ELDAŞ
TEST VE KALİBRASYON ELEKTRİK SAN. TİC. A.Ş.

DENEY RAPORU
TEST REPORT

ELDAŞ
EMC20-0583
09-20

Müşteri Adı / Adresi: RONA AYDINLATMA İTHALAT İHRACAT SANAYİ TİCARET LİMİTED ŞİRKETİ
Client name/address : Hadımköy Mah.Ayasofya Cad.NO:110/1 HADIMKÖY ARNAVUTKÖY / İSTANBUL

İş Emri No: 200929-06
Work Order No:

Test Edilen Ürün: FLORA 700701, Harekete Duyarlı Sensörlü Tavan Armatürü
Items tested: FLORA 700701, Ceiling Luminaire With Motion Sensitive Sensör

Açıklamalar DGC'ye EN 60669-2-1:2004/A12:2010 standardı uyarınca Müşteriisteği ile kısmi testler uygulanmıştır. Detaylı Bilgi için 5. sayfaya bakınız.
Remarks: Partial tests were applied to EUT according to EN 60669-2-1:2004/A12:2010 standart upon customer request. Check Page 5 for further information.

Numune Kabul Tarihi: 29.09.2020
The date of receipt of test item:

Deney Tarihi : 30.09.2020
Date of test:

Yayımlandığı Tarih: 02.10.2020
Date of Publication:

Onay Tarihi : 02.10.2020
Date of Approval

Deney ve Kalibrasyon ELDAŞ MERKEZ

Mühür / *Seal*

Rapor Sorumlusu
Person in Charge of Report

Güleç Gökçe ALTINBAŞ

Laboratuvar Müdürü
Head of testing laboratory

Oktay TOSUN

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 rapor: Firmamıza ulaşan numunelere deney ve/veya deneyler uygulanarak elde edilmiştir. Müşteriye ait diğer numuneleri kapsamaz.
This report was prepared after applying test/tests to the samples that are sent to our company.
Note that this report does not involve other samples of the customer.

Bu rapor laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz sertifikalar geçersizdir.
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Testing reports without signature and seal are not valid.

Bu raporun geçerlilik tarihi 5 (beş) yıldır. *The validity of this report is 5 (five) years.*

SONUÇ / CONCLUSION

Bu bir EMC test rapordur.
Bu raporda verilen sonuçlar ve değerlendirmeler sadece üretici/başvuru sahibi tarafından test için sağlanan ürün/sistem ile ilgilidir. Üretilen diğer bütün modellerin bu raporda verilen gereksinimleri karşılaması üreticinin/başvuru sahibinin sorumluluğundadır.

This is a EMC test report. The test results presented in this report relate only to the object/system tested. The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer/applicant to ensure that all production models meet the intent of the requirements detailed within this report.

DOKÜMAN TARİHÇESİ / REVISION HISTORY

Baskı / Edition	Tarih / Date	Açıklama / Remarks
İlk yayın / First edition	02.10.2020	–

Deney ve Kalibrasyon ELDAŞ MERKEZİ

İÇİNDEKİLER
(Contents)

Deney ve Kalibrasyon ELDAŞ MERKEZİ

DENEYDEN GEÇİRİLEN CİHAZIN :
(Equipment Under Test's)

Markası: (Brand)	**Rona**	**Beyan Gerilimi:** (Rated Voltage)	**220/240 V AC**
Modeli: (Model)	**FLORA 700701**	**Beyan Akımı:** (Rated Current)	**0,4 A**
Seri No: (Serial Number)	**21001**		
Kısa Tanımı: Short Description:	**-** -		

• Testler, Rona marka FLORA 700701 model ürüne 50 Hz 230V AC şebeke gerilimi ile beslenerek yapılmıştır. Testler sırasında yük olarak 2 adet lamba kullanılmıştır. DGC sürekli yanacak şekilde konumlandırılmıştır.

• Tests were applied to Rona brand FLORA 700701 model products by supplying with 50 Hz 230V AC voltage. During the tests, 2 pieces lamps were used as a load. The EUT was positioned to light continuously.

