 (Attachment B10)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

POWER FREQUENCY MAGNETIC FIELD



EK B11 (Attachment B11)

Bu sertifika laboratuvarın yazılı izni olmadan kısıtlı olarak kopyalanıp çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

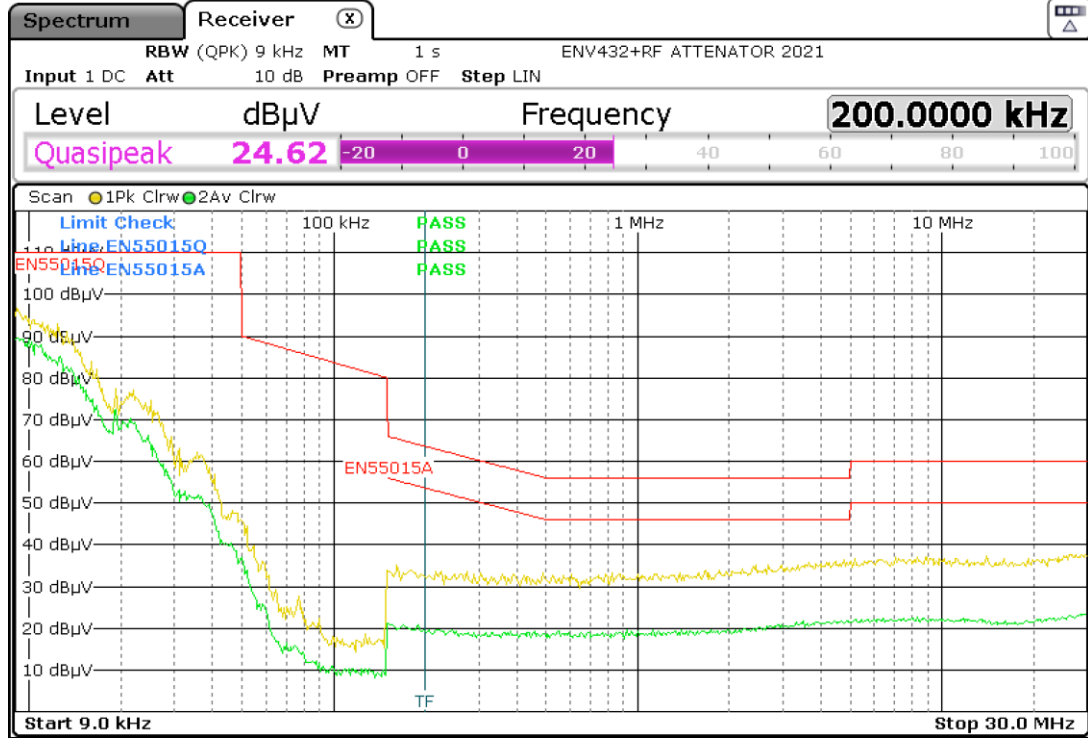
3.3 - DENEY NOTLARI

(Test Notes)

Bağlantı ucu bozulma gerilimi deney sonuçları:

(Conducted emission test results)

FAZ (LINE)



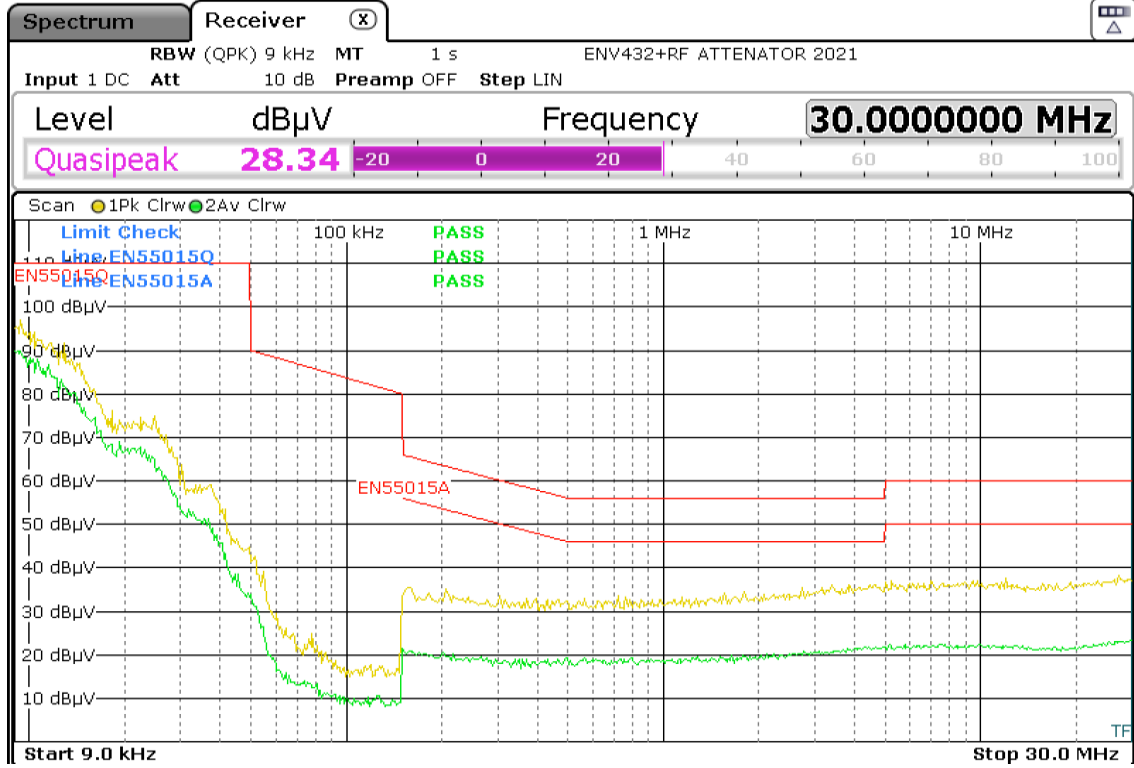
EK C1 (Attachment C1)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

Bağlantı ucu bozulma gerilimi deney sonuçları:
(Conducted emission test results)

NÖTR (NOTR)



EK C2 (Attachment C2)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

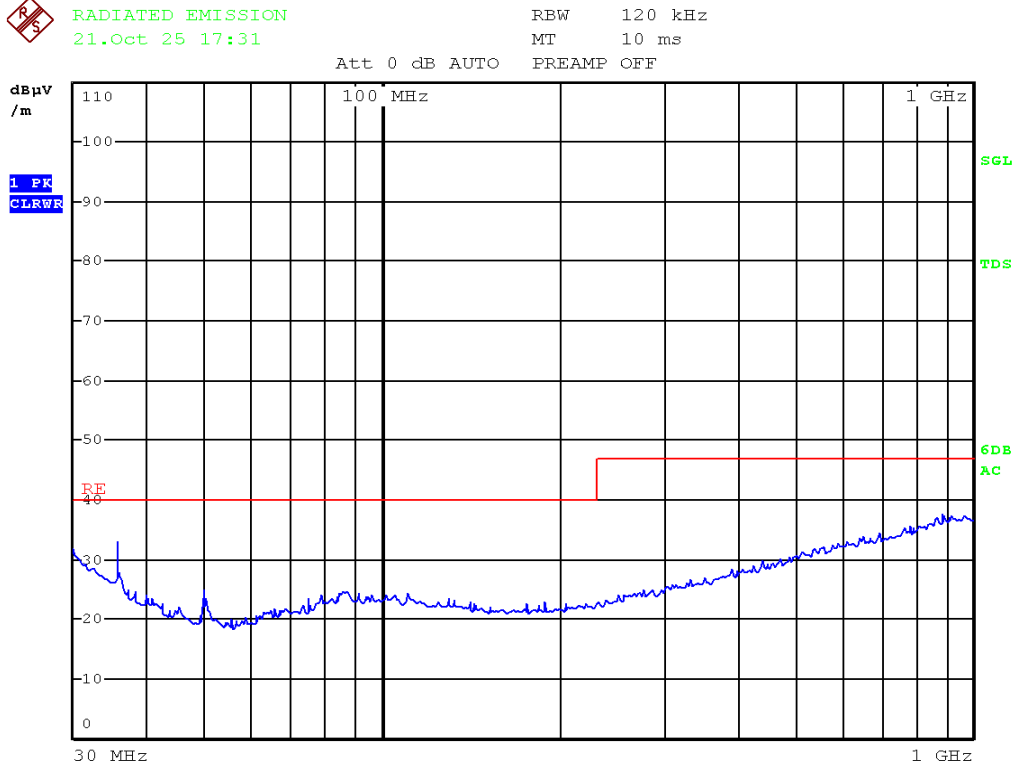
Yayılım bozulması deney sonuçları:

(Radiated emission test results)

DİKEY

(VERTICAL)

LED AÇIK



EK C3 EK C3 (Attachment C3)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

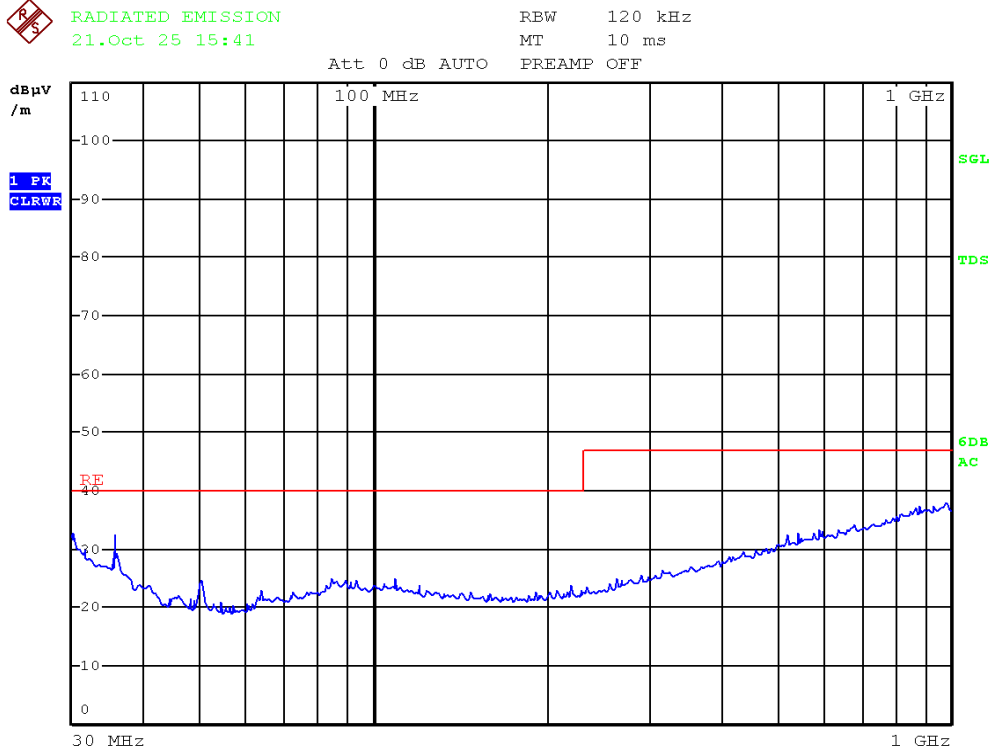
Yayılım bozulması deney sonuçları:

(Radiated emission test results)

DİKEY

(VERTICAL)

LED KAPALI



EK C4 EK C3 (Attachment C3)

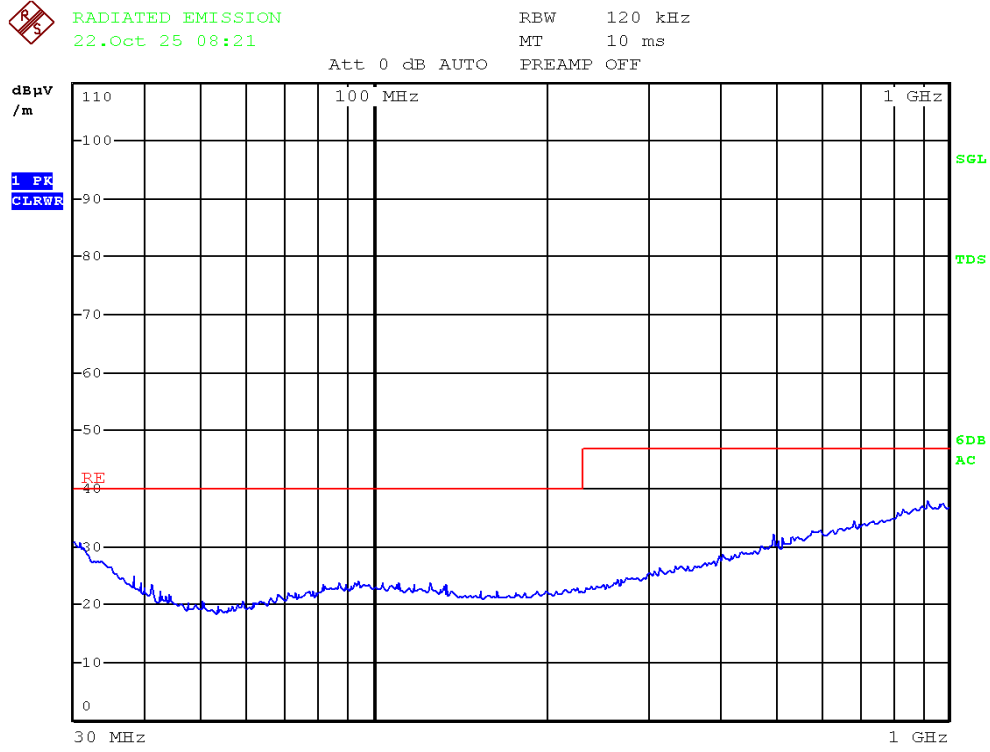
Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

