



27/02/2015

Sayı/Issue: 26 02 15 SÖ 029/00

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

27.02.2015 / 15-046 / ODSEL ELEKTRONİK / LED TUBE 25W 1149mm

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,

Doç. 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 |
| 15-046 |
| 27.02.2015 |

Deneği Talep Eden : **ODESEL ELEKTRONİK**
(Adı,Adresi,Şehir v.b.) Orta Ölçekli sanayi Bölgesi 14. Sokak No:4 Muradiye / MANİSA
Customer (Name,Adress, City etc.)

Deney Talep Tarihi /No : 26.02.2015
Order Date /No

Numunenin Kabul Tarihi : 26.02.2015
Test Item Receipt Date

Deneylerin Yapıldığı Tarih : 26.02.2015
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 : 13
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 | Tarih | Deney Sorumlusu | Kontrol Eden | Onaylayan |
|-------------|-------------|----------------------------------|-------------------------------------|------------------------------------|
| <i>Seal</i> | <i>Date</i> | <i>Person in charge of tests</i> | <i>Reviewer</i> | <i>Approved By</i> |
| | | Sercan ÖZKAN Lab. Tech. | Temel SÖNMEZOCAK Quality Manager | Doç.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 fill 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**

| | | |
|--|---|--------|
| Kullanılan Cihaz/EquipmentUsed.....: | NFMS Goniophotometer LabSphere Sphere System | |
| Uygulanan Standart-Metot/Applied Standard-Method.....: | TS EN13032-1:2004 +A1:2012LightandLighting – Measurementand Presentation of Photometric Data of Lampsand Luminaires-Part1: Measurementand File. | |
| Deney Ortam Şartları/ExperimentalAmbientConditions.....: | 25°C ±5°C, 35%RH±5%RH | |
| Armatüre Uygulanan Gerilim / AppliedVoltage.....: | 220V | |
| Armatür Markası-Üretici /LuminaireBrand-Producer.....: | ODSEL ELEKTRONİK | |
| Armatür Kodu-Modeli / LuminaireCode-Model.....: | LED TUBE 25W 1149mm | |
| Armatür Lamba Tipi-açıklama/Lamptype-description of Luminaire.....: | LED | |
| Armatür Boyutları / Dimensions of LuminaireArea.....: | Uzunluk –Çap / Lenght-dia | 1149mm |
| | Genişlik/width | 25mm |
| | Yükseklik / Height | 40mm |
| Işıyan Alan Boyutu / Dimensions of LuminousArea.....: | Uzunluk –Çap / Lenght-dia | 1149mm |
| | Genişlik/width | 25mm |
| | C0 Yükseklik / Height | -- |
| | C90Yükseklik / Height | -- |
| | C180 Yükseklik / Height | -- |
| | C270 Yükseklik / Height | -- |