ÇEVRE ŞARTLARI
(Environmental Conditions)

Deneyler sırasında ölçülen çevre şartları ilgili sayfalarda belirtilmiştir.
(The enviromental 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.)

Deney ve Kalibrasyon ELDAŞ MERKEZİ

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

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

- **TS EN 55015:2019/A11:2020**
- **EN 55015:2019/A11:2020**
- **TS IEC 60669-2-1/A1:2008/A2:2015**
- **EN 60669-2-1:2004/A12:2010**

EMC Deneyleri EMC Tests	**Deney Standardları** Test Standards **(TS / EN / IEC)**
1 - Bağlantı Ucu Bozulma Gerilimi (Conducted Emission)	**55015**
2 - Gerilim Dalgalanmaları ve Kırpışma (Voltage Variations and Flicker)	**61000-3-3**
3 - Harmonikler (Harmonics)	**61000-3-2**

1.3 - DENEY SONUÇLARI
(Tests Results)

Uygulanan Testler Applied Tests	**Uygulama Yeri** (Appliance Location)	**Sonuç** Result	**Deneyi Yapan** By tested
2.1 - Bağlantı Ucu Bozulma Gerilimi (Conducted Emission)	**Güç Portu** (Power Port)	**Geçti** (Passed)	**Recep ULUĞ**
2.2 - Gerilim Dalgalanmaları ve Kırpışma (Voltage Variations and Flicker)	**Güç Portu** (Power Port)	**Geçti** (Passed)	
2.3 - Harmonikler (Harmonics)	**Güç Portu** (Power Port)	**Geçti** (Passed)	

Deney ve Kalibrasyon ELDAS MERKEZİ

2.1 - BAĞLANTI UCU BOZULMA GERİLİMİ
Conducted Emission

Deney Talimat No: (Test Method No)	DT-EMC-06	**İlgili standard:** (Related Standard)	EN 55015:2019/A11:2020 TS EN 55015:2019/A11:2020
Çevre Koşulları: (Environmental Conditions)	23,4 °C , % 40,7 RH	**Tarih:** (Date)	30.09.2020

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: **DGC, ekranlı odada LISN cihazının L, 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, 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.)

Deney ve Kalibrasyon ELDAŞ MERKEZİ

2.2 - GERİLİM DALGALANMALARI VE KIRPIŞMA
Voltage Variations and Flicker

Deney Talimat No: (Test Method No)	DT-EMC-07	**İlgili standard:** (Related Standard)	TS EN 61000-3-3:2014/A1:2019 EN 61000-3-3:2013/A1:2019
Çevre Koşulları: (Environmental Conditions)	23,4 °C , % 40,7 RH	**Tarih:** (Date)	30.09.2020

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: **DGC'nin besleme kablosu, harmonik cihazına bağlandı. Cihazın şebekeye vermiş olduğu gerilim dalganması ve kırpışma değeri ölçüldü.**
(Test specification: (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: ■ Geçti
(Test Result) (Passed)

Not:Test sonuçları için lütfen EK C(C3-C4)'ye bakınız.
(Please see the attachment C(C3-C4) for the test results.)

Deney ve Kalibrasyon ELDAŞ MERKEZİ

2.3 - HARMONİKLER
Harmonics

Deney Talimat No: (Test Method No)	DT-EMC-08	**İlgili standard:** (Related Standard)	TS EN 61000-3-2:2019 EN 61000-3-2:2019
Çevre Koşulları: (Environmental Conditions)	23,4 °C , % 40,7 RH	**Tarih:** (Date)	30.09.2020

TEST ŞARTLARI VE SONUÇLARI
(TEST CONDITIONS AND RESULTS)

Testin tanımı: **DGC'nin besleme kablosu, Harmonik cihazına bağlandı. Cihazın şebekeye vermiş olduğu harmonikler ölçüldü.**
(Test specification: (The power supply of the EUT is connected to Harmonics device. The harmonics that the device gave to the grid were measured.)

