



21/04/2015

Sayı/Issue: 14 04 15 SÖ 065/00

İlgi/Subject:

Interest on request, samples were sent to our laboratory for lighting fixtures, physical examination and tests. The following results were obtained.

**Rapor Tarihi-Report Date / Rapor Numarası-Report Number/ Ticari Marka-TradeMark/Model-Type**

21.04.2015 / 15-073 / LUXAR-ODSEL / EP06-066-40F (590mm EP Serisi T8 Led Tüp)

Numbers in above-mentioned report, the date of the inspection and test reports of the samples will be sent to our letter attached.

Best Regards,

Prof.Dr. Zafer UTLU

Laboratory Manager

EK/EKLER:

(ANNEX/ANNEXES)

Not: Muayene ve Deney amacı ile gönderilen numuneler, firma veya yetkilisi tarafından 30 gün içerisinde alınmadığı takdirde tasfiye edilecektir.

The samples are sent in order to inspection and test, will be liquidated if it will taken back within 30 days by representative of company.

İAÜ Florya Halit Aydın Kampüsü İnönü Cad. No:38 Beşyol mah. Küçükçekmece / İSTANBUL  
Tel:(0212) 444 1 428 Dahili : 14630



## MUAYENE VE DENEY RAPORU

### TEST REPORT

|            |
|------------|
| IAU        |
| 15-073     |
| 20.04.2015 |

**Deneyi Talep Eden** : ODESEL ELEKTRONİK SAN. ve TİC. A.Ş.  
(Adı,Adresi,Şehir v.b.) Muradiye Orta Ölçekli Sanayi Bölgesi 16. Sokak No:4 Muradiye / MANİSA  
Customer (Name,Address, City etc.)

**Deney Talep Tarihi /No** : 10.04.2015  
Order Date /No

**Numunenin Kabul Tarihi** : 14.04.2015  
Test Item Receipt Date

**Deneylerin Yapıldığı Tarih** : 14.04-21.04.2015  
Date of Test

**Uygulanan Standart /Metod** : TS EN13032-1:2004 +A1:2012LightandLighting –Measurement and Presentation of  
Applied Standart/Method Photometric Data of Lampsand Luminaires-Part1: Measurementand File

**Raporun Sayfa Sayısı** : 14  
Number of Pages of the report

**Açıklamalar** :

Deney ve/veya ölçüm sonuçları,genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu raporun tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

**Mühür**  
Seal

**Tarih**  
Date

**Deney Sorumlusu**  
Person in charge of tests  
Sercan ÖZKAN  
Lab. Tech.

**Kontrol Eden**  
Reviewer  
Temel SÖNMEZOCAK  
Quality Manager

**Onaylayan**  
Approved By  
Prof.Dr. Zafer UTLU  
Lab. Manager

Bu rapor , hazırlayan laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir. Bu rapor , sadece deneyiyapılan numune için geçerlidir ve "Ürün Belgesi" yerine geçmez.

This test report shall not be reproduced other than in full except with the written permission of the laboratory .Test reports without signature and seal are not valid. This report represents only tested samples,and shall not be used as product Certificate.

**İSTANBUL AYDIN ÜNİVERSİTESİ AYDINLATMA TEST-ÖLÇÜM ve ANALİZ LABORATUARLARI**

( ISTANBUL AYDIN UNIVERSITY LIGHTING TEST MEASUREMENT AND ANALYSIS LABORATORIES)

**MUAYENE – DENEY SONUÇLARI / TEST RESULTS****FOTOMETRİK ÖLÇÜM SONUÇLARI****PHOTOMETRIC MEASUREMNT RESULTS**

|  |   |       |
|--|---|-------|
| <b>Kullanılan Cihaz/EquipmentUsed.....:</b>                                | NFMS Goniophotometer<br>LabSphere Sphere System |       |
| <b>Uygulanan Standart-Metot/Applied Standard-Method.....:</b>              | TS EN13032-1 ; IES-LM-79                        |       |
| <b>Deney Ortam Şartları/ExperimentalAmbientConditions.....:</b>            | 25°C ±3°C, 35%RH±5%RH                           |       |
| <b>Armatüre Uygulanan Gerilim / AppliedVoltage.....:</b>                   | 220V  |       |
| <b>Armatür Markası-Üretici /LuminaireBrand-Producer.....:</b>              | ODSEL ELEKTRONİK                                |       |
| <b>Armatür Kodu-Modeli / LuminaireCode-Model.....:</b>                     | EP06-066-40F /590mm EP Serisi T8 Led Tüp        |       |
| <b>Armatür Lamba Tipi-açıklama/Lamptype-description of Luminaire.....:</b> | LED   |       |
| <b>Armatür Boyutları / Dimensions of LuminaireArea.....:</b>               | Uzunluk –Çap / Lenght-dia                       | 590mm |
|  | Genişlik/width                                  | 25mm  |
|  | Yükseklik / Height                              | 40mm  |
| <b>Işıyan Alan Boyutu / Dimensions of LuminousArea.....:</b>               | Uzunluk –Çap / Lenght-dia                       | 590mm |
|  | Genişlik/width                                  | 25mm  |
|  | C0 Yükseklik / Height                           | --    |
|  | C90Yükseklik / Height                           | --    |
|  | C180 Yükseklik / Height                         | --    |
|  | C270 Yükseklik / Height                         | --    |