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

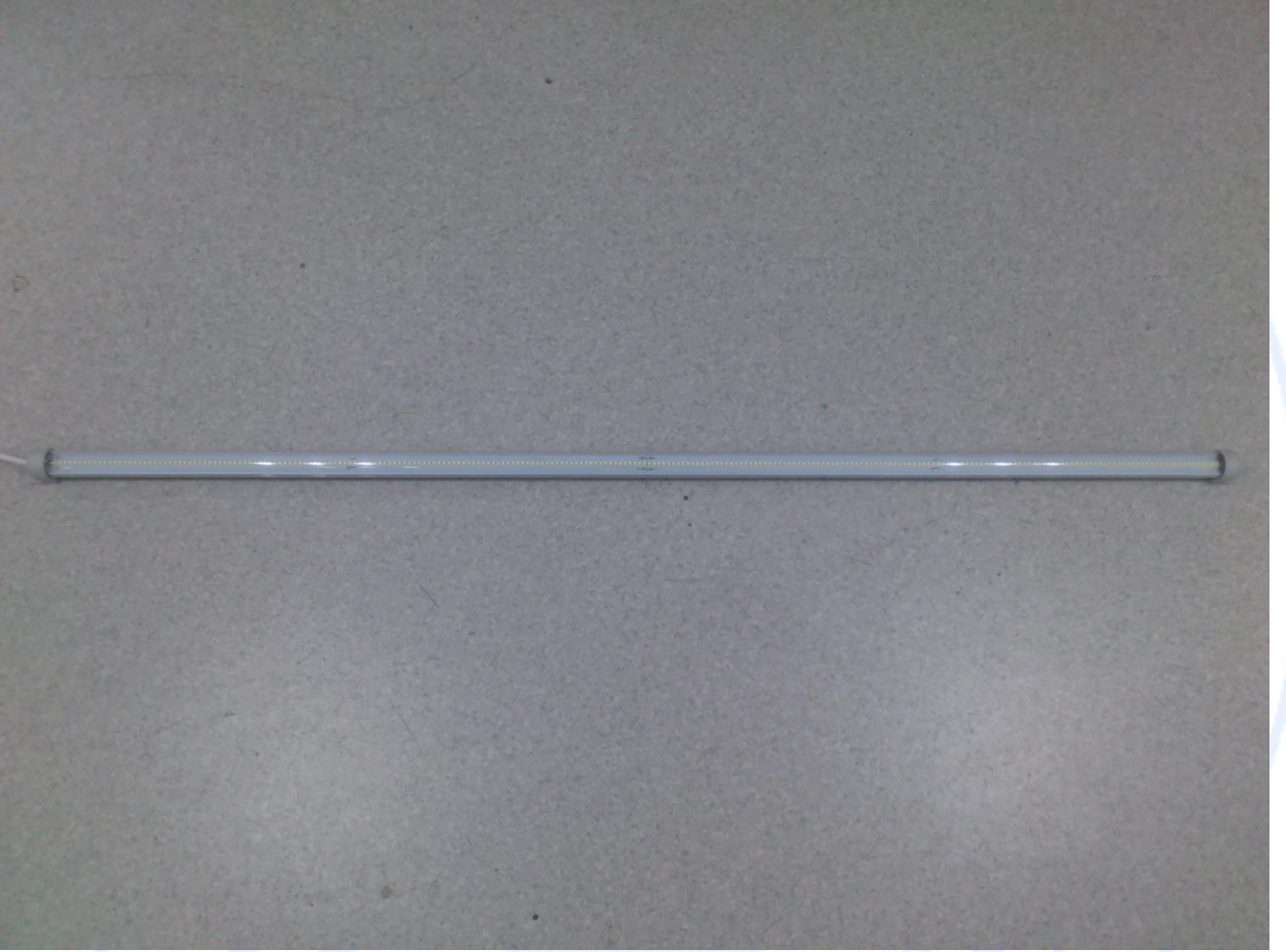
| | |
|---|----------------|
| Armatürde Ölçülen Toplam Güç/Measured Total Power of Luminaire.....: | 26W |
| Armatürün Ölçülen Işık Akısı /Measured Luminous Flux of Luminaire.....: | 3650 lm |
| Lamba Katalog Işık Akısı / Lamp Catalog Luminous Flux.....: | -- |
| Armatür verimliliği (lm/Watt) / Luminous efficacy.....: | 140,38 lm/Watt |
| Armatür Geri Verim (LOR)% / Luminous efficacy %.....: | -- |

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 |

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

Numunenin fotoğrafları / Photos of the Test Sample



İSTANBUL AYDIN ÜNİVERSİTESİ AYDINLATMA TEST-ÖLÇÜM ve ANALİZ LABORATUARLARI

(İSTANBUL AYDIN UNIVERSITY LIGHTING TEST MEASUREMENT AND ANALYSIS LABORATORIES)