Değerlendirme Kategorisi: ■ Class C
(Assessment Category)

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

Not:Test sonuçları için lütfen EK C(C5-C8)'ye bakınız.
(Please see the attachment C(C5-C8) for the test results.)

Deney ve Kalibrasyon ELDAŞ MERKEZİ

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)
ESR7 EMI TEST RECEIVER 7GHZ	Rohde&Schwarz	ESR7	101817	06/2021
RF Zayıflatıcı	BIRD ELEKTRONIC	8341-200	2382	01/2021
LISN	Rohde&Schwarz	ENV432	101489	07/2021
Harmonics 1000	EMC PARTNER	HAR1000-1P	HAR1000-1P 230V-0232	07/2021

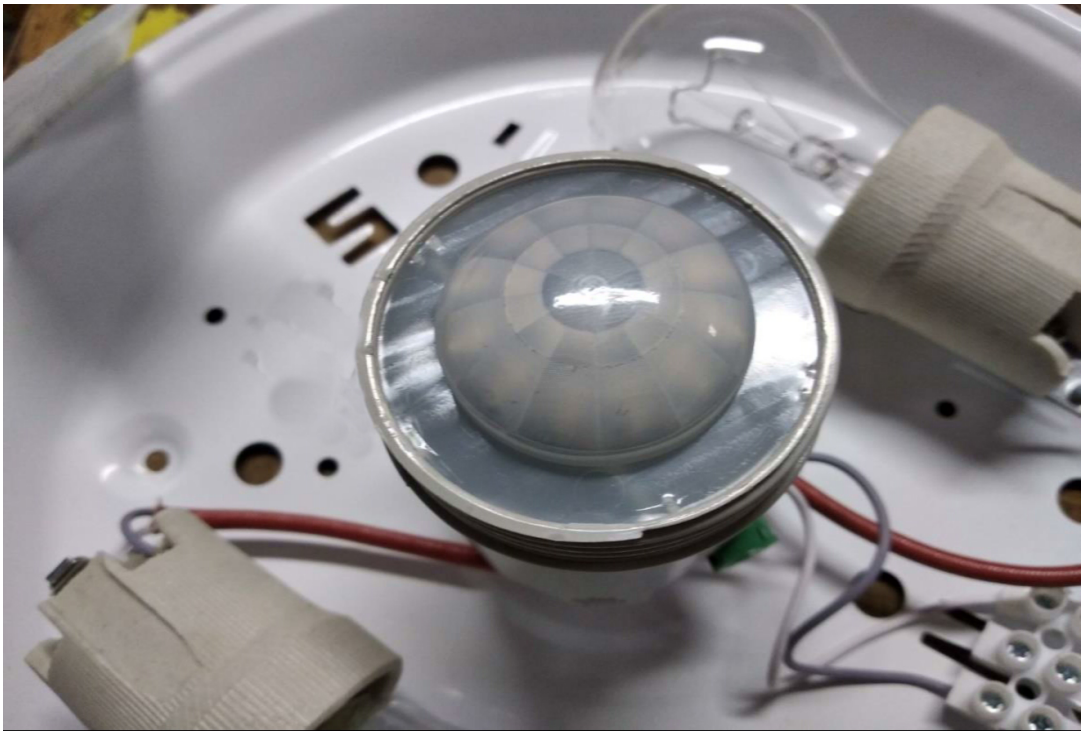
Deney ve Kalibrasyon ELDAŞ MERKEZİ

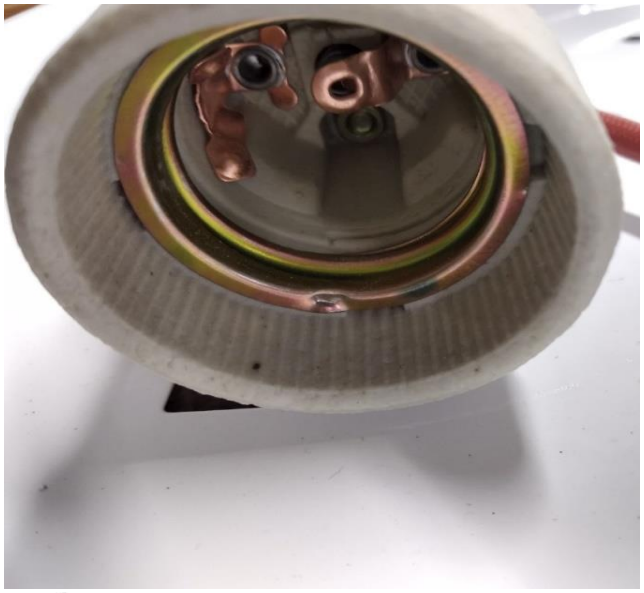
3.2 - Deney Kurulumunun ve DGC'nin Fotoğrafları
(Photos of the Test Set-up and EUT)
DGC
(EUT)

Deney ve Kalibrasyon ELDAŞ MERKEZİ

EK B1 (Attachment B1)

DGC
(EUT)



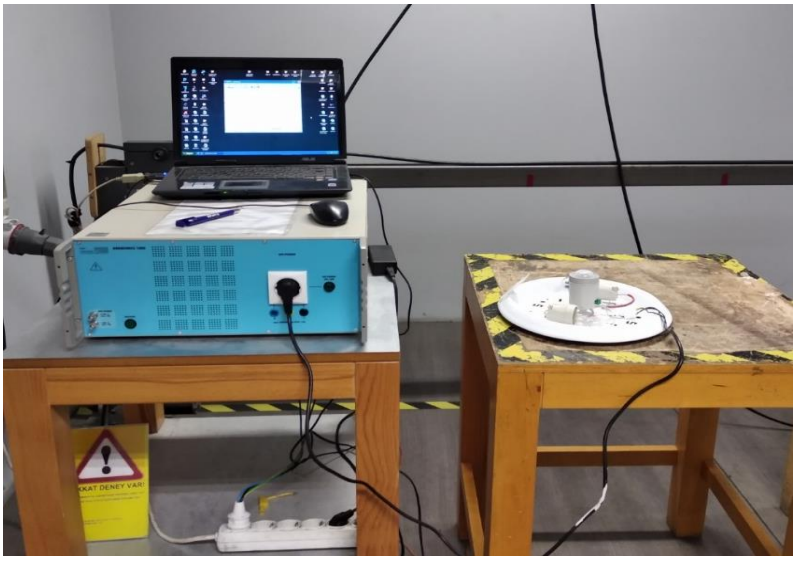


Deney ve Kalibrasyon ELDAŞ MERKEZİ

EK B2 (Attachment B2)

CONDUCTED EMISSION

HARMONIC - FLICKER EMISSION



Deney ve Kalibrasyon ELDAŞ MERKEZİ

EK B3 (Attachment B3)