Yayılım bozulması deney sonuçları:
(Radiated emission test results)

YATAY
(HORIZONTAL)

LED AÇIK



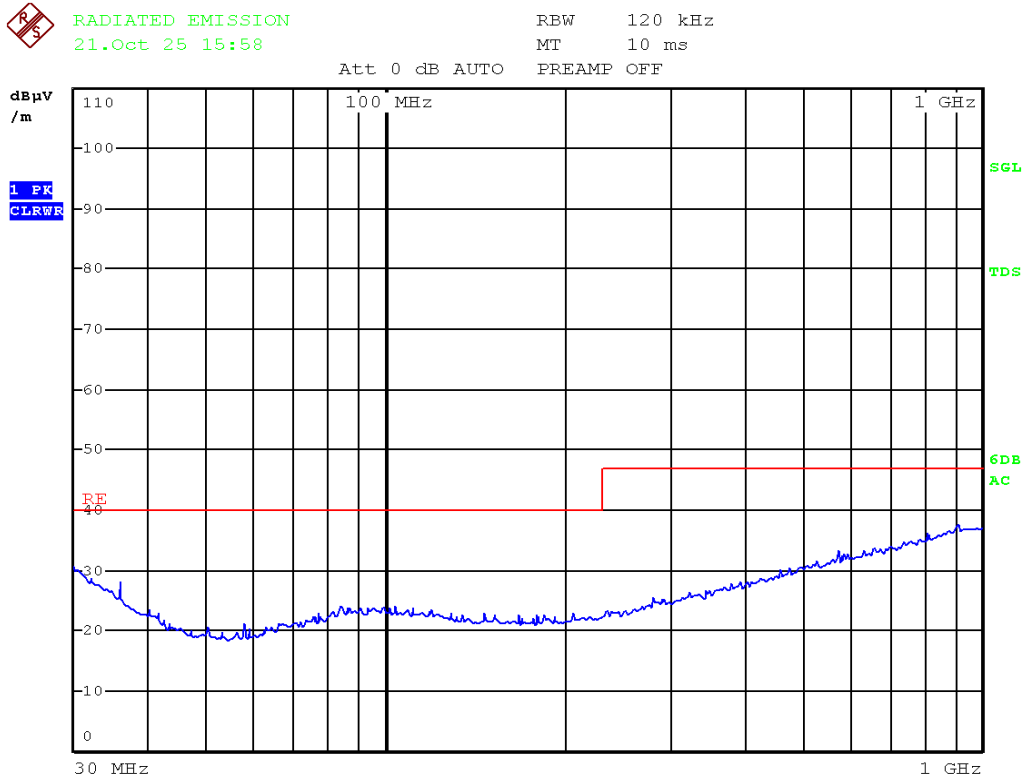
EK C5 (Attachment C5)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

Yayılım bozulması deney sonuçları:
(Radiated emission test results)

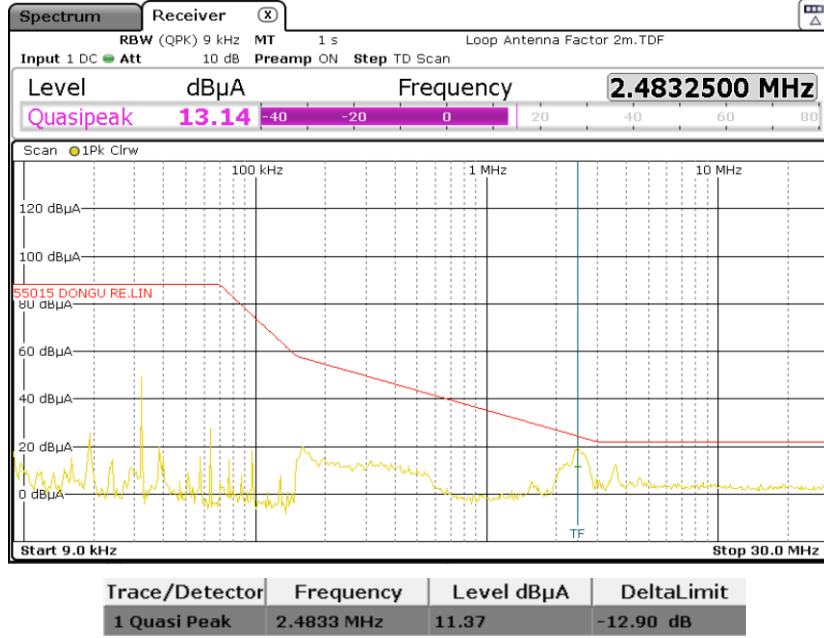
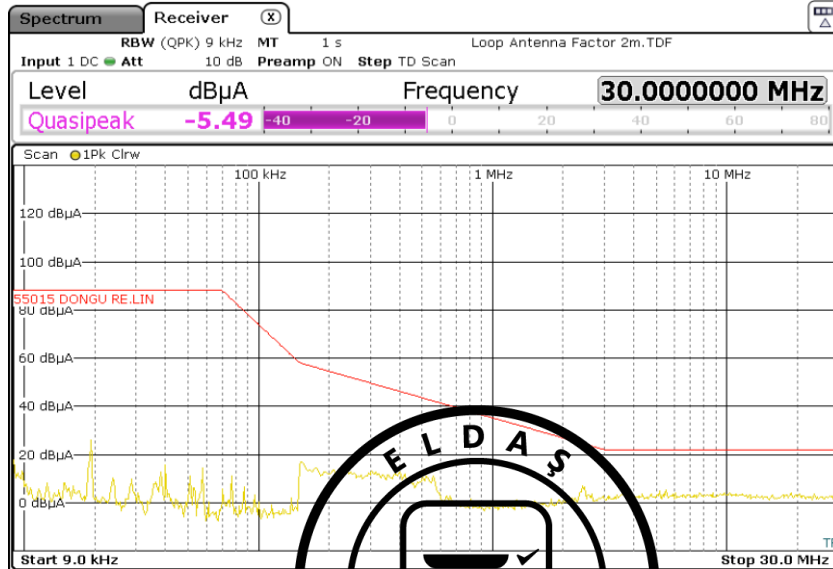
YATAY
(HORIZONTAL)

LED KAPALI



EK C6 (Attachment C6)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

Yayılım bozulması deney sonuçları:
(Radiated emission test results)**Frekans aralığı:** 9 kHz - 30 MHz
(Frequency range)**X EKSENİ**
LED AÇIK**LED KAPALI****EK C7 (Attachment C7)**

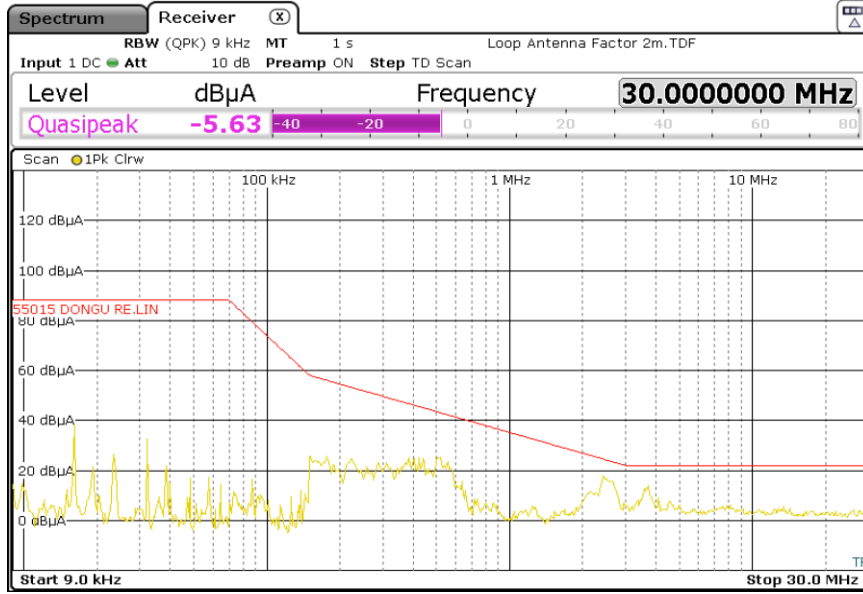
Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

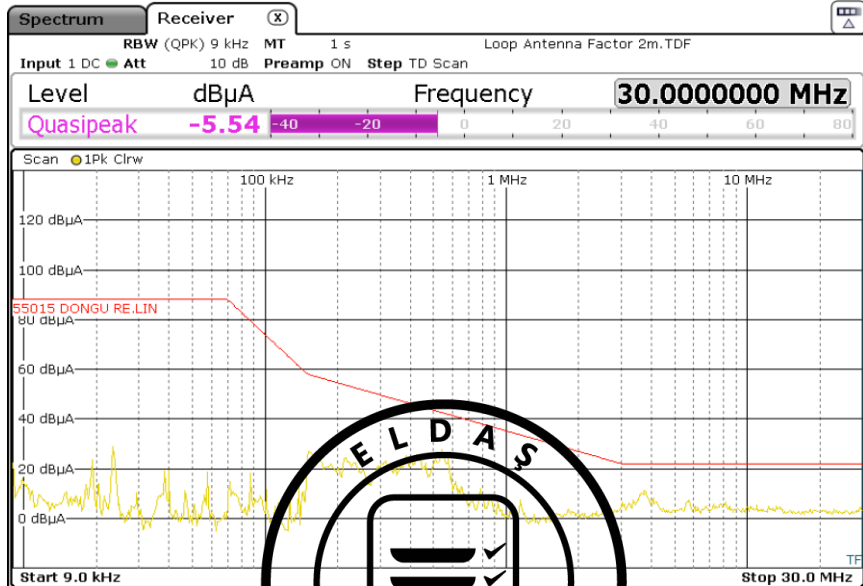
Yayılım bozulması deney sonuçları:
(Radiated emission test results)

Frekans aralığı: 9 kHz - 30 MHz
(Frequency range)

Y EKSENİ
LED AÇIK



LED KAPALI



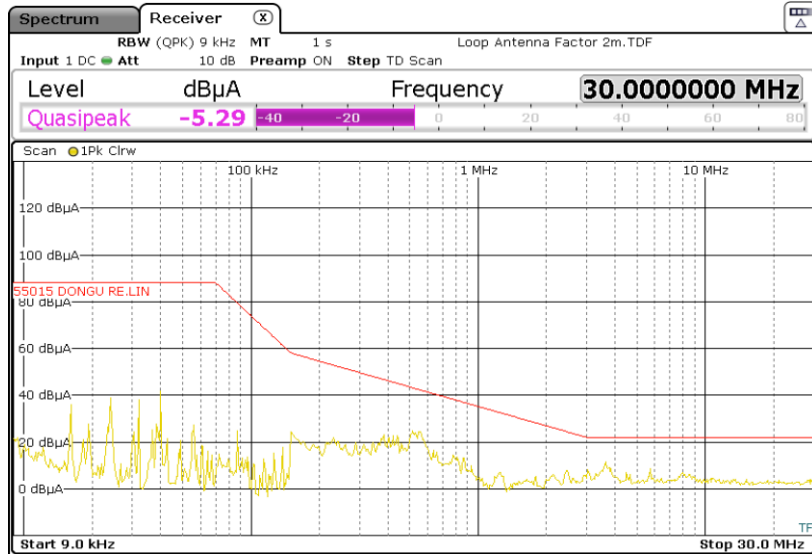
EK C8 (Attachment C8)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