**İSTANBUL AYDIN ÜNİVERSİTESİ AYDINLATMA TEST-ÖLÇÜM ve ANALİZ LABORATUARLARI**

( İSTANBUL AYDIN UNIVERSITY LIGHTING TEST MEASUREMENT AND ANALYSIS LABORATORIES)

**MUAYENE – DENEY SONUÇLARI / TEST RESULTS****FOTOMETRİK ÖLÇÜM SONUÇLARI / PHOTOMETRIC MEASUREMENT RESULTS**

|   |                |
|---|----------------|
| Armatürde Ölçülen Toplam Güç/Measured Total Power of Luminaire.....:  | 9W 0,89pf      |
| Armatürün Ölçülen Işık Akısı /MeasuredLuminousFlux of Luminaire.....: | 1023 lm        |
| Lamba Katalog Işık Akısı / LampCatalogLuminousFlux.....:              | --             |
| Armatür verimliliği (lm/Watt) / Luminousefficacy.....:                | 113,66 lm/Watt |
| Armatür Geri Verim (LOR)% / Luminousefficacy %.....:                  | --             |

**FOTOMETRİK ÖLÇÜM BELİRSİZLİK TABLOSU / PHOTOMETRIC MEASUREMENT UNCERTAINTY BUDGET**

| Deney/Test(Unit)                               | Ölçüm Belirsizliği/Uncertainty |
|--|--------------------------------|
| Radiant Flux (Watt)                            | 1,3%                           |
| Luminous flux (Lumen / Lm)                     | 1,08%                          |
| Correlated Color Temperature [CCT – Kelvin(K)] | 7K                             |
| Chromaticity x coord                           | 0,02                           |
| Chromaticity y coord                           | 0,02                           |
| Chromaticity u' coord                          | 0,02                           |
| Chromaticity v' coord                          | 0,02                           |
| Color Rendering Index                          | 1,4                            |

İSTANBUL AYDIN ÜNİVERSİTESİ AYDINLATMA TEST-ÖLÇÜM ve ANALİZ LABORATUARLARI

( ISTANBUL AYDIN UNIVERSITY LIGHTING TEST MEASUREMENT AND ANALYSIS LABORATORIES)