Receiver

RBW (QPK) 9 kHz **MT** 100 ms RF ZAYIFLATICI+ENV432.TDF

Input 1 DC **Att** 10 dB **Preamp** OFF **Step** TD Scan

Level dBµV Frequency **30.0000000 MHz**

Max Peak **25.55** -20 0 20 40 60 80 100

Scan 1QP Max 2Av Max

Limit Check PASS

Line EN 55015 VOLTAGE MAINS QP PASS

Line EN 55015 VOLTAGE MAINS AV PASS

100 kHz 1 MHz 10 MHz

120 dBµV

110 dBµV

EN 55015 VOLTAGE MAINS QP

100 dBµV

90 dBµV

80 dBµV

70 dBµV

60 dBµV

EN 55015 VOLTAGE MAINS AV

50 dBµV

40 dBµV

30 dBµV

20 dBµV

10 dBµV

TF

Start 9.0 kHz Stop 30.0 MHz

Deney ve Kalibrasyon ELDAŞ MERKEZİ

Measuring... 30.09.2020 14:09:43

FLORA 700701 LINE

Date: 30.SEP.2020 14:09:44

Receiver

RBW (QPK) 9 kHz **MT** 100 ms RF ZAYIFLATICI+ENV432.TDF

Input 1 DC **Att** 10 dB **Preamp** OFF **Step** TD Scan

Level dBµV Frequency **30.0000000 MHz**

Max Peak **25.41** -20 0 20 40 60 80 100

Scan 1QP Max 2Av Max

Limit Check PASS

Line EN 55015 VOLTAGE MAINS QP PASS

Line EN 55015 VOLTAGE MAINS AV PASS

100 kHz 1 MHz 10 MHz

120 dBµV

110 dBµV

EN 55015 VOLTAGE MAINS QP

100 dBµV

90 dBµV

80 dBµV

70 dBµV

60 dBµV

EN 55015 VOLTAGE MAINS AV

50 dBµV

40 dBµV

30 dBµV

20 dBµV

10 dBµV

TF

Start 9.0 kHz Stop 30.0 MHz

Deney ve Kalibrasyon ELDAŞ MERKEZİ

Measuring... 30.09.2020 14:09:18

FLORA 700701 NOTR

Date: 30.SEP.2020 14:09:19

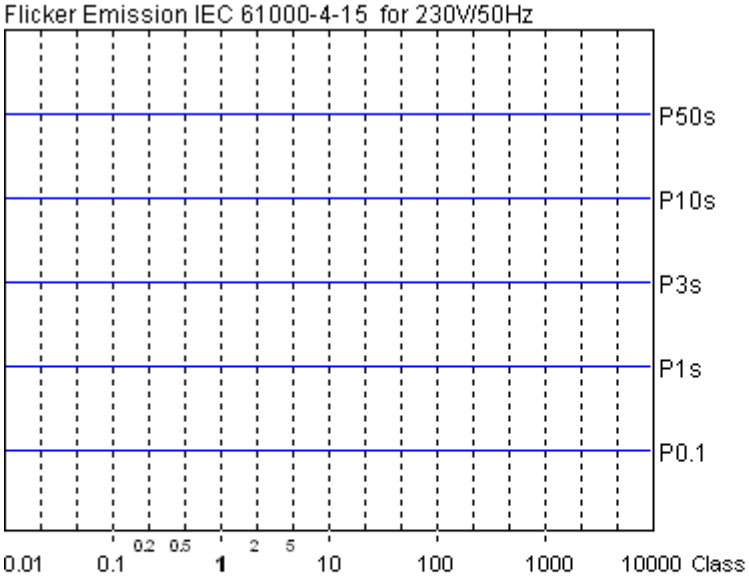
Flicker Emission - IEC 61000-3-3 , EN 61000-3-3

RONA

Operator
Unit
Serial Number

RECEP ULUG
FLORA 700701

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):	0.65
Maximum Relative Volt. Change (dmax):	**0.00%**
Limit (dmax):	4.00%
Relative Steady-state Voltage Change (dc):	**0.00%**
Limit (dc):	3.30%
Tmax 3.30% (dt):	**0.00ms**
Limit (dt>Lim):	500ms

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

30.09.2020 12:12:15

Urms =	230.1	V	P =	145.9	W
Irms =	0.635	A	pf =	0.999	

Range:	1 A
V-nom:	230 V
TestTime:	10 min (100%)

FLORA 700701

Test completed, Result: PASSED

HAR-1000 EMC-Partner

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

Measurement

RONA

Date : 30.09.2020 12:12:15 V5.0

File :