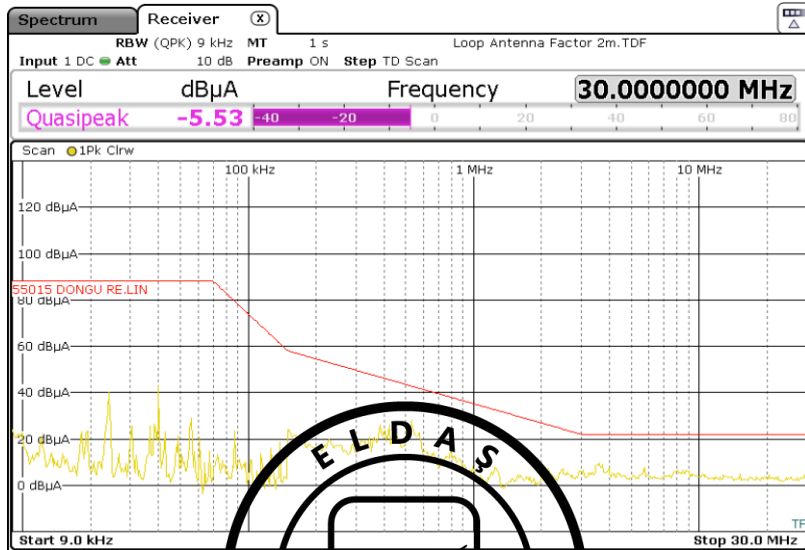
Yayılım bozulması deney sonuçları:
(Radiated emission test results)

Frekans aralığı: 9 kHz - 30 MHz
(Frequency range)

Z EKSENİ
LED AÇIK



LED KAPALI

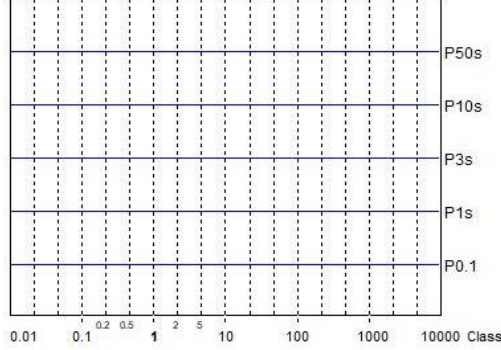


EK C9 (Attachment C9)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya tamamen kopyalanamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

Gerilim dalgalanmaları ve kırışma testi sonuçları:
(Voltage variations and flicker test results)

Flicker Emission IEC 61000-4-15 for 230V/50Hz



Actual Flicker (Fli):	0.00
Short-term Flicker (Pst):	0.07
Limit (Pst):	1.00
Long-term Flicker (Plt):	0.07
Limit (Plt):	0.00
Maximum Relative Volt. Change (dmax):	0.00%
Limit (dmax):	4.00%
Relative Steady-state Voltage Change (dc):	0.01%
Limit (dc):	3.30%
Tmax 3.30% (dt):	0.00ms
Limit (dt>Lim):	500ms

Flicker Emission - IEC 61000-3-3, EN 61000-3-3

Urms = 230.1 V P = 3.681 W
Irms = 0.020 A pf = 0.819

LBEX YFB-200

Test completed, Result: PASSED

8.10.2025 15:24:30

Range: 10 A
V-nom: 230 V
TestTime: 10 min (100%)

HAR-1000 EMC-Partner

Full Bar : Actual Values
Empty Bar : Maximum Values
Circles : Average Values
Blue : Current , Green : Voltage , Red : Failed

HARCS Protocol

Urms = 230.1V Freq = 50.013 Range: 10 A
Irms = 0.020A Ipk = 0.049A cf = 2.500
P = 3.681W S = 4.494VA pf = 0.819
Test - Time : 1 x 10min = 10min (100 %)
LIN (Line Impedance Network) : L: 0.24ohm +j0.15ohm N: 0.16ohm +j0.10ohm
Limits : Plt : 0.00 Pst : 1.00
dmax : 4.00 % dc : 3.30 %
dtLim: 3.30 % dt>Lim: 500ms
Test completed, Result: PASSED
dmax
[%]
1 0.000

Definitions of Abbreviations

Urms *** Actual total Voltage in Volt RMS
Irms *** Actual total Current in Ampere RMS
Ipk *** Actual Peak value of the Current in Ampere
cf *** Actual Crest Factor (Ipk/Irms)
P *** Actual Active Power in Watt (Urms*Irms)
S *** Actual Apparent Power in VA (Urms*Irms)
pf *** Actual Power Factor (P/S)
Plt Long term Flicker over all Pst-cycles
For every Pst-cycle:
dmax Maximum voltage changes between two steady state conditions
General :
- The values marked with "****" are actual values which could vary during test-time and are taken at the time of protocol printout.



EK C10 (Attachment C10)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

3.4 - KOMPONENT LİSTESİ
(Component List)

ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti. Tel: 0 (216) 606 05 95 Fax: 0 (216) 605 05 91 Abdurrahman Gazi Mah. Sevenler Cad. No:5 D:5 Sancaktepe/İSTANBUL www.albenerji.com ALB ENERJİ LIGHT UP YOUR FUTURE !		
ALB ENERJİ – KRİTİK KOMPONENT LİSTESİ		
REFERANS	VALUE	ADET
C3,C4,C5,C7	100NF 1206 %5 SMD CAPACITOR	4
Q1,Q6	BC807-5C TRANSISTOR SMD SOT23	2
R2,R3,R9,R16,R23	1K %5 1206 SMD RESISTOR	5
D1,D2,D3,D4,D5,D10	1N4148 / SOD-323	6
Q2,Q3,Q4,Q5,Q7,Q10	BC817-6C-1B TRANSISTOR SMD SOT23	6
R4	27K %5 1206 SMD RESISTOR	1
R5	120K %5 1206 SMD RESISTOR	1
R6,R15,R17,R18,R22,R21	0R %5 1206 SMD RESISTOR	6
R7	100R %5 1206 SMD RESISTOR	1
BR1,BR2	B10S 500V 0.8A BRIDGE DIODE	2
R8,R12	4K7 %5 1206 SMD RESISTOR	2
C6	1UF 1206 %5 SMD CAPACITOR	1
R11	6K2 %1 1206 SMD RESISTOR	1
R10	22K %1 1206 SMD RESISTOR	1
R19	10K %1 1206 SMD RESISTOR	1
D6	6V8 SOD-80 MİNİ MELF ZENER DIODE	1
R13	39R %5 1206 SMD RESISTOR	1
R14	2K2 %5 1206 SMD RESISTOR	1
R19,R20	220R %5 1206 SMD RESISTOR	2
PL1	3.96VH 2'li DİP CONNECTOR	1
KLM1	4P 3.5MM VAGO KLEMENS	1
RL2	HLS-14F3L-DC5V-C	1
L1	13*9 68UH INDUCTOR	1
C9	1NF 1600V 15MM POLYESTER CAPACITOR	1
TRF2	EF25 70MH LEGGED TRANSFORMER	1
C2	470UF 25V POLAR CAPASITOR	1
Q8,Q9	TIP41C Npn TRANSISTOR	2
C8	330NF 100V 5 mm POLYESTER CAPACITOR	1
TRF1	230V 9V 1.5A TRANSFORMER	1
R1	33R 2-3W AXIAL RESISTOR	1
RL1	HF46F 12-HS1 5A ROLE	1
C1	100UF 25V POLAR CAPASITOR	1
KLM2	8P 3.5MM VAGO KLEMENS	1
YFP-33	3.6V/4000mAh PİL	1

3.5 AYNİYET BEYANI

(Identity Declaration)

02.10.2025



AYNİYET BEYANI

IDENTITY DECLARATION

YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12 model ürünlerin bütün teknik özelliklerinin (örn. tasarım, konstrüksiyon, özellikler, kritik komponentler) aynı olduğunu beyan ederiz.

We declare that the product(s) is (are) identical in all technical respects (e.g. design, construction, properties, critical components).

Model/Type Ref: YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12



ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti.
Tel: 0 (216) 606 05 96 Fax: 0 (216) 606 05 91
Abdurrahman Gazi Mah. Sevenler Cad. Bina No: 5/10-5 Sancaktepe/İSTANBUL
www.albenerji.com

ALB ENERJİ SERVİS AYDINLATMA
VE MÜHENDİSLİK ÇÖZÜMLERİ LTD. ŞTİ.
Abdurrahman Gazi Mah. Sevenler Cad.
No: 5/10-5 Sancaktepe - İSTANBUL
Sicil No: 272500
Mersis No: 0099 0684 100 00001



EK E1 (Attachment E1)

Bu sertifika laboratuvarın yazılı izni olmadan kısmen veya bütünüyle kopyalanamaz. İmzasız ve mührsüz sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory . Certificate without signature and seal are not valid.

AB-2029-T

25100011

10-25

TEST REPORT

Report No / Revision No: 25100011 / 1

Page: 1/8

CUSTOMER INFORMATION

Applicant: ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti.
Address: Abdurrahmangazi, Sevenler CD. BİNA NO 55 D:5, 34887 Sancaktepe/İstanbul
Related Person: -
Contact: -

SAMPLE INFORMATION

Sample Acceptance Date : 06.10.2025
Sample Description: Emergency Lighting Kit
Amount: 1 Piece
Brand: ALBEX
Model No: YFB-200

Explanation: Based on the performed tests on selected part of submitted samples, RoHS Tests comply with the limits as set by Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

GENERAL EVALUATION PASS**Seal****Sample Acceptance and
Reporter**
Arzum ANLI**Laboratory Manager**

Tuğba YILMAZ

**Date**

10.10.2025

TEST REPORT

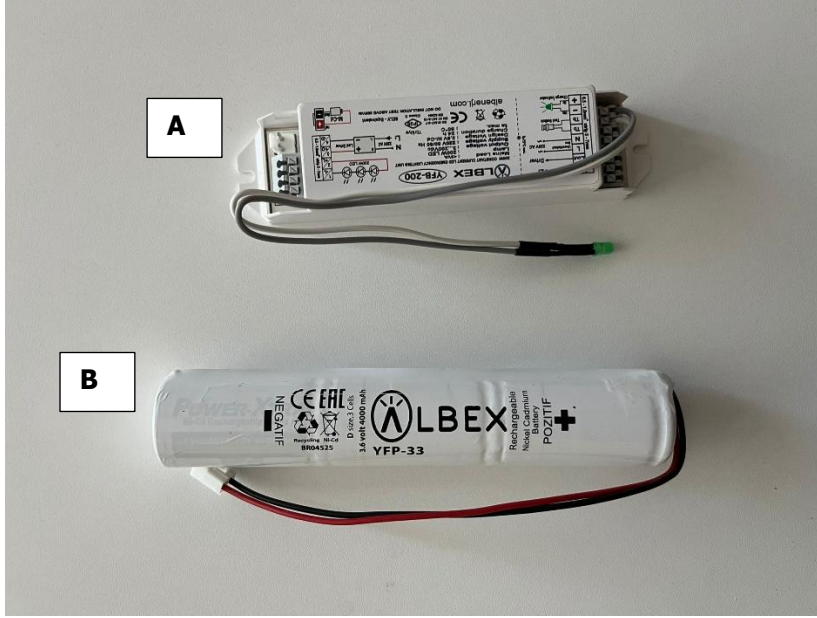
AB-2029-T

25090099

10-25

Report No / Revision No: 25100011 / 1

Page: 2/8

SAMPLE PHOTO**SUMMARY TEST RESULT**

	ANALYSIS	METHOD	EVALUATION
	Cadmium (Cd) Content	IEC 62321-5:2013	PASS
*	Lead (Pb) Content	CPSC-CH-E1001-08.3	PASS
	Mercury (Hg) Content	IEC 62321-4:2017	PASS
	Hexavalent Chromium (CrVI) (for non metal)	IEC 62321-7-2:2017	PASS
	Hexavalent Chromium (CrVI) (for metal)	IEC 62321-7-1:2015	PASS
	Flame Retardants (PBBs/PBDEs)	IEC 62321-6:2015	PASS
*	Phthalates	CPSC-CH-C1001-09.4	PASS

TEST REPORT

AB-2029-T

25090099

10-25

Report No / Revision No: 25100011 / 1

Page: 3/8

SAMPLE DETAILS

SAMPLE	NO	DESCRIPTION
A	1	Gray cable
A	2	White cable
A	3	Black plastic cable end
A	4	Green plastic charge indicator
A	5	Gray plastic cable entry socket
A	6	Black printed adhesive label
A	7	White plastic switch
A	8	White plastic outer case
A	9	Gray metal connector ends
A	10	Green internal circuit board
B	11	Red cable
B	12	Black cable
B	13	White cable end
B	14	Printed white plastic outer shell
B	15	Battery

TEST REPORT

AB-2029-T

25090099

10-25

Report No / Revision No: 25100011 / 1

Page: 4/8

TEST RESULTS

The following analyzes have been made in line with the customer request.

Decision Rule: The customer has stated that he wants to make a declaration of conformity "without measurement uncertainty".