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

Numunenin fotoğrafları / Photos of the Test Sample

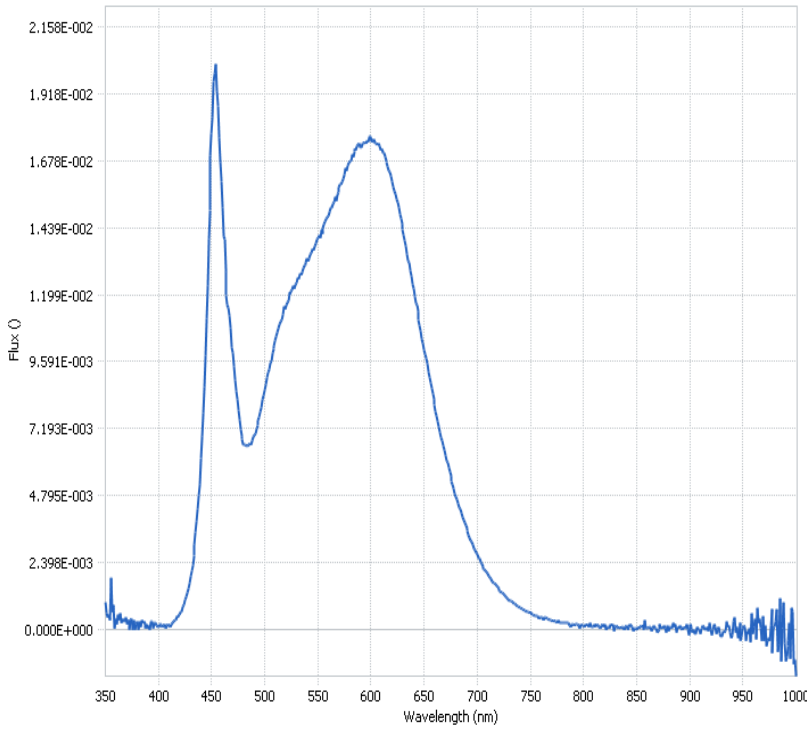


**MUAYENE – DENEY SONUÇLARI / TEST RESULTS****Fotometrik Ölçümler / Photometric measurements**

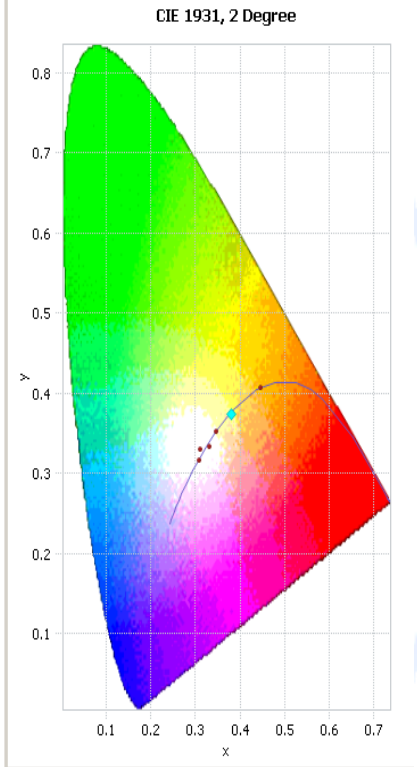
|                                       |                  |
|---------------------------------------|------------------|
| Parameter                             | Scan 1           |
| Date/Time                             | 15.04.2015 15:18 |
| Radiant Flux (Watts)                  | 3,208            |
| Luminous Flux (lumens)                | 1023             |
| Scotopic Luminous Flux (lm')          | 1780             |
| Chromaticity x coord                  | 0,3808           |
| Chromaticity y coord                  | 0,3747           |
| Chromaticity u coord                  | 0,2261           |
| Chromaticity v coord                  | 0,3338           |
| Delta uv                              | 0,0011           |
| Chromaticity u' coord                 | 0,2261           |
| Chromaticity v' coord                 | 0,5007           |
| Peak Wavelength (nm)                  | 453,5            |
| Center Wavelength (nm)                | 456,7            |
| Centroid Wavelength (nm)              | 564              |
| Dominant Wavelength (nm)              | 579,8            |
| Full Width Half Max Bandwidth (nm)    | 25,1             |
| Excitation Purity (%)                 | 26,7             |
| Correlated Color Temperature (deg. K) | 3973             |
| Luminous Efficacy (lm/W)              | 113,66           |
| SDCM                                  | 50.5 F 6500      |
| Correlation                           | 0,0054           |
| Correlation Coefficient               | 0,001072066      |
| Color Rendering Index Average (RA)    | 86,4366774       |
| Color Rendering Index (R1)            | 85,9             |
| Color Rendering Index (R2)            | 93,5             |
| Color Rendering Index (R3)            | 96,4             |
| Color Rendering Index (R4)            | 84,1             |
| Color Rendering Index (R5)            | 85,4             |
| Color Rendering Index (R6)            | 89,7             |
| Color Rendering Index (R7)            | 86,9             |
| Color Rendering Index (R8)            | 69,7             |
| Color Rendering Index (R9)            | 25,6             |
| Color Rendering Index (R10)           | 83,4             |
| Color Rendering Index (R11)           | 83,3             |
| Color Rendering Index (R12)           | 65,8             |
| Color Rendering Index (R13)           | 88,3             |
| Color Rendering Index (R14)           | 98,6             |

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

▼ SPECTRAL FLUX GRAPH:



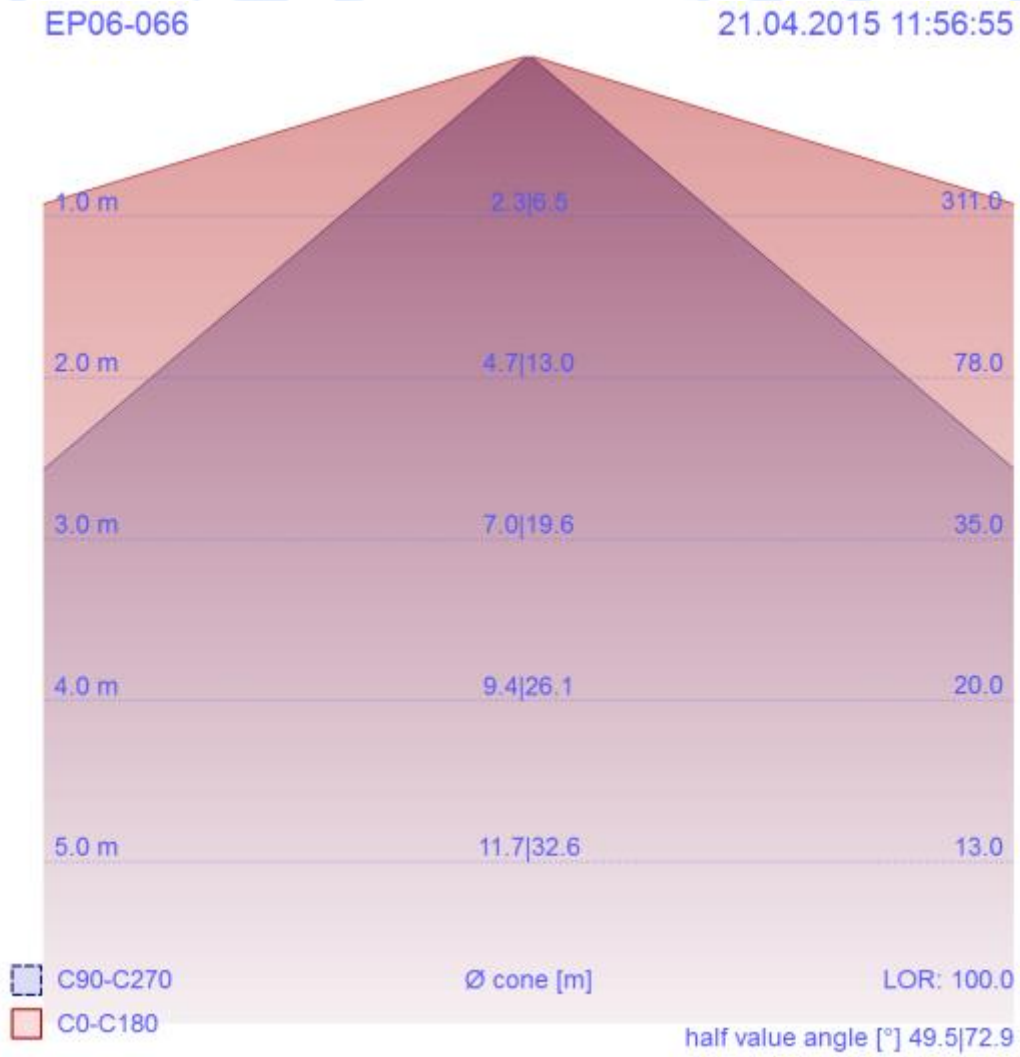
▼ CHROMATICITY DIAGRAM:



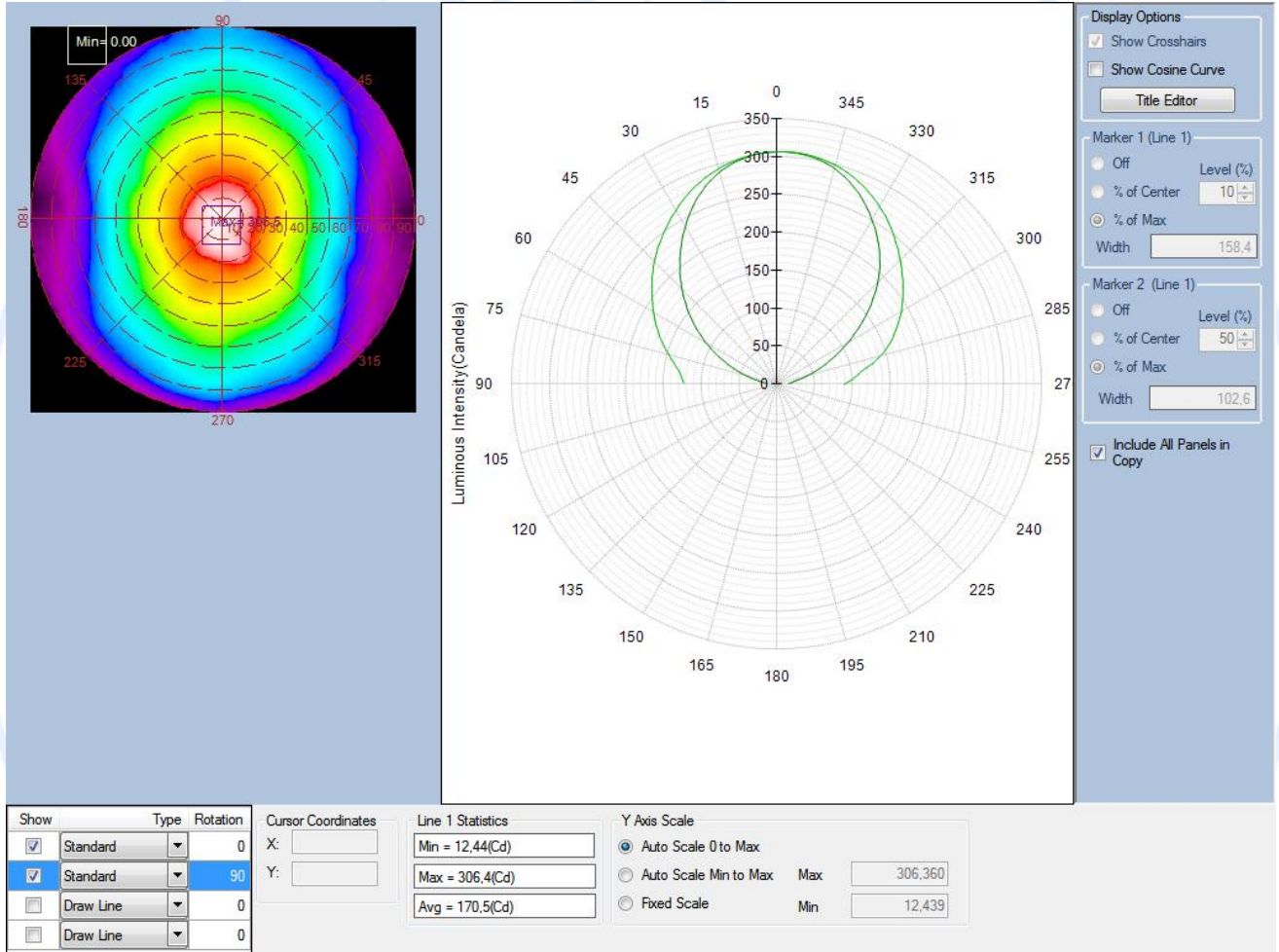
MUAYENE – DENEY SONUÇLARI / TEST RESULTS

FOTOMETRİK ÖLÇÜM SONUÇLARI / PHOTOMETRIC MEASUREMENT RESULTS

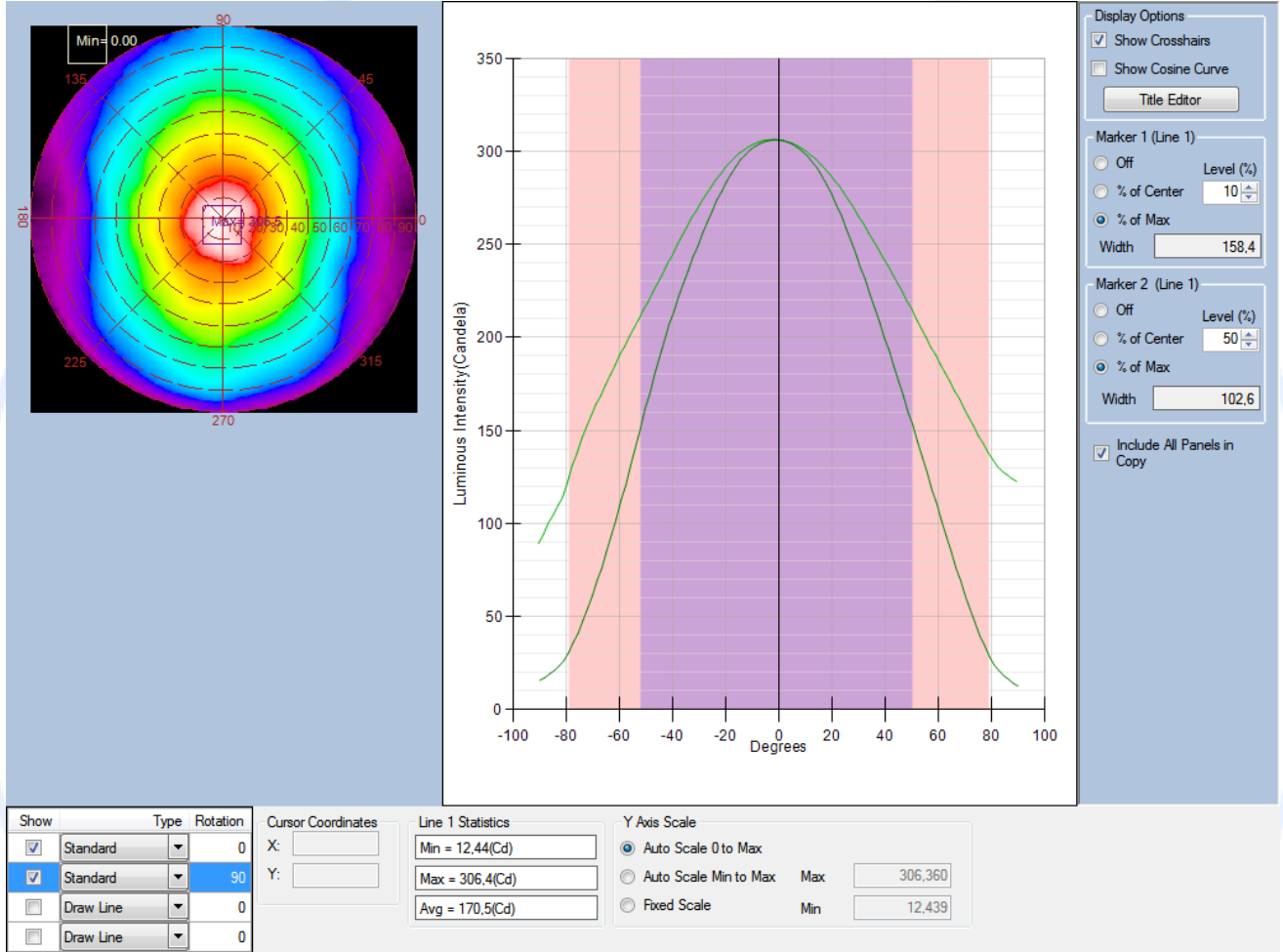
Cone Diagram ;