Operator
Unit
Serial Number

RECEP ULUG
FLORA 700701

Deney ve Kalibrasyon ELDAŞ MERKEZİ

```
Urms =  230.1V  Freq =  49.974  Range:  1 A
Irms =  0.635A  Ipk  =  0.904A  cf   =  1.424
P    =  145.9W  S    =  146.1VA pf   =  0.999

Test - Time :   1 x 10min = 10min       ( 100 %)

LIN (Line Impedance Network) :   L: 0.24ohm +j0.15ohm N: 0.16ohm +j0.10ohm

Limits :        Plt  :  0.65    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

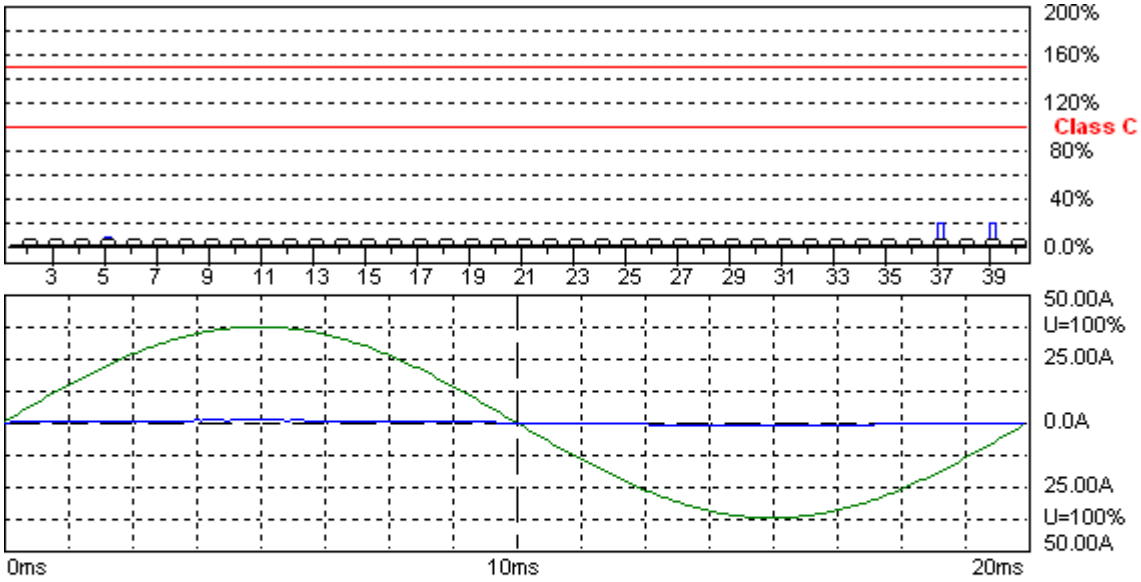
```
Urms     ***    Actual total Voltage in Volt RMS
Irms     ***    Actual total Current in Ampere RMS
Ipk      ***    Actual Peak value of the Current in Ampere
cf       ***    Actual Crest Factor (Ipk/Irms)
P        ***    Actual Active Power in Watt
S        ***    Actual Apparent Power in VA (Urms*Irms)
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.
```

Deney ve Kalibrasyon ELDAŞ MERKEZİ

Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2)

RONA

Operator RECEP ULUG
Unit FLORA 700701
Serial Number



Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2) 30.09.2020 14:09:26

Urms =	230.3	V	P =	148.5	W	THC =	0.003	A	Range: 50 A
Irms =	0.659	A	pf =	0.978		H1max =	0.644	A	V-nom: 230 V
									TestTime: 5 min (100%)

FLORA 700701 **Test completed, Result: PASSED**

HAR-1000 EMC-Partner

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

Measurement


```
RONA                                    Date : 30.09.2020 14:09:26 V5.0

File :