CADMIUM (Cd) CONTENT			
Test Method:	IEC 62321-5:2013		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Part	Result	Limit	Evaluation
1+2+3	< 5	100	PASS
4	< 5	100	PASS
5+7+8	< 5	100	PASS
6+14	< 5	100	PASS
9	< 5	100	PASS
10	< 5	100	PASS
11+12+13	< 5	100	PASS
15	< 5	100	PASS

Controlled Parameters: Cadmium

Report Limiting for Plastic : 5,00 mg/kg
Limit value for cadmium 0.01 % (100 ppm)
Measurement Uncertainty : ± % 8,4

Analysis by microwave or acid digestion and determined by ICP-MS

*LEAD (Pb) CONTENT			
Test Method:	CPSC-CH-E1001-08.3		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Parts	Result (mg/kg)	Limit (mg/kg)	Evaluation
1+2+3	< 5	1000	PASS
4	< 5	1000	PASS
5+7+8	< 5	1000	PASS
6+14	< 5	1000	PASS
9	< 5	1000	PASS
10	< 5	1000	PASS
11+12+13	< 5	1000	PASS
15	< 5	1000	PASS

Controlled Parameters: Lead

Report Limiting for Plastic : 5,00 mg/kg
Limit value for lead 0.1 % (1000 ppm)
Measurement Uncertainty : ± % 8,4

*According to DIRECTIVE 2011/65/EU, the lead limit for copper alloy materials is 4%.

Analysis by microwave or acid digestion and determined by ICP-MS

TEST REPORT

Report No / Revision No: 25100011 / 1

Page: 5/8

MERCURY (Hg) CONTENT

Test Method:	IEC 62321-4:2017		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Parts	Result (mg/kg)	Limit (mg/kg)	Evaluation
1+2+3	< 1	1000	PASS
4	< 1	1000	PASS
5+7+8	< 1	1000	PASS
6+14	< 1	1000	PASS
9	< 1	1000	PASS
10	< 1	1000	PASS
11+12+13	< 1	1000	PASS
15	< 1	1000	PASS

Controlled Parameters: Mercury

Report Limiting for Plastic : 1,00 mg/kg

Limit value for Hg 0.1 % (1000 ppm)

Measurement Uncertainty : ± % 11,9

Analysis by microwave or acid digestion and determined by ICP-MS

HEXAVALENT CHROMIUM (CrVI) (for non metal)

Test Method:	IEC 62321-7-2:2017		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Parts	Result (mg/kg)	Limit (mg/kg)	Evaluation
1+2+3	< 25	1000	PASS
4+5+7	< 25	1000	PASS
6+14	< 25	1000	PASS
8+11+12	< 25	1000	PASS
13	< 25	1000	PASS

Controlled Parameters: Cr+6 content

Report Limiting for Plastic : 25,00 mg/kg

Limit value for Cr+6 0.1 % (1000 ppm)

Measurement Uncertainty : ± % 10,9

Analysis by Ultraviolet-Visible Spectroscopy (UV-VIS spectrophotometer) device.

TEST REPORT

Report No / Revision No: 25100011 / 1

Page: 6/8

HEXAVALENT CHROMIUM (CrVI) (for metal)

Test Method:	IEC 62321-7-1:2015		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Parts	Result (mg/kg)	Limit (mg/kg)	Evaluation
9	< 0,10	Stated Below	PASS
10	< 0,10	Stated Below	PASS
15	< 0,10	Stated Below	PASS

Controlled Parameters:
Cr+6 contentReport Limiting for Metal : 0.1 mg/kg with 50 cm²
Limit value for Cr+6

< 0.10 µg/cm ²	Negative
≥ 0.10 µg/cm ² and ≤ 0.13 µg/cm ²	Inconclusive
> 0.13 µg/cm ²	Positive

Analysis with Ultraviolet-visible spectroscopy (UV-VIS spectrophotometer) device.

FLAME RETARDANTS (PBBS/PBDES)

Test Method:	IEC 62321-6:2015		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Parts	Result (mg/kg)	Limit (mg/kg)	Evaluation
1+2+3	< 10	1000	PASS
4+5+7	< 10	1000	PASS
6+14	< 10	1000	PASS
8+11+12	< 10	1000	PASS
13	< 10	1000	PASS

Controlled Parameters:

Polybrominated Biphenyls (PBB)
Monobromobiphenyl (MonoBB)
Dibromobiphenyl (DiBB)
Tribromobiphenyl (TriBB)
Tetrabromobiphenyl (TetraBB)
Pentabromobiphenyl (PentaBB)
Hexabromobiphenyl (HexaBB)
Heptabromobiphenyl (HeptaBB)
Octabromobiphenyl (OctaBB)
Nonabromobiphenyl (NonaBB)
Decabromobiphenyl (DecaBB)

Polybrominated Diphenyl Ethers (PBDE)
Monobromodiphenyl Ether (MonoBDE)
Dibromodiphenyl Ether (DiBDE)
Tribromodiphenyl Ether (TriBDE)
Tetrabromodiphenyl Ether (TetraBDE)
Pentabromodiphenyl Ether (PentaBDE)
Hexabromodiphenyl Ether (HexaBDE)
Heptabromodiphenyl Ether (HeptaBDE)
Octabromodiphenyl Ether (OctaBDE)
Nonabromodiphenyl Ether (NonaBDE)
Decabromodiphenyl Ether (DecaBDE)

Report Limiting : 10 mg/kg
Limit value for total (PBBS/PBDES) 0.1 % (1000 ppm)
Measurement Uncertainty : ± % 11,2

Analysis with Gas Chromatography Mass Spectroscopy (GC-MS) device.

TEST REPORT

AB-2029-T

25090099

10-25

Report No / Revision No: 25100011 / 1

Page: 7/7

***PHTHALATES**

Test Method:	CPSC-CH-C1001-09.4		
Test Start Date:	06.10.2025	Test Finish Date:	10.10.2025
Test Parts	Result (mg/kg)	Limit (mg/kg)	Evaluation
1+2+3	< 50	1000	PASS
4+5+7	< 50	1000	PASS
6+14	< 50	1000	PASS
8+11+12	< 50	1000	PASS
13	< 50	1000	PASS

Controlled Parameters:

Dibutylphthalate (DBP) (CAS No : 84-74-2)
Butylbenzyl phthalate (BBP) (CAS No : 85-68-7)
Di-(2-ethylhexyl)-phthalate (DEHP) (CAS No : 117-81-7)
Di-iso-butyl phthalate (DIBP) (CAS No : 84-69-5)

Report Limiting : 50 mg/kg
Limit value for Phthalates 0.1 % (1000 ppm)
Measurement Uncertainty : ± % 15,1

Analysis with Gas Chromatography Mass Spectroscopy (GC-MS) device.

*** End Report ***

Müşteri Adı / Adresi: ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti
Client name/address : Abdurrahmangazi, Sevenler CD. BİNA NO 55 D:5, 34887 Sancaktepe/İstanbul

İş Emri No: 250925-04
Work Order No:

Test Edilen Ürün: Acil Durum Aydınlatma Kiti
Items tested: Emergency Lighting Kit

Açıklamalar DGC'ye TS EN 61347-2-13 standardı uyarınca Sayfa 7'de belirtilen testler uygulanmıştır.
Detaylı Bilgi için 7. sayfaya bakınız.
Remarks: Test at page 7 were applied to EUT according to standard 61347-2-13.
Check page 7 for further information.

Numune Kabul Tarihi: 27.10.2025
The date of receipt of test item:

Deney Tarihi : 29.10.2025 - 13.11.2025
Date of test:

Yayımlandığı Tarih: 27.11.2025
Date of Publication:

Onay Tarihi : 27.11.2025
Date of Approval

Rapor Sorumlusu
Person in Charge of Test Report

Laboratuvar Müdürü V.
Head of Testing Laboratory D.



Ahmet CANBOLAT

Oktay TOSUN

TÜRKAK Akreditasyon Markası: TÜRKAK tarafından akredite edilmiş kuruluşların, akreditasyon statülerini göstermek için kullanılan, TÜRKAK logosunun altına; akreditasyon alanı, akreditasyona konu olan standardın numarası ve akredite edilmiş kuruluşun akreditasyon numarasının eklenmesi ile oluşturulan semboldür.

"TÜRKAK Accreditation Marking" is a symbol to state the Turkish Accreditation Agency (TÜRKAK) accredited company's accreditation status, accredited standard, accreditation number and is presented below the TÜRKAK logo.

Raporda kullanılan TÜRKAK akreditasyon markasının kullanım yetkisi sadece Eldaş Test ve Kalibrasyon Elektrik Sanayi ve Ticaret A.Ş. 'ye ait olup üçüncü tarafların kullanması kesinlikle yasaktır.

All rights regarding the "TÜRKAK Accreditation Marking" belong solely to Eldaş Test ve Kalibrasyon Elektrik Sanayi ve Ticaret A.Ş. and cannot be used by third parties.

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Agency (TÜRKAK) is signatory to the multilateral agreements of the European cooperation for the Accreditation (EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognition of test reports.

*** İşaretili deneyler akreditasyon kapsamı dahilinde değildir.**

* Signed tests accreditation number are not in the scope of accreditation.

Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması 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.

Bu belge bir bütündür, herhangi bir sebeple ya da amaçla parçalarına ayıramaz ve bütün halinde değerlendirilir. Belge ve bütün versiyonlarının Eldaş test ve Kalibrasyon Elektrik Sanayi ve Tic. A.Ş.'nin izni olmadan değiştirilmesi veya çoğaltılması yasaktır. Islak imza içermeyen deney raporları geçerli değildir. Islak imzalı kağıt baskı ve Elektronik versiyon arasında bir ihtilafın bulunması durumunda ıslak imzalı kağıt baskı versiyon geçerlidir.

This report, in any circumstances, cannot be divided into parts and must be presented and evaluated in its entirety. It is prohibited to change or duplicate any version of this document without the approval of Eldaş test ve Kalibrasyon Elektrik Sanayi ve Tic. A.Ş. The reports without a signature are considered invalid for all purposes. In case of a conflict between the electronic version (e.g. PDF file) and the original paper version with signature, the paper version with signature is valid.

ELDAŞ; TÜRKAK'tan AB-1532-T ile TS EN ISO/IEC 17025:2017 standardında göre akredite edilmiştir.
ELDAŞ; It has been accredited by TÜRKAK according to AB-1532-T and TS EN ISO/IEC 17025:2017 standard.

Bu raporda verilen sonuçlar ve değerlendirmeler sadece üretici/başvuru sahibi tarafından test için sağlanan ürün/sistem ile ilgilidir. Üretilen diğer ürünlerin ve versiyonlarının, bu raporda verilen gereksinimleri karşılaması üreticinin/başvuru sahibinin sorumluluğundadır. Test raporu, ürün aile grubunda bulunan ürünler ile ilgili herhangi bir sonuç içermez ve bu işlem tamamen teorik olarak yapıldığı için grupta bulunan ürünler ile ilgili herhangi bir yasal sorumluluk laboratuvar tarafından kabul edilmez.

The results and analysis in content of this report are only about the product/system provided by the manufacturer/applicant for testing. Ensuring all the other models meet the requirements stated in this report is the manufacturer's/applicant's responsibility. The test report does not contain any results regarding the products in the product family group, since this process is carried out completely theoretically, the laboratory does not accept any legal liability regarding the products in the group.

Bu raporun içerisinde belirtilen ürün bilgileri, üretici/başvuru sahibi tarafından sağlanmış olup, test sonuçları ve uygunluk beyanı bu bilgiler doğrultusunda değerlendirilmiştir. Üretici/başvuru sahibi tarafından sağlanan bilgilerde/verilerde meydana gelebilecek değişikliklerden üretici/başvuru sahibi sorumludur.

The test results and conformity assessments in this report are evaluated with the product information written in this report which was provided by the manufacturer/applicant. All responsibilities of any changes in the information about the product belongs to the manufacturer/applicant.

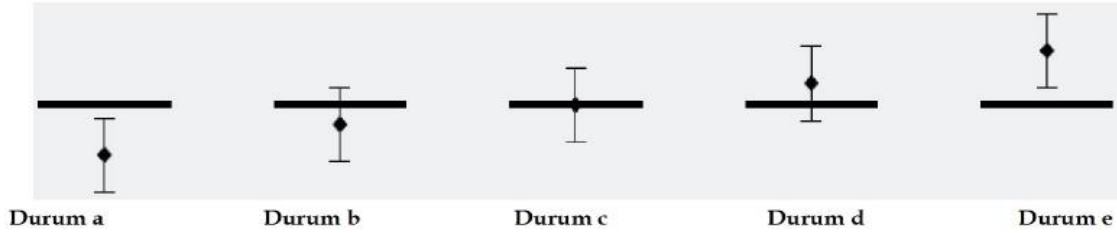
Eldas Test ve Kalibrasyon Elektrik Sanayi ve Ticaret A.Ş. bu belgenin içinde ihtiva edilmekte olan bilgilerin veya verilerin kullanılmasından veya kullanılmamasından kaynaklanan herhangi bir doğrudan, dolaylı, arızı ve kazaen ortaya çıkan yükümlülükleri kabul etmemektedir. Üretilen raporun içerikleri, üçüncü taraflara, yalnızca tam olarak, telif hakkı bildirimi, değiştirme yasağı, feragat beyanı, elektronik versiyonların geçerlilik bildirimi içeren halde gönderilebilir.