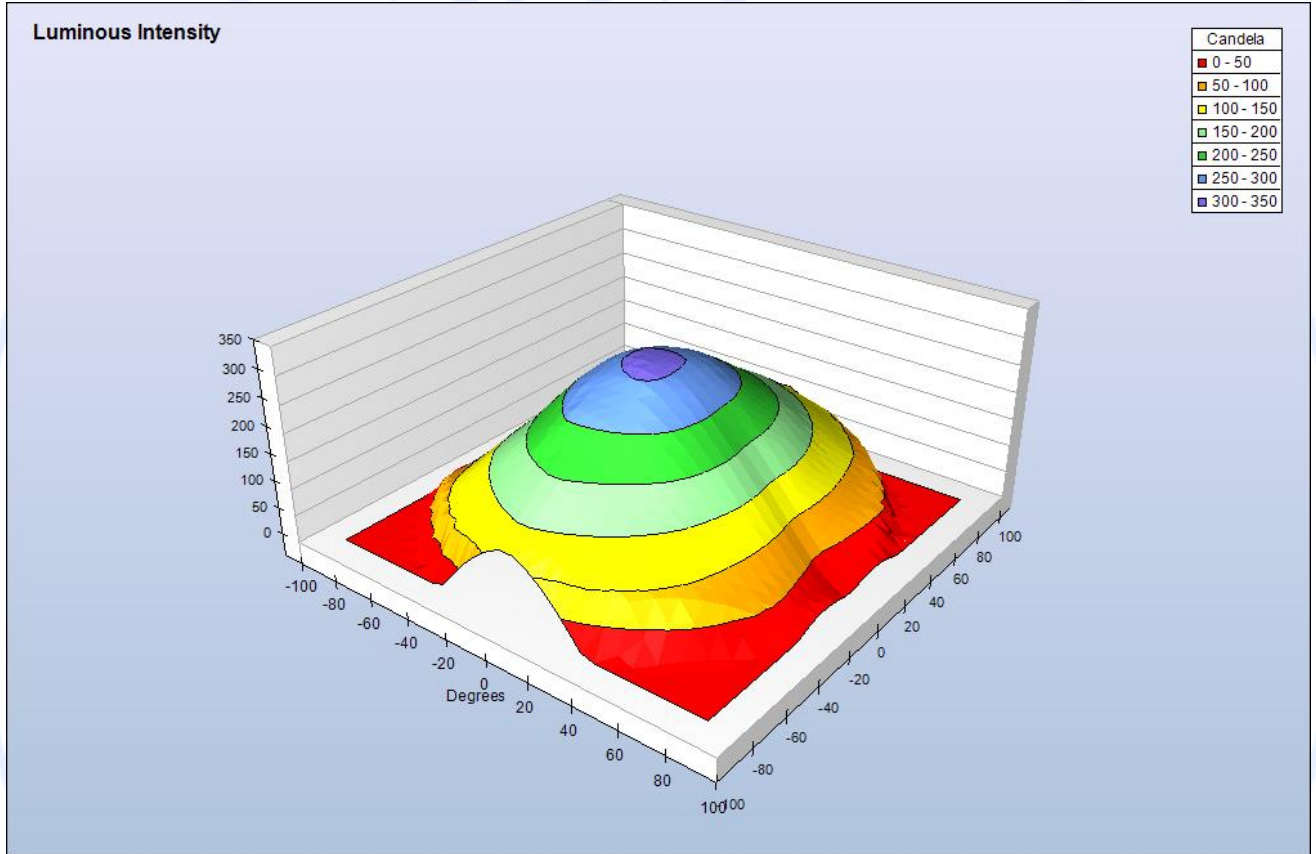
MUAYENE – DENEY SONUÇLARI / TEST RESULTS