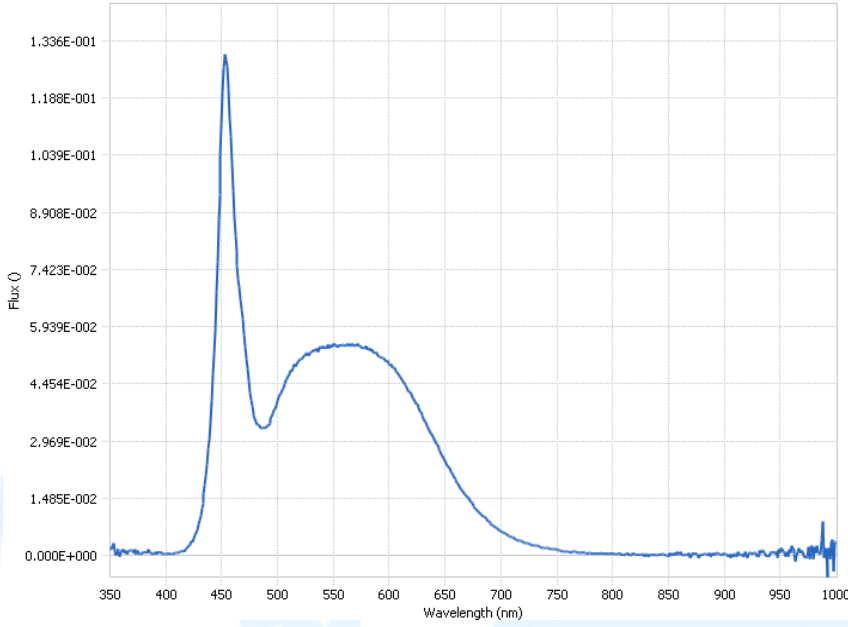
MUAYENE – DENEY SONUÇLARI / TEST RESULTS

Fotometrik Ölçümler / Photometric measurements

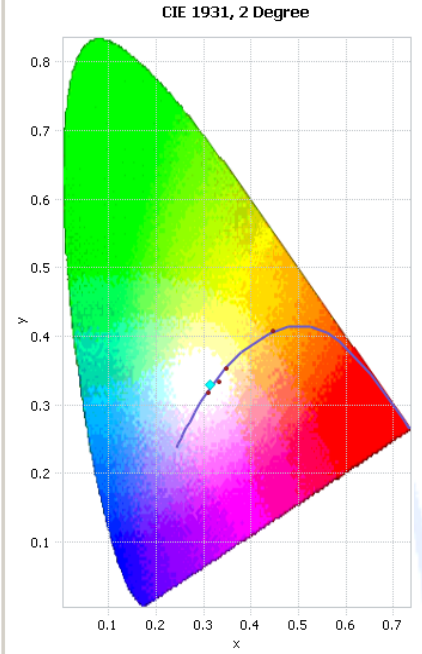
| Parameter | Scan 1 |
|---------------------------------------|-----------------|
| Date/Time | 2/26/2015 14:28 |
| Radiant Flux (Watts) | 12.21 |
| Luminous Flux (lumens) | 3650.00 |
| Scotopic Luminous Flux (lm') | 8434.00 |
| Chromaticity x coord | 0.3135 |
| Chromaticity y coord | 0.3288 |
| Chromaticity u coord | 0.1985 |
| Chromaticity v coord | 0.3122 |
| Delta uv | 0.0026 |
| Chromaticity u' coord | 0.1985 |
| Chromaticity v' coord | 0.4683 |
| Peak Wavelength (nm) | 453.5 |
| Center Wavelength (nm) | 456.1 |
| Centroid Wavelength (nm) | 545.5 |
| Dominant Wavelength (nm) | 488.8 |
| Full Width Half Max Bandwidth (nm) | 22.9 |
| Excitation Purity (%) | 7 |
| Correlated Color Temperature (deg. K) | 6459 |
| Correlation | 0.0054 |
| Correlation Coefficient | 0.000502187 |
| Color Rendering Index Average (RA) | 86.59029279 |
| Color Rendering Index (R1) | 86 |
| Color Rendering Index (R2) | 92.9 |
| Color Rendering Index (R3) | 94.3 |
| Color Rendering Index (R4) | 84 |
| Color Rendering Index (R5) | 85 |
| Color Rendering Index (R6) | 86.9 |
| Color Rendering Index (R7) | 89.1 |
| Color Rendering Index (R8) | 74.5 |
| Color Rendering Index (R9) | 27 |
| Color Rendering Index (R10) | 81.1 |
| Color Rendering Index (R11) | 83.8 |
| Color Rendering Index (R12) | 58.7 |
| Color Rendering Index (R13) | 88.8 |
| Color Rendering Index (R14) | 97.5 |