The contents of this report may only be transmitted to third parties in its entirety and provided with the copyright notice, prohibition to change, electronic versions validity notice and disclaimer.

DOKÜMAN TARİHÇESİ / REVISION HISTORY

Baskı / Edition	Tarih / Date	Açıklama / Remarks
İlk yayın / First edition	27.11.2025	--

Karar Kuralı Seçimi / Decision Rule Choisen



“♦” Ölçüm Sonucu / Measurement Result

“I” Ölçüm Belirsizliği Aralığı / Measurement Uncertainty Range

Durum a/Situation a; Üst sınırın altındadır bu sebeple ürün spesifikasyona uygundur. / EUT results below the upper limit therefore results are OK.

Durum b/Situation b; Üst sınırın altındadır fakat ölçülen sonuç, belirsizlik aralığının yarısından az bir pay ile üst sınırın altındadır; bu sebeple, uygunluk belirtmek mümkün değildir. Laboratuvar bu sınıra kendi ölçüm belirsizliği hesabına göre karar vererek müşteriye bilgilendirme sağlar. / EUT results are but below the upper limit line with a margin of less than half of the uncertainty; therefore it is not possible to state conformity. The laboratory decides this limit according to its own measurements of the uncertainty and informs the customer.

Durum c/ Situation c ; Ölçülen sonuç sınırın tam üzerindedir, bu sebeple ile “uygun” ya da “uygun değil” diye belirtmek mümkün değildir. Müşteri ile görüşülerek ölçülen değerin limitinin altına indirilmesi sağlanmalıdır. / Eut results are on the limit line therefore, it is impossible to determine whether the test was “passed” or “failed”. In consultation with the customer, it should be ensured, that the measured value is reduced below the limit.

Durum d / Situation d; Üst sınırın üstündedir bu sebeple ürün spesifikasyona uygun değildir. / EUT results are above the limit, therefore the test results are not OK.

Durum e /Situation e ; Üst sınırın üstündedir bu sebeple ürün spesifikasyona uygun değildir. / EUT results are above the limit, therefore the test results are not OK.

Bu sertifika laboratuvarın yazılı izni olmadan kısımları kopyalanıp çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.

This certificate shall not be produced other in full expect with the permission of the laboratory. Certificate without signature and seal are not valid.

İÇİNDEKİLER (Contents)

1 - <u>Dokümantasyon</u> (Documantation)	
1.1 DGC, Çevre Koşulları ve Sembollerin Tanımları (Conditions/Power Utilized, Description of thw EUT & Symbol Definitions)	4
1.2 Deney Standardları (Test Standards)	5
2 - <u>Deney Sonuçları ve Koşulları</u> (Test Results and Conditions)	
2.1 - Deney Sonuçları (Test Results)	10-35
2.2 - Kritik Komponent Listesi (List of Critical Component)	32
3 - <u>EKLER</u>	
3.1 - Ayniyet Beyanı (Identity Declaration)	36
3.2 - DGC'nin Fotoğrafları (Photos of EUT)	37-38

Bu sertifika laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full except with the permission of the laboratory. Certificate without signature and seal are not valid.



DENEYDEN GEÇİRİLEN CİHAZIN :

(Equipment Under Test's)

Markası
(Brand) : ALBEX

Beyan Gerilimi
(Rated Voltage) : 220 - 240 V AC

Modeli
(Model) : YFB-200

Beyan Frekansı
(Rated Frequency) : 50/60 Hz

Seri No
(SN) : Prototip

Beyan Akımı/Gücü
(Rated Current/Power) : 5W / 1300mA

Kısa Tanımı
(Short Description) : Dahili batarya sayesinde şebeke elektriği olmasa da 3 saat ışık sağlar.
Thanks to its internal battery, it provides light for 3 hours even when there is no mains electricity.

Ürün Ailesi Tanımı:

(Product Family Definition):

Ürün aile grubu 8 modelden oluşmaktadır (YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12). Testler YFB-200 model ürüne uygulanmıştır. Aynıyet beyanında bulunan diğer modeller müşteri beyanı ile rapora eklenmiştir. Müşteri beyanı için 36. Sayfaya bakınız.

There are 8 models in this serial product (YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12). The tests were applied to YFB-200 model products. Other models in the identity declaration have been added to the report with the customer declaration. For customer declaration see page 36.

ÇEVRE ŞARTLARI

(Environmental Conditions)

Deneyler sırasında ölçülen çevre şartları ilgili sayfalarda belirtilmiştir.

(The environmental conditions are measured during test are determined related pages.)

DENEY RAPORUNDA KULLANILAN SEMBOLLERİN TANIMLARI

(Definitions of Symbols Used in This Test Report)

DGC - Deneyden geçirilen cihaz
EUT - (Equipment under test)

☒ - **Siyah kutu, deney raporunda kullanılan cihaz, standard ve koşulları gösterir.**
(The black square indicates that the listed condition standard or equipment is applicable for this report.)

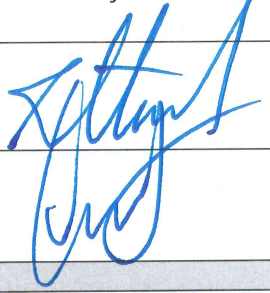
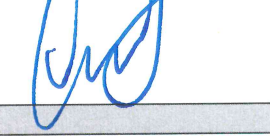
☐ - **Boş kutu, deney raporunda kullanılmayan cihaz, standard ve koşulları gösterir.**
(The empty square indicates that the listed condition standard or equipment isn't applicable for this report.)

Bu sertifika laboratuvarın yazılı izni olmadan kesilen kopyaların çoğaltılması, dağıtılması, kopyasız ve mühürlü sertifikalar geçersizdir.
This certificate shall not be produced other in full expect with the permission of the laboratory. Certificate without signature and seal are not valid.



TEST REPORT IEC 61347-2-13 Part 2: Particular requirements: Section 13 – d.c. or a.c. supplied electronic controlgear for LED modules	
Report Number.:	LVD25-131
Date of issue	27.11.2025
Total number of pages	38
Name of Testing Laboratory preparing the Report.....:	ELDAŞ TEST VE KALİBRASYON ELEKTRİK SANAYİ TİCARET A.Ş.
Applicant's name.....:	ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti
Address	Abdurrahmangazi, Sevenler CD. BİNA NO 55 D:5, 34887 Sancaktepe/İstanbul
Test specification:	
Standard	IEC 61347-2-13:2024 used in conjunction with IEC 61347-1:2024
Test procedure	LVD
Non-standard test method	N/A
Copyright © 2017 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	



Test item description..... :	Emergency Lighting Kit	
Trade Mark..... :	ALBEX	
Manufacturer..... :	ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti	
Model/Type reference..... :	YFB-200	
Ratings..... :	220—240 V AC, 5W / 1300mA	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ Testing Laboratory:	ELDAŞ TEST VE KALİBRASYON ELEKTRİK SANAYİ TİCARET A.Ş.	
Testing location/ address	AHI EVRAN OSB MAH. BÜYÜK SELÇUKLU CAD. NO:2/A SINCAN/ANKARA	
Tested by (name, function, signature)..... :	Ahmet CANBOLAT	
Approved by (name, function, signature) .. :	Oktay TOSUN	
Testing procedure: CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)..... :		
Approved by (name, function, signature) .. :		
Testing procedure: CTF Stage 2:		
Testing location/ address		
Tested by (name + signature)..... :		
Witnessed by (name, function, signature) .. :		
Approved by (name, function, signature) .. :		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature) .. :		
Approved by (name, function, signature) .. :		
Supervised by (name, function, signature) :		



List of Attachments (including a total number of pages in each attachment):**Summary of testing:****Tests performed (name of test and test clause):**

Clause 7(7): Marking
Clause 8(10): Protection Against Accidental Contact With Live Parts
Clause 11(11): Moisture Resistance And Insulation
Clause 12(12): Electric Strength
Clause 14(14): Fault Conditions
Clause 15(-):Transformer Heating
Clause 16(15): Construction
Clause 17(16): Creepage Distances And Clearances
Clause 18(17): Screws, Current-Carrying Parts And Connections
Clause 19(18): Resistance to heat, fire and tracking

Testing location:

ELDAŞ TEST VE KALİBRASYON ELEKTRİK
SANAYİ TİCARET A.Ş.
AHİ EVRAN OSB MAH. BÜYÜK SELÇUKLU CAD.
NO:2/A SİNCAN – ANKARA

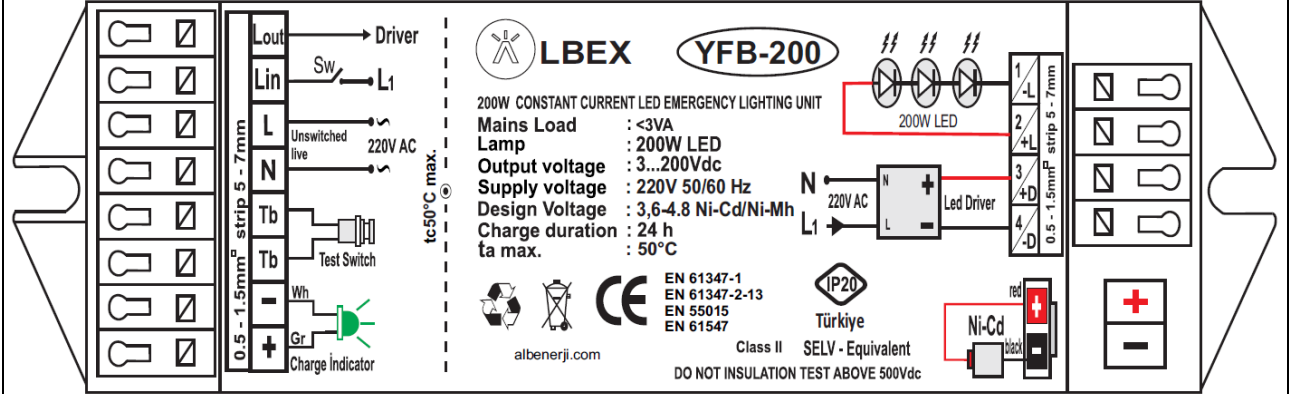
Summary of compliance with National Differences:**List of countries addressed:**

☐ The product fulfils the requirements of (insert standard number and edition and delete the text in parenthesis or delete the whole sentence if not applicable)



Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Test item particulars	
Classification of installation and use	Emergency Lighting Kit
Supply Connection	Supply cord
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	27.10.2025
Date (s) of performance of tests	29.10.2025 – 13.11.2025
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator. Clause numbers between brackets refer to clauses in IEC 61347-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 61347-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	
General product information:	



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

4 (4)	GENERAL REQUIREMENTS		P
- (4)	<u>Insulation materials</u> for double or reinforced insulation according requirements in Annex N of IEC 61347-1	(see Annex N)	P
- (4)	Compliance of <u>independent controlgear enclosure</u> with IEC 60 598-1		P
- (4)	<u>Built-in electronic controlgear</u> with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
4 (4)	<u>SELV controlgear</u> comply with Annex I of this part 2 and Annex L of IEC 61347-1	(see Annex L)	P
4 (-)	Transformer comply with IEC 61558		P
	Dielectric strength test of insulated winding wires is limited to 3 kV if input voltage ≤ 300 V		P

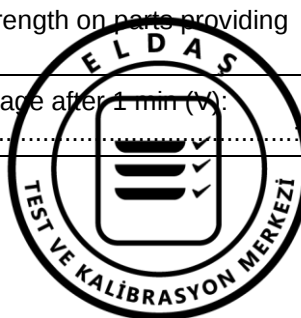
6 (6)	CLASSIFICATION		P
	Built-in controlgear	Yes ☐ No ☐	—
	Independent controlgear	Yes ☒ No ☐	—
	Integral controlgear	Yes ☐ No ☐	—
6 (-)	Auto-wound controlgear	Yes ☐ No ☐	—
	Separating controlgear	Yes ☐ No ☐	—
	Isolating controlgear	Yes ☐ No ☐	—
	SELV controlgear	Yes ☒ No ☐	—

7 (7)	MARKING		P
7.1 (7.1)	Mandatory markings		P
	a) mark of origin	LBEX	P
	b) model number or type reference	YFB-200	P
	c) symbol for independent controlgear, if applicable		N/A
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)	220 V AC	P
	supply frequency (Hz)	50/60 Hz	P
	supply current (A)	1300mA	P
	f) earthing symbol		N/A
	k) wiring diagram		P