Operator                    RECEP ULUG
Unit                        FLORA 700701
```

Urms = 230.3V Freq = 49.987 Range: 50 A
Irms = 0.659A Ipk = 1.050A cf = 1.593
P = 148.5W S = 151.8VA pf = 0.978
THDi = 2.30 % THDu = 0.10 % Class C

Test - Time : 5min (100 %)

Limit Reference: H1(max)= 0.6439A pf(max)= 1.003

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Irms [A]	Imax [A]	Limit [A]	Status
1	50	0.6439	0.6439	0.6439		
2	100	0.0000	0.0000	0.0000	0.0129	
3	150	0.0000	0.0031	0.0031	0.1938	
4	200	0.0000	0.0000	0.0000		
5	250	0.0000	0.0000	0.0031	0.0644	
6	300	0.0000	0.0000	0.0000		
7	350	0.0000	0.0000	0.0000	0.0451	
8	400	0.0000	0.0000	0.0000		
9	450	0.0000	0.0000	0.0000	0.0322	
10	500	0.0000	0.0000	0.0000		
11	550	0.0000	0.0000	0.0000	0.0193	
12	600	0.0000	0.0000	0.0000		
13	650	0.0000	0.0000	0.0000	0.0193	
14	700	0.0000	0.0000	0.0000		
15	750	0.0000	0.0000	0.0000	0.0193	
16	800	0.0000	0.0000	0.0000		
17	850	0.0000	0.0000	0.0000	0.0193	
18	900	0.0000	0.0000	0.0000		
19	950	0.0000	0.0000	0.0000	0.0193	
20	1000	0.0000	0.0000	0.0000		
21	1050	0.0000	0.0000	0.0000	0.0193	
22	1100	0.0000	0.0000	0.0000		
23	1150	0.0000	0.0000	0.0000	0.0193	
24	1200	0.0000	0.0000	0.0000		
25	1250	0.0000	0.0000	0.0000	0.0193	
26	1300	0.0000	0.0000	0.0000		
27	1350	0.0000	0.0000	0.0000	0.0193	
28	1400	0.0000	0.0000	0.0000		
29	1450	0.0000	0.0000	0.0000	0.0193	
30	1500	0.0000	0.0000	0.0000		
31	1550	0.0000	0.0000	0.0000	0.0193	
32	1600	0.0000	0.0000	0.0000		
33	1650	0.0000	0.0000	0.0000	0.0193	
34	1700	0.0000	0.0000	0.0000		
35	1750	0.0000	0.0000	0.0000	0.0193	
36	1800	0.0000	0.0000	0.0000		
37	1850	0.0000	0.0000	0.0031	0.0193	
38	1900	0.0000	0.0000	0.0031		
39	1950	0.0000	0.0000	0.0031	0.0193	
40	2000	0.0000	0.0000	0.0031		

Calculation of Individual Harmonic Limits

For **Class C** the Limits are related to H1max which is the
Maximum Current of the Fundamental during the test time.

H1max = 0.644 A (measured over test time)

The 3rd Individual Harmonic Limit is also related to pfmax which is the
Maximum Power Factor of the EUT during the test time.

pfmax = 1.003 (measured over test time)

For the H1max calculation the Fundamental Current (H1) is taken over

every 200ms and smoothed with an 1,5second filter.

Order		Limits in Ampere 100%	150%	Calculation	Remarks
2		0.0122	0.0183	= 2% of H1 (0.644A)	
3		0.1923	0.2884	=(30x pf(1.0))% of H1 (0.644A)	
4					no Limit defined
5		0.0641	0.0961	=10% of H1 (0.644A)	
6					no Limit defined
7		0.0458	0.0687	= 7% of H1 (0.644A)	
8					no Limit defined
9		0.0336	0.0504	= 5% of H1 (0.644A)	
10					no Limit defined
11		0.0183	0.0275	= 3% of H1 (0.644A)	
12					no Limit defined
13		0.0183	0.0275	= 3% of H1 (0.644A)	
14					no Limit defined
15		0.0183	0.0275	= 3% of H1 (0.644A)	
16					no Limit defined
17		0.0183	0.0275	= 3% of H1 (0.644A)	
18					no Limit defined
19		0.0183	0.0275	= 3% of H1 (0.644A)	
20					no Limit defined
21	*	0.0183	0.0275	= 3% of H1 (0.644A)	
22					no Limit defined
23	*	0.0183	0.0275	= 3% of H1 (0.644A)	
24					no Limit defined
25	*	0.0183	0.0275	= 3% of H1 (0.644A)	
26					no Limit defined