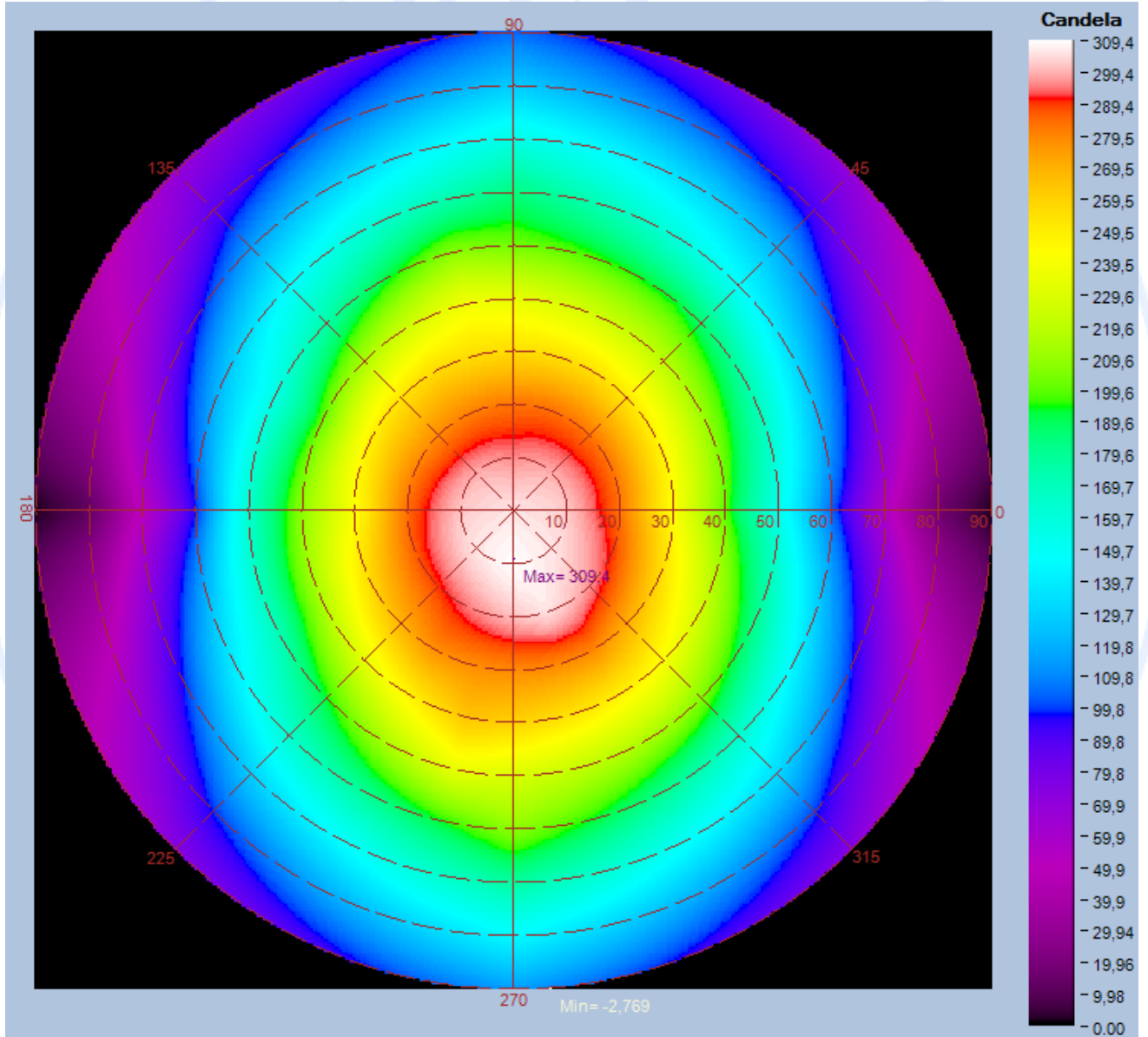
MUAYENE – DENEY SONUÇLARI / TEST RESULTS