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	l) value of t_c	50°C	P
	m) symbol for declared temperature		N/A
	t) LUM earthing symbol		N/A
	u) if not SELV maximum working voltage U_{out} between:		N/A
	- output terminals (V)		N/A
	- output terminals and earth (V)		N/A
7.1 (-)	Constant voltage type:	Yes ☐ No ☐	—
	- rated output power P_{rated} (W)	200 W	P
	- rated output voltage U_{rated} (V)	3-200 VDC	P
	Constant current type:	Yes ☐ No ☒	—
	- rated output power P_{rated} (W)		N/A
	- rated output current I_{rated} (A)		N/A
	Indication if for LED modules only		N/A
7.1 (7.2)	Marking durable and legible		P
	Rubbing 15 s water, 15 s petroleum; marking legible		P
7.2 (7.1)	Information to be provided, if applicable		P
	h) declaration of protection against accidental contact		N/A
	i) cross-section of conductors (mm ²)		P
	j) number, type and wattage of lamp(s)		N/A
	s) SELV symbol		N/A
7.2 (-)	- declaration of mains connected windings		N/A

8 (10)	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
- (10.1)	Controlgear protected against accidental contact with live parts		P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impedance device	(see Annex A)	N/A
- (10.1)	Lacquer or enamel not used for protection or insulation		P
	Adequate mechanical strength on parts providing protection		P
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V		P



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

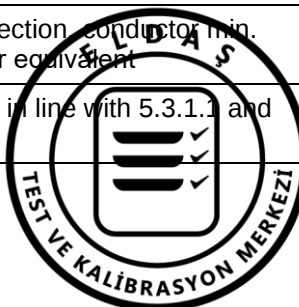
- (10.3)	Controlgear providing SELV		P
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear		P
	No connection between output circuit and the body or protective earthing circuit		N/A
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		P
	SELV outputs separated by at least basic insulation		P
	ELV conductive parts insulated as live parts		N/A
	Tests according Annex L of IEC 61347-1	(see Annex L)	P
- (10.4)	Accessible conductive parts in SELV circuits		P
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.		P
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c. and touch current does not exceed 0,7 mA (peak) or 2 mA d.c.		N/A
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor		P
	Y1 or Y2 capacitors comply with IEC 60384-14		P
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

9 (8)	TERMINALS		N/A
- (8.1)	Integral terminals		N/A
	Screw terminals according section 14 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the controlgear	(see Annex 2)	N/A
	Screwless terminals according section 15 of IEC 60598-1:		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the controlgear	(see Annex 3)	N/A
- (8.2)	Terminals other than integral terminals		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Comply with relevant IEC standard	(see Annex 1)	N/A
	Suit the conditions		N/A
	Satisfy additional relevant requirements of this standard		N/A

10 (9)	PROVISION FOR PROTECTIVE EARTHING		N/A
- (9.1)	Provisions for protective earthing		N/A
	Terminal complying with clause 8		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
	Test according 7.2.3 of IEC 60598-1		N/A
- (9.2)	Provision for functional earthing		N/A
	Comply with clause 8 and 9.1		N/A
	Functional earth insulated from live parts by double or reinforced insulation		N/A
- (9.3)	Lamp controlgear with conductors for protective earthing by tracks on printed circuit board		N/A
	Test with a current of 25 A between earthing terminal or earthing contact and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
- (9.4)	Earthing of built-in lamp controlgear		N/A
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	Earthing via independent controlgear		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection conductor min. $1,5 \text{ mm}^2$ and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7 of IEC 60598-1		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal or earthing contact and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: $< 0,5 \Omega$		N/A
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	MOISTURE RESISTANCE AND INSULATION		P
- (11)	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance:		P
	For basic insulation $\geq 2 \text{ M}\Omega$	$> 2 \text{ M}\Omega$	P
	For double or reinforced insulation $\geq 4 \text{ M}\Omega$	$> 4 \text{ M}\Omega$	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1		N/A

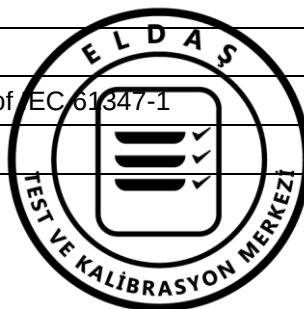
12 (12)	ELECTRIC STRENGTH		P
- (12)	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		P
	Working voltage $\leq 50 \text{ V}$, test voltage 500 V		P
	Working voltage $> 50 \text{ V} \leq 1000 \text{ V}$, test voltage (V):		N/A
	Basic insulation, $2U + 1000 \text{ V}$		N/A
	Supplementary insulation, $2U + 1000 \text{ V}$		N/A
	Double or reinforced insulation, $4U + 2000 \text{ V}$		N/A
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1		P

14 (14)	FAULT CONDITIONS		P
- (14.1)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P



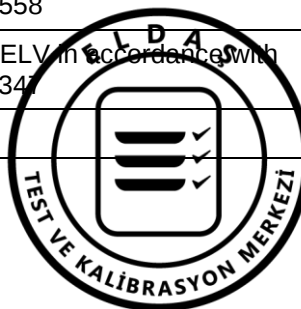
IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.2)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5)	(see appended table)	P
- (14.3)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.4)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table)	N/A
- (14.5)	Short-circuit across electrolytic capacitors	(see appended table)	P
	Short-circuit or interruption of SPDs	(see appended table)	N/A
14 (-)	Reversed voltage polarity if d.c. supplied control gear	(see appended table)	N/A
- (14.6)	After the tests has been carried out on three samples:		P
	The insulation resistance $\geq 1 \text{ M}\Omega$: $> 1 \text{ M}\Omega$		P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.7)	Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		N/A

15 (-)	TRANSFORMER HEATING		P
15.1	General		P
	Transformer comply with clause L.6 and L.7 of IEC 61347-1		P
	Output voltage of SELV controlgear not exceed limits in 10.4 of IEC 61347-1 during the test of 15.1 and 15.2		N/A
15.2 (-)	Normal operation		P
	Comply with clause L.6 of IEC 61347-1		P
15.3 (-)	Abnormal operation		P



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Comply with clause L.7 of IEC 61347-1		P
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		N/A
	Double LED modules or equivalent load connected in serial to the output terminals of constant current type		P
15 (-)	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P

16 (15)	CONSTRUCTION		P
- (15.1)	Wood, cotton, silk, paper and similar fibrous material		P
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	Printed circuits		P
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	Plugs and socket-outlets used in SELV or ELV circuits		P
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies		P
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
- (15.4)	Insulation between circuits and accessible parts		P
- (15.4.2)	SELV circuits		P
	Source used to supply SELV circuits:		P
	- safety isolating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- controlgear providing SELV in accordance with relevant part 2 of IEC 61347		P
	- another source		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Voltage in the circuit not higher than ELV		N/A
	SELV circuits insulated from LV by double or reinforced insulation		P
	SELV circuits insulated from non SELV circuits by double or reinforced insulation		N/A
	SELV circuits insulated from FELV circuits by supplementary insulation		N/A
	SELV circuits insulated from other SELV circuits by basic insulation		P
	SELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
- (15.4.3)	FELV circuits		N/A
	Source used to supply FELV circuits:		N/A
	- separating transformer in accordance with relevant part 2 of IEC 61558		N/A
	- separating controlgear providing basic insulation between input and output circuits in accordance with relevant part 2 of IEC 61347		N/A
	- another source		N/A
	- source in circuits separated by the LV supply by basic insulation		N/A
	Voltage in the circuit not higher than ELV		N/A
	FELV circuits insulated from LV supply by at least basic insulation		N/A
	FELV circuits insulated from other FELV circuits if functional purpose		N/A
	FELV circuits insulated from accessible conductive parts according Table 6 in 15.4.5		N/A
	Plugs and socket-outlets for FELV system comply with:		N/A
	- plugs not able to enter socket-outlets of other voltage systems		N/A
	- socket-outlets not admit plugs of other voltage systems		N/A
	- socket-outlets have a protective conductor contact		N/A
- (15.4.4)	Other circuits		N/A
	Insulation between circuits other than SELV or FELV and accessible conductive parts in accordance Table 6 in 15.4.5		N/A
- (15.4.5)	Insulation between circuits and accessible conductive parts		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessible conductive parts insulated from active parts of electric circuits by insulating according Table 6		N/A
	Requirements for Class II construction with equipotential bonding for protection against indirect contact with live parts:		N/A
	- all conductive parts are connected together		N/A
	- conductive parts are reliably connected together according test of IEC 60598-1 cl. 7.2.3		N/A
	- conductive parts comply with requirements of Annex A in case of insulation fault		N/A

17 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
- (16.1)	General		P
	Creepage distances and clearances according to 16.2 and 16.3		P
	Controlgears providing SELV comply with additional requirements in Annex L		P
	Insulating lining of metallic enclosures		N/A
	Controlgear protected against pollution comply with Annex P	(see Annex P)	N/A
- (16.2)	Creepage distances		P
- (16.2.2)	Minimum creepage distances for working voltages		P
	Creepage distances according to Table 7	(see appended table)	P
- (16.2.3)	Creepage distances for working voltages with frequencies above 30 kHz		N/A
	Creepage distances according to Table 8	(see appended table)	N/A
- (16.3)	Clearances		P
- (16.3.2)	Clearances for working voltages		P
	Clearances distances according to Table 9	(see appended table)	P
- (16.3.3)	Clearances for ignition voltages and working voltages with higher frequencies		N/A
	Clearances distances for basic or supplementary insulation according to Table 10	(see appended table)	N/A
	Clearances distances for reinforced insulation according to Table 11	(see appended table)	N/A

18 (17)	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		P
(4.11)	Electrical connections		P



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
(4.11.1)	Contact pressure		P
(4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface		P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	Mechanical connections and glands		P
(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part		P
	Torque test: torque (Nm); part		N/A
	Torque test: torque (Nm); part		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm		N/A
(4.12.5)	Screwed glands; force (Nm)		N/A

19 (18)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
- (18.1)	Ball-pressure test	See Test Table 19 (18.1)	P
- (18.2)	Test of printed boards	See Test Table 19 (18.2)	P
- (18.3)	Glow-wire test	See Test Table 19 (18.3)	P
- (18.4)	Needle flame test	See Test Table 19 (18.4)	N/A
- (18.5)	Tracking test	See Test Table 19 (18.5)	N/A

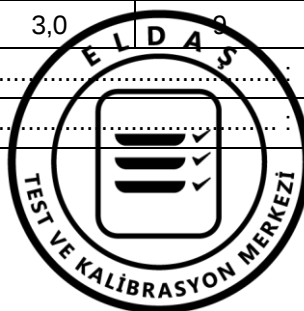
20 (19)	RESISTANCE TO CORROSION		N/A
	- test according 4.18.1 of IEC 60598-1		N/A
	- adequate varnish on the outer surface		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
21 (-)	MAXIMUM WORKING VOLTAGE (U_{out}) IN ANY LOAD CONDITION		N/A
	Not exceed declared maximum working voltage U_{out} in any load condition		N/A

14	TABLE: tests of fault conditions		
Part	Simulated fault		Hazard
Capacitor (C1)	Short circuit		YES/NO
Capacitor (C2)	Short circuit		YES/NO
Resistance (R1)	Short circuit		YES/NO

17 (16)		TABLE: clearance and creepage distance measurements (mm)						P
Applicable part of IEC 61347-1 Table 7 – 11*								
Distances	Insulation type **	Measured clearance	Required		Measured creepage	Required		
			clearance	*Table		creepage	*Table	
Distance 1:	B	2,37	1,5	9	2,37	2,5	7	
Working voltage (V)					220 V		—	
Frequency if applicable (kHz)					<30 kHz		—	
PTI					< 600 ☒ ≥ 600 ☐		—	
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					-		—	
Pulse voltage if applicable (kV)					2,5 kV		—	
Supplementary information: Between L and N								
Distance 2:	B	5,27	1,5	9	5,27	2,5	7	
Working voltage (V)					220 V		—	
Frequency if applicable (kHz)					<30 kHz		—	
PTI					< 600 ☒ ≥ 600 ☐		—	
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)					-		—	
Pulse voltage if applicable (kV)					2,5 kV		—	
Supplementary information: Two pole of relay								
Distance 3:	R	6,2	3,0	9	6,2	5,0	7	
Working voltage (V)					220 V		—	
Frequency if applicable (kHz)					<30 kHz		—	



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
PTI	< 600 ☒ $\geq$ 600 ☐		—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV)	-		—
Pulse voltage if applicable (kV)	2,5 kV		—
Supplementary information: Between live parts and accessible parts			

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

19 (18.1)	TABLE: Ball Pressure Test			P
Allowed impression diameter (mm)	2			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Plastic Enclosure	-	125	1,67	
Supplementary information:				