27	*	0.0183	0.0275	= 3% of H1 (0.644A)	
28					no Limit defined
29	*	0.0183	0.0275	= 3% of H1 (0.644A)	
30					no Limit defined
31	*	0.0183	0.0275	= 3% of H1 (0.644A)	
32					no Limit defined
33	*	0.0183	0.0275	= 3% of H1 (0.644A)	
34					no Limit defined
35	*	0.0183	0.0275	= 3% of H1 (0.644A)	
36					no Limit defined
37	*	0.0183	0.0275	= 3% of H1 (0.644A)	
38					no Limit defined
39	*	0.0183	0.0275	= 3% of H1 (0.644A)	
40					no Limit defined

EUT is PASSED if:
- all Average values of the Individual Harmonic Currents (Iavg)
  are below 100% of the Individual Limits.
- all Maximum values of the Individual Harmonic Currents (Imax)
  are below 150% of the Individual Limits.

Exceptions:
- Average values of some Individual Harmonic Currents (marked with "*")
  may be up to 150% if the Partial Harmonic Current (PHC)
  is lower than the PHC which is calculated from the Limit Currents:
  Actual PHC = 0.0000A
  PHC calculated from Limit values = 0.0579A

- Individual Harmonic Currents less than 5mA or less than 0.6% of Irms
  (which is 0.006*0.659 = 0.004A) are disregaded.

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
S	***	Actual Apparent Power in VA (Urms*Irms)
pf	***	Actual Power Factor (P/S)
THDi	***	Actual Total Harmonic Current Distortion in %
THDu	***	Actual Total Harmonic Voltage Distortion in %
THC	***	Actual Total Harmonic Current in Ampere
PHC	***	Actual Partial Harmonic Current in Ampere

Individual measurements for 2nd to 40th order:

Iavg		Average value of the Individual Harmonic Current in Ampere RMS
Irms	***	Actual Individual Harmonic Current in Ampere RMS
Imax		Maximum Individual Harmonic Current in Ampere RMS
Limit Irms		Individual Limit (100%) for the selected Class in Ampere RMS

General :
- Maximum and Average values are calculatet over the full test-time
- The values marked with "***" are actual values which could vary during test-time and are taken at the time of protocol printout.
- The individual measurements are taken over every 200ms and smoothed with an 1,5second filter.

Deney ve Kalibrasyon ELDAŞ MERKEZİ

Adet	Değer	Kılıf	Marka	Teknik özellik
2	330k	1206	Samsung	1/4W smd direnç
3	10K	805	Samsung	1/8W smd direnç
4	100k	805	Samsung	1/8W smd direnç
1	15k	805	Samsung	1/8W smd direnç
1	390k	805	Samsung	1/8W smd direnç
2	150k	805	Samsung	1/8W smd direnç
3	20k	805	Samsung	1/8W smd direnç
2	1M5	805	Samsung	1/8W smd direnç
3	47k	805	Samsung	1/8W smd direnç
3	100nF	805	Samsung	X7R MLCC
2	33nF	805	Samsung	X7R MLCC
2	10uF	805	Samsung	X7R MLCC
1	78L05	SOT89	ST	78 seri 100mA regülatör
1	LM324	SO14	ST	Quad OpAmp
2	BC846BM	Sot 23	Vishay	500ma transistör
2	ZY24	Minimelf	Vishay	1/2W Zener
2	M7	Sma	LGE	1000V 1A diyot
4	LL4148	Minimelf	Vishay	100V 500mA Diyot
1	100R 2W	Dip	LGE	2W carbon film direnç
1	330n 305V	X2 15mm	Pilkor	X2 MKP kapasitör
1	100uF 35V	5mm	Chang	5000Saat kapasitör
1	100uF 16V	5mm	Chang	5000Saat kapasitör
3	47uF 16V	5mm	Chang	5000Saat kapasitör
1	PIR	To92	Senba	Pır Sensör
1	GL5537-1	5mm	Senba	10K Işık sensörü
1	YLE-303H	4 pin Square	YLE	10A röle
4	kablo	10 cm	Hanoğlu kablo	0,60 bakır kablo
1	BS41YP-R2	FR4	King Board	UL94 FR4 pcb