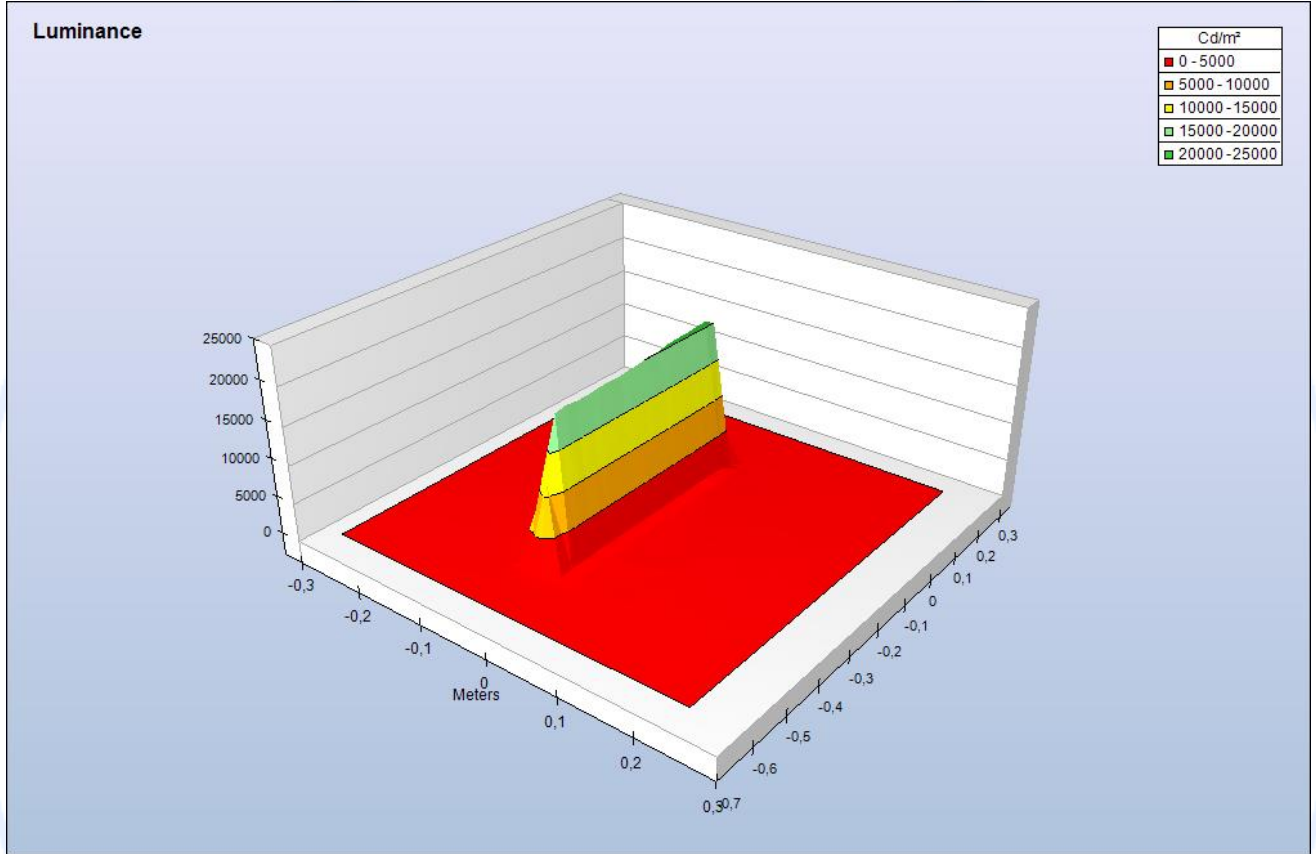
MUAYENE – DENEY SONUÇLARI / TEST RESULTS



MUAYENE – DENEY SONUÇLARI / TEST RESULTS



MUAYENE – DENEY SONUÇLARI / TEST RESULTS



MUAYENE – DENEY SONUÇLARI / TEST RESULTS