19 (18.2)	TABLE: Test of printed boards				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
PCB	-	30s	No	0s	P
Supplementary information:					



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

19 (18.3)	TABLE: Glow-wire test			P
Glow wire temperature		650°C		—
Object/ Part No./ Material	Manufacturer/ trademark	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Plastic Enclosure	-	No	0s	P
Supplementary information:				

19 (18.4)	TABLE: Needle-flame test				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (s)	Ignition of specified layer Yes/No	Duration of burning (s)	Verdict
Supplementary information:					

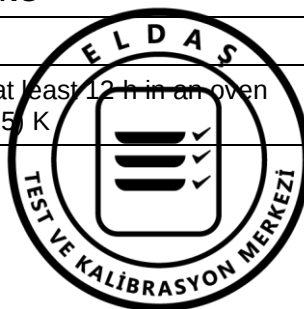
19 (18.5)	TABLE: Proof tracking test				N/A
Test voltage PTI		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

(A)	ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK		N/A
(A.1)	Comply with A.2 or A.3		N/A
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c. :		N/A
(A.3)	If voltage measured according Clause A.2 exceeds the limit value; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. :		N/A
	Comply with Annex G.2 of IEC 60598-1		N/A

(C)	ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING		N/A
(C3)	GENERAL REQUIREMENTS		N/A
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
(C3.2)	No risk of fire by breaking (clause C7)		N/A
(C5)	CLASSIFICATION		N/A
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description .. :		—
(C6)	MARKING		N/A
(C6.1)	Symbol for temperature declared thermally protected ballasts		N/A
(C6.2)	Declaration of the type of protection provided		N/A
(C7)	LIMITATION OF HEATING		N/A
(C7.1)	Preselection test:		N/A
	Test sample placed for at least 12 h in an oven having temperature ($t_c - 5$) K		N/A

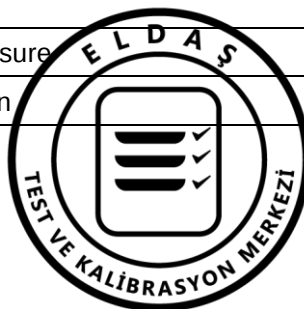


IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

	No operation of the protection device		N/A
(C7.2)	Functioning of protection means:		N/A
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that ($t_c + 0; -5$) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14.2 to 14.5		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the controlgear operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
	After 15 min value not exceed marked value		N/A

(D)	ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR		N/A
	Tests in C7 performed in accordance with Annex D, if applicable		N/A

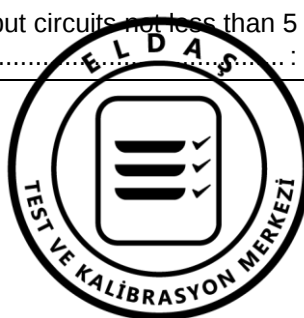
(F)	ANNEX F – DRAUGHT-PROOF ENCLOSURE		N/A
	Draught-proof enclosure in accordance with the description		N/A
	Dimensions of the enclosure		N/A
	Other design; description		N/A



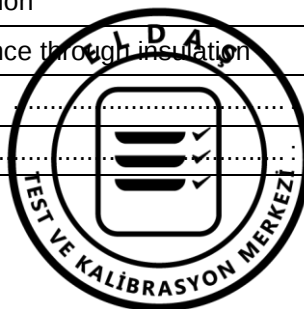
IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

(H)	ANNEX H - TESTS		P
	All tests performed in accordance with the advice given in Annex H, if applicable		P

I (L)	ANNEX I IN THIS PART 2 – PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEARS FOR LED MODULES		P
(L.3)	Classification		P
	Class I	Yes ☐ No ☒	—
	Class II	Yes ☒ No ☐	—
	Class III	Yes ☐ No ☒	—
	non-inherently short circuit proof controlgear	Yes ☐ No ☒	—
	inherently short circuit proof controlgear	Yes ☐ No ☒	—
	fail safe controlgear	Yes ☐ No ☒	—
	non-short-circuit proof controlgear	Yes ☐ No ☒	—
(L.4)	Marking		P
	Adequate symbols are used		P
(L.5)	Protection against electric shock		P
	Comply with clause 9.2 of IEC 61558-1		P
(L.6)	Heating		P
	No excessive temperatures in normal use		P
	Value if capacitor t_c marked	105°C	—
	Winding insulation classified as Class	Class B	—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		P
(L.7)	Short-circuit and overload protection		P
	Comply with tests of clause 15 of IEC 61558-1 with adjustments		P
(L.8)	Insulation resistance and electric strength		P
(L.8.1)	Conditioned 48 h between 91 % and 95 %		P
(L.8.2)	Insulation resistance		P
	Between input- and output circuits not less than 5 MΩ		P



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ		P
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ		P
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits		P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity		P
	b) live parts and body if intended to be connected to protective earth		N/A
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord		N/A
	d) live parts and an intermediate metal part		N/A
	e) intermediate metal parts and the body		N/A
	f) each input circuit and all other input circuits ...		N/A
	3) Over reinforced insulation between the body and live parts		P
(L.9)	Construction		P
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6		P
	HF transformer comply with 19 of IEC 61558-2-16		N/A
(L.10)	Components		N/A
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1		N/A
(L.11)	Creepage distances, clearances and distances through insulation		P
	Creepage distances and clearances not less than in Clause 16		P
	Distance through insulation according Table L.5 in IEC 61347-1		N/A
	1) Basic distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A
	Supplementary information		—
	2) Supplementary distance through insulation		N/A
	Required distance (mm)		—
	Measured (mm)		N/A



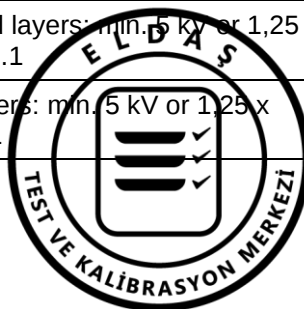
IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Supplementary information		—
	3) Reinforced distance through insulation		P
	Required distance (mm)		—
	Measured (mm)		P
	Supplementary information		—

J (-)	ANNEX J IN THIS PART 2 – PARTICULAR ADDITIONAL SAFETY REQUIREMENTS FOR A.C., A.C./D.C. OR D.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR EMERGENCY LIGHTING		N/A
J.1	General		N/A
	Intended for centralized emergency power supply	Yes ☐ No ☐	—
J.2	Marking		N/A
J.2.1	Mandatory markings		N/A
	a) symbol EL		N/A
	b) rated emergency supply voltage (V)		N/A
J.2.2	Information to be provided if applicable		N/A
	a) Limits of ambient temperature		N/A
	b) Emergency output factor (EOF _x)		N/A
	c) Information if intended for use in luminaires for high-risk task area lighting		N/A
J.3	General notes on tests		N/A
	Length of output cable in tests.....		N/A
	Load instead of LED lamps/modules.....		N/A
J.4	Starting conditions		N/A
	Start rated load in emergency mode without adversely affecting the performance		N/A
J.5	Operating condition		N/A
	Comply with the requirements of 7.2 of IEC 62384 at 90% and 110% of rated emergency supply voltage		N/A
J.6	Emergency supply current		N/A
	Emergency supply current not differ more than $\pm 15\%$		N/A
	Supply of low impedance and low inductance		N/A
J.7	EMC immunity		N/A
	Comply with the requirements of IEC 61547		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
J.8	Pulse voltage from central battery systems		N/A
	Withstand pulses according Table J.1		N/A
J.9	Tests for abnormal conditions		N/A
	Comply with the requirements of 12 of IEC 62384		N/A
J.10	Comply with the requirements of 13 of IEC 62384		N/A
J.11	Functional safety (EOF _x)		N/A
	Declared emergency output factor (EOF _x) achieved during emergency operation		N/A

(N)	ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION		N/A
(N.4)	General requirements		N/A
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	Solid insulation		N/A
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N/A
	If not classified according IEC 60085 and IEC 60216 series: Electric strength test increased 10 % to 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	Thin sheet insulation		N/A
(N.4.3.1)	Thickness and composition of thin sheet insulation		N/A
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		N/A
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N		N/A
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		N/A
	Electric strength test after mandrel test:		N/A
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A

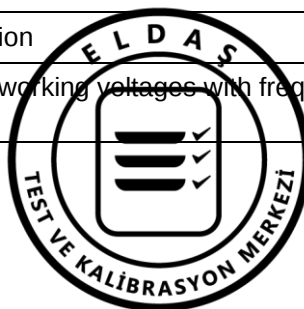


IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	No flashover or breakdown occurred		N/A
(O)	ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION		N/A
(O.6)	Marking		N/A
	Marking according clause 7 (7)	See clause 7	N/A
	Special symbol		N/A
	Meaning of the special symbol explained in catalogue		N/A
(O.7)	Protection against accidental contact with live parts		N/A
	Requirements of clause 8 (10)	See clause 8	N/A
	Test finger not possible to make contact with basic insulated metal parts		N/A
(O.8)	Terminals		N/A
	Clause 9 (8)	See clause 9	N/A
(O.9)	Provision for earthing		N/A
	Functional earthing terminals comply with clause 9 of part 1		N/A
	No protective earthing terminal		N/A
(O.10)	Moisture resistance and insulation		N/A
	Clause 11 (11)	See clause 11	N/A
(O.11)	Electric strength		N/A
	Clause 12 (12)	See clause 12	N/A
(O.13)	Fault conditions		N/A
	Clause 14 (14)	See clause 14	N/A
	End of test, between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface comply with dielectric strength test according clause 12 reduced to 35 % of values according Table 3 in part 1		N/A
	Insulation resistance according to O.10 between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface not less than 4 MΩ		N/A
(O.14)	Construction		N/A
	Clause 17 (15)	See clause 17	N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	Creepage distances and clearances		N/A
	Clause 18 (16)	See clause 18	N/A
	Comply with corresponding values for luminaries in IEC 60598-1		N/A
(O.16)	Screws, current-carrying parts and connections		N/A
	Clause 19 (17)	See clause 19	N/A
(O.17)	Resistance to heat and fire		N/A
	Clause 20 (18)	See clause 20	N/A
(O.18)	Resistance to corrosion		N/A
	Clause 21 (19)	See clause 21	N/A

(P)	Creepage distances and clearances and distance through isolation (DTI) for lamp controlgear which are protected against pollution by the use of coating or potting		N/A
(P.1)	General		N/A
	P.2 applies if creepage distances less than the minimum in Table 7 and 8		N/A
	P.3 applies if clearance less than the minimum in Table 9, 10 and 11		N/A
(P.2)	Creepage distances		N/A
(P.2.2)	Minimum creepage distances for working voltages and rated voltages with frequencies up to 30 kHz (Table P.1)		N/A
	Basic or supplementary insulation:		N/A
	Required creepage		—
	Measured		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Required creepage		—
	Measured		N/A
	Supplementary information		—
(P.2.3)	Creepage distances for working voltages with frequencies above 30 kHz (Table P.2)		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Voltage $\hat{U}_{out}$ kV		—
	Frequency.....		—
	Required distance.....		—
	Measured.....		N/A
	Supplementary information		—
(P.2.4)	Compliance with the required creepage distances		N/A
(P.2.4.1)	Compliance in accordance with 16.3.3 and test according P.2.4.2		N/A
(P.2.4.3)	Electrical tests after conditioning		N/A
(P.2.4.3.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3)	Distance through isolation		N/A
(P.3.4)	Electrical tests after conditioning		N/A
(P.3.4.1)	Insulation resistance and electric strength according Clause 11 and 12		N/A
(P.3.4.2)	Impulse voltage dielectrical test		N/A
	Basic or supplementary insulation:		N/A
	Working/rated voltage		—
	Impulse voltage.....		N/A
	Supplementary information		—
	Reinforced insulation:		N/A
	Working/rated voltage		—
	Impulse voltage.....		N/A
	Supplementary information		—



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: List of critical components					
Component/ Part No.	Manufacturer/ Trademark	Type No./ model No.	Technical data	Standard No./, Edition	Mark(s) & Certificates of conformity
Trafo (Transformer)	SUNRISE ELK. ELEK. SAN. VE TIC. LTD. STI.	EL30/10.5	230V 1.4A	EN 61558	VDE0570
Role (Relay)	SUNRISE ELK. ELEK. SAN. VE TIC. LTD. STI.	HLS-14F3L	DC5V 5A	IEC 60079-0:2011 IEC60079-15:2010	ATS0411191
Klemens (Terminal Block)	SUNRISE ELK. ELEK. SAN. VE TIC. LTD. STI.	DG3.5KP250 A-3.50-4P	250V 3A	IEC 60947-7-2 IEC60947/UL1059	-
Klemens (Terminal Block)	SUNRISE ELK. ELEK. SAN. VE TIC. LTD. STI.	DG3.5KP250 A-3.50-8P	250V 3A	IEC 60947-7-2 IEC60947/UL1059	-
Transistör (Transistor)	SUNRISE ELK. ELEK. SAN. VE TIC. LTD. STI.	TIP41C	100V 6A	GB/T 13555 / GB/T 14552	UL 1411 / UL 94
Şok Bobin (Inductor)	SUNRISE ELK. ELEK. SAN. VE TIC. LTD. STI.	68UH 8x12	50V 2A	IEC 60289, IEC 60938, IEC 61558, IEC 61051	UL 94 V-0



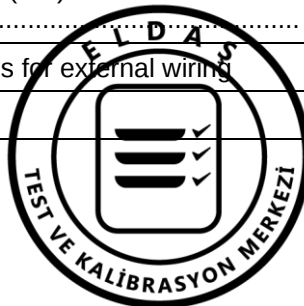
IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	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		N/A
(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



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	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		N/A
	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		N/A



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A
(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		N/A
	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 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

Identity Declaration:

02.10.2025

**AYNIYET BEYANI****IDENTITY DECLARATION**

YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12 model ürünlerin bütün teknik özelliklerinin (örn. tasarım, konstrüksüyon, özellikler, kritik komponentler) aynı olduğunu beyan ederiz.

We declare that the product(s) is (are) identical in all technical respects (e.g. design, construction, properties, critical components).

Model/Type Ref: YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12



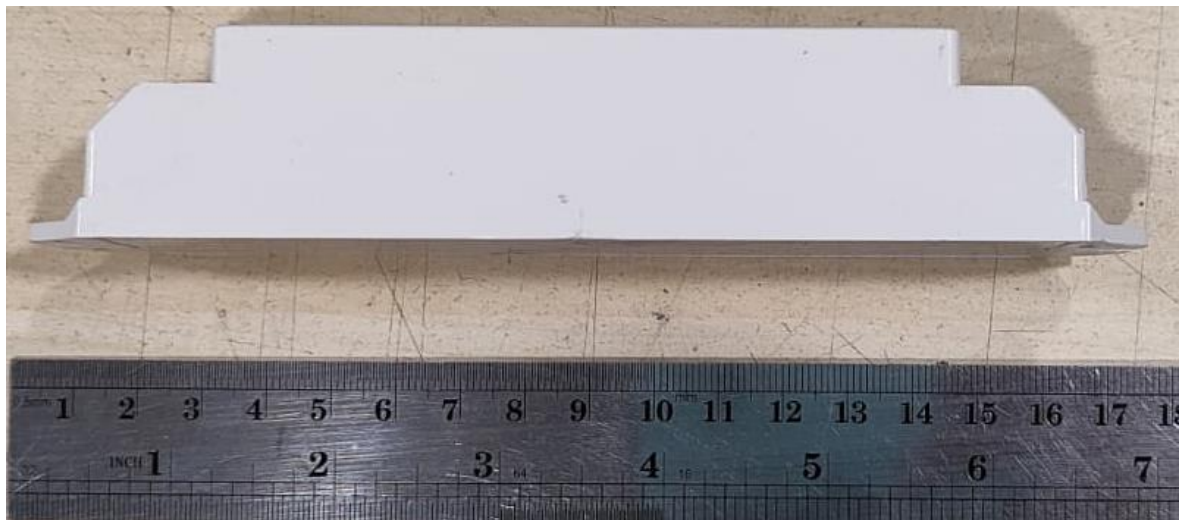
ALB ENERJİ SERVİS AYDINLATMA
VE MÜHENDİSLİK ÇÖZÜMLERİ LTD. ŞTİ.
Abdurrahman Gazi Mah. Sevenler Cad.
No: 55 D:5 Sancaktepe / İSTANBUL
Sultanbeyli Mah. Sevenler Cad. 049 049 4107
Mersis No: 0804 0684 1000 0001

ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti.
Tel: 0 (216) 606 05 96 Fax: 0 (216) 606 05 91
Abdurrahman Gazi Mah. Sevenler Cad. Bina No:55 D:5 Sancaktepe/İSTANBUL
www.albenerji.com

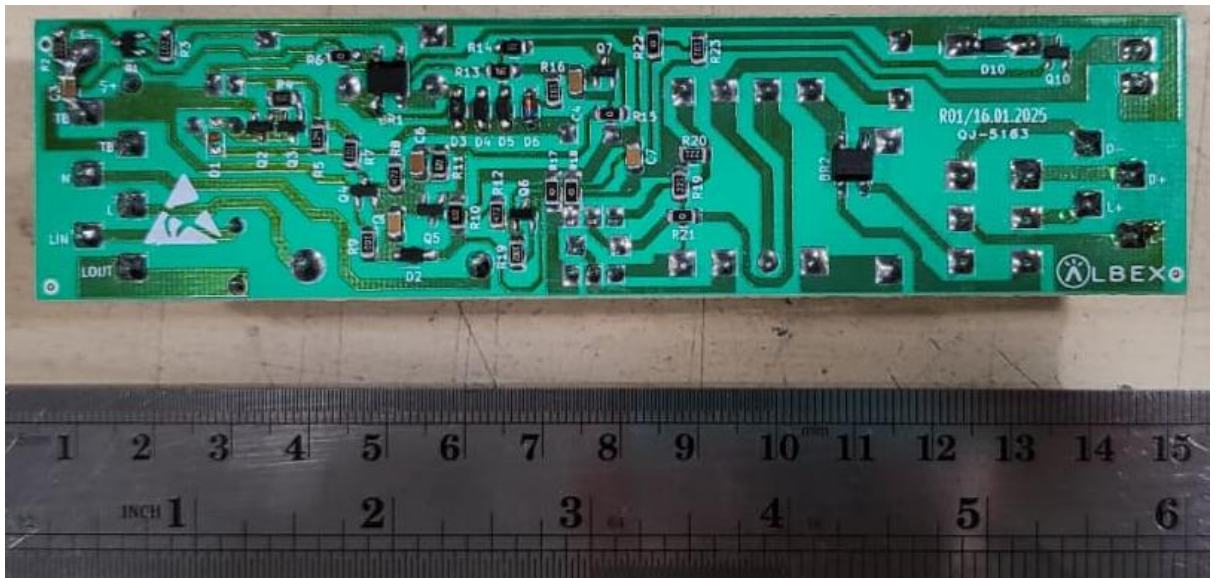
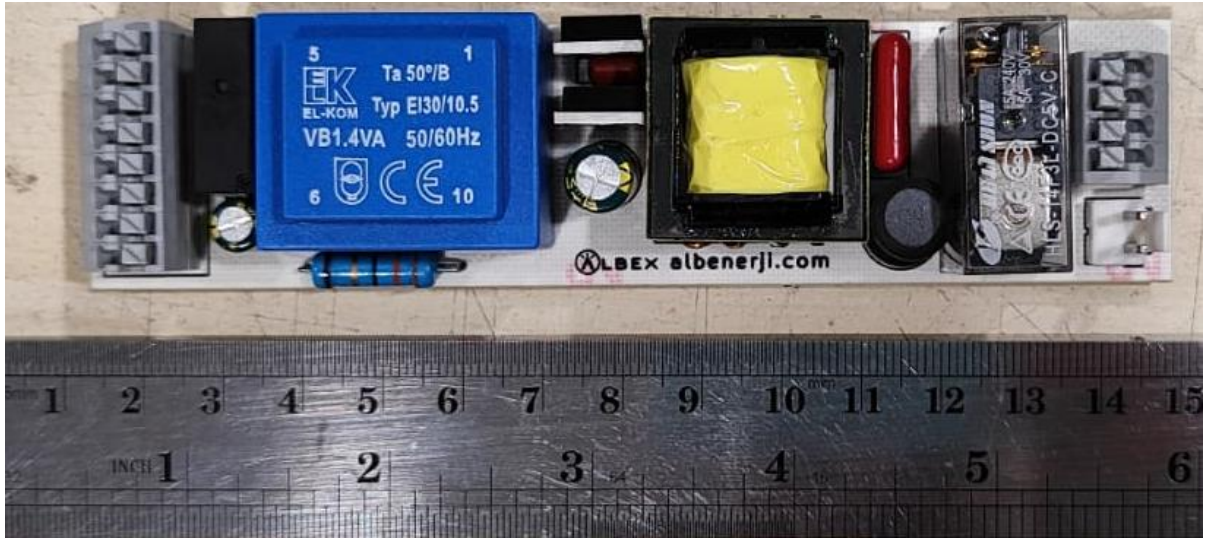


IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

Photo's of EUT:



IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict





UYGUNLUK SERTİFİKASI

CERTIFICATE OF COMPLIANCE

Sertifika No. : MD-25-186-UD001-R0
Certificate No.

Sertifika Sahibi Adı ve Adresi
Name and Address of Certificate Owner

: **ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti.**
Abdurrahmangazi, Sevenler Cd. Bina No 55 D:5, 34887 Sancaktepe
/İstanbul

Üretici Adı ve Adresi
Name and Address of Manufacturer

: **ALB Enerji Servis Aydınlatma ve Mühendislik Çözümleri Ltd. Şti.**
Abdurrahmangazi, Sevenler Cd. Bina No 55 D:5, 34887 Sancaktepe
/İstanbul

Ürün Adı
Product Name

: **Emergency Lighting Kit**
Acil Durum Aydınlatma Kiti

Ticari Marka
Trademark

: **ALBEX**

Ürün Tipi
Product Type

: **YFB-200, YFK-60, YFB-220, YFB-80, YFB-24SV, YFB-24, YFB-12SV, YFB-12**

Uygulanan Yönetmelik/ler
Applied Directive/s

: **2014/35/EU Low Voltage Directive**
2014/35/AB Alçak Gerilim Direktifi

2014/30/EU Electromagnetic Compatibility (EMC) Directive
2014/30/AB Elektromanyetik Uyumluluk Yönetmeliği

Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

2011/65/AB Elektrik ve Elektronik Eşyalarda (EEE) bazı tehlikeli maddelerin kısıtlanmasına ilişkin Direktifin Annex II kısmına eklenmiş 2015/863

Uygulanan Standart/lar
Applied Standard/s

: **EN 61347-2-13:2018, EN IEC 55015:2019/A11:2020, EN IEC 61547:2023, EN IEC 61000-3-2:2019/ AMD2:2024, EN IEC 61000-3-3:2014/AMD2:2021, IEC 62321-5:2013, CPSC-CH-E1001-08.3, IEC 62321-4:2017, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-6:2015, CPSC-CH-C1001-09.4**

Rapor No.
Report No.

: **AB-1532-T/LVD25-131 (LVD Deney Raporu / LVD Test Report)**
AB-1532-T/EMC25-206 (EMC Deney Raporu / EMC Test Report)
AB-2029-T/ 25100011 (RoHS Deney Raporu / RoHS Test Report)

INSPERLA yukarıda uygunluk değerlendirmesi için sunulan tipin 2014/35/AB Alçak Gerilim Yönetmeliği ve 2014/30/AB Elektromanyetik Uyumluluk Yönetmeliğine uygun olduğunu referans inceleme raporu ile onaylar. Bu uygunluk sertifikası imalatçının uygunluk beyanı düzenleme ve diğer ilgili yönetmeliklere uyma zorunluluğunu ortadan kaldırmaz. Bu uygunluk sertifikası imalatçının isteğine bağlı düzenlenmiştir.

İmalatçı; uygunluk sertifikası, AB uygunluk beyanı ve eklerini, teknik dokümantasyon ile birlikte, yasal otoriteler tarafından talep edildiğinde sunulmak üzere, ürünü pazara sunduktan itibaren on yıl boyunca saklamalıdır. İmalatçı; ilgili yönetmeliğin gerekliliklerine göre üretilmiş ve yönetmeliğin temel sağlık ve güvenlik gereklilikleri karşılayan yukarıda bahsi geçen tipin uygunluğunda olan her bir ürüne CE işaretini ilâştirebilir.

INSPERLA confirms type which is mentioned above according to the 2014/35/EU Low Voltage Directive and 2014/30/EU Electromagnetic Compatibility (EMC) Directive with inspection report. This certificate of compliance does not abrogate the compulsory of the manufacturer to issue declaration of conformity. Other relevant directives must be observed. This certificate was issued on voluntary basis of manufacturer.

The manufacturer shall keep copy of certificate of compliance, EU declaration of conformity, its annexes and additions together with technical documentation at the disposal of national authorities for ten years after the product has been placed on the market. The manufacturer shall affix the CE marking to each individual product that is in conformity with the type described in this certificate of compliance and satisfies the applicable requirements of related directive.

Sertifika Yayın Tarihi
Certificate Issue Date

: **01.12.2025**

Sertifika Geçerlilik Tarihi
Certificate Expiry Date

: **30.11.2026**

Genel Müdür
General Manager