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

▼ SPECTRAL FLUX GRAPH:



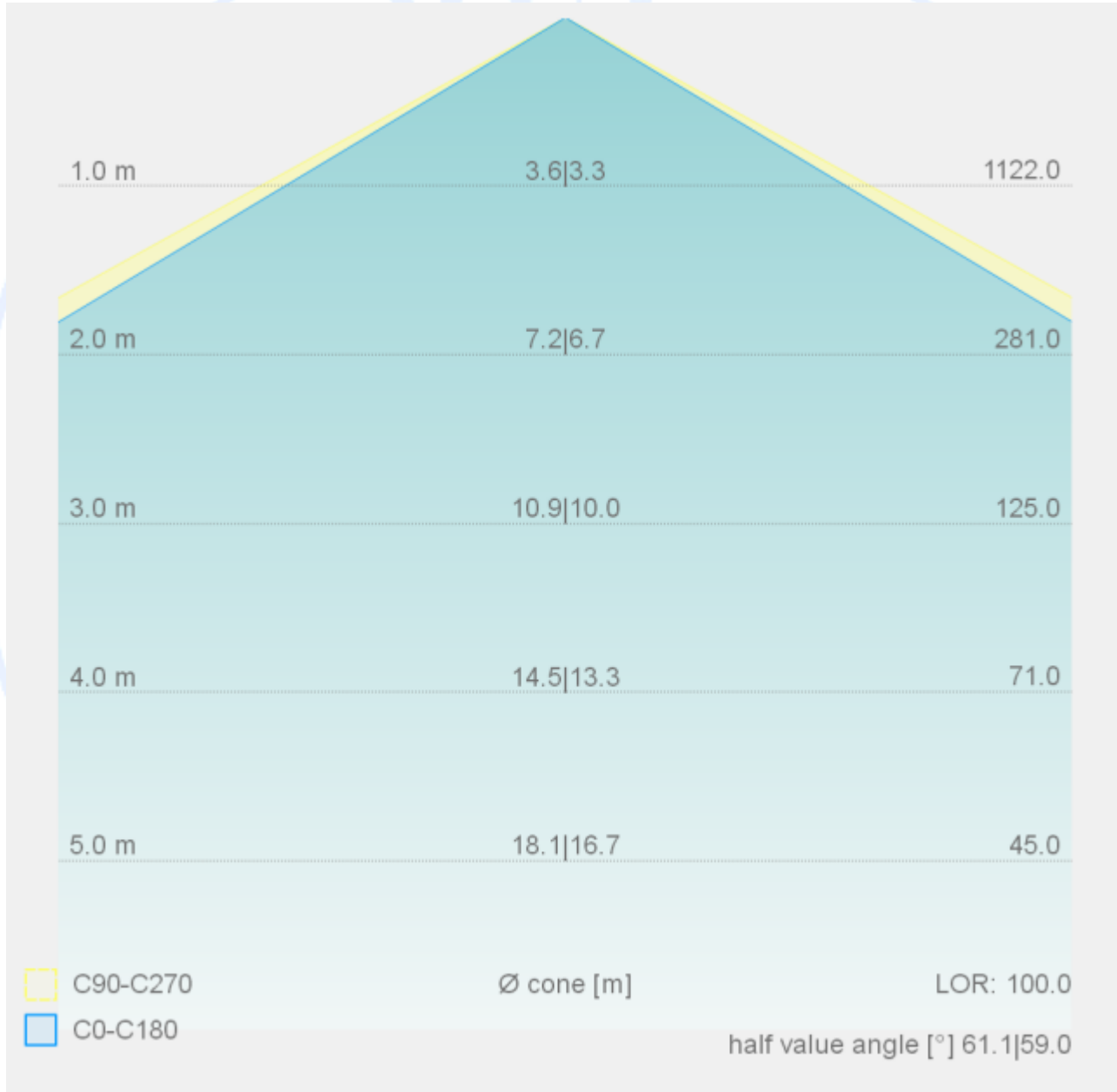
▼ CHROMATICITY DIAGRAM:



MUAYENE – DENEY SONUÇLARI / TEST RESULTS

FOTOMETRİK ÖLÇÜM SONUÇLARI / PHOTOMETRIC MEASUREMENT RESULTS

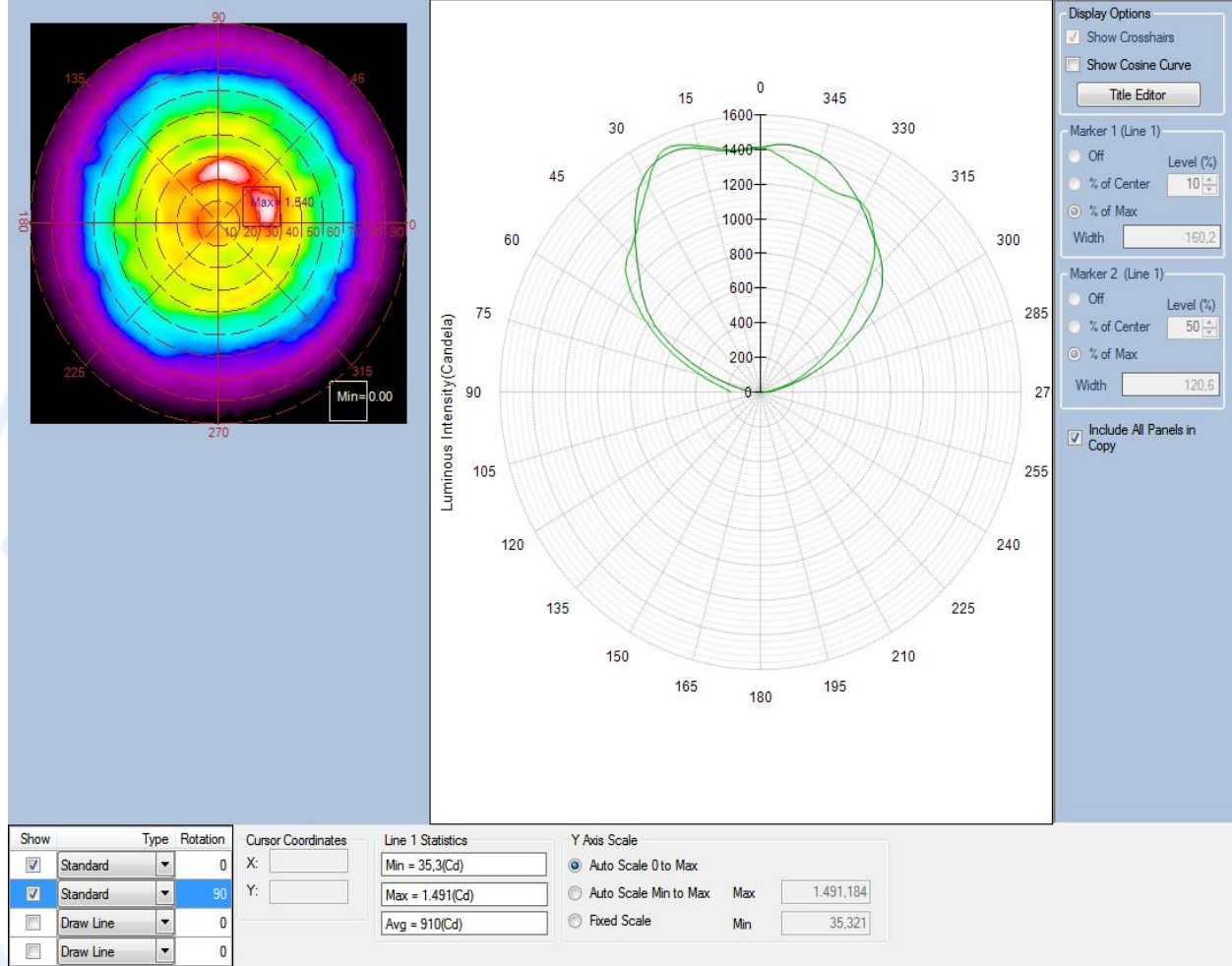
Cone Diagram ;



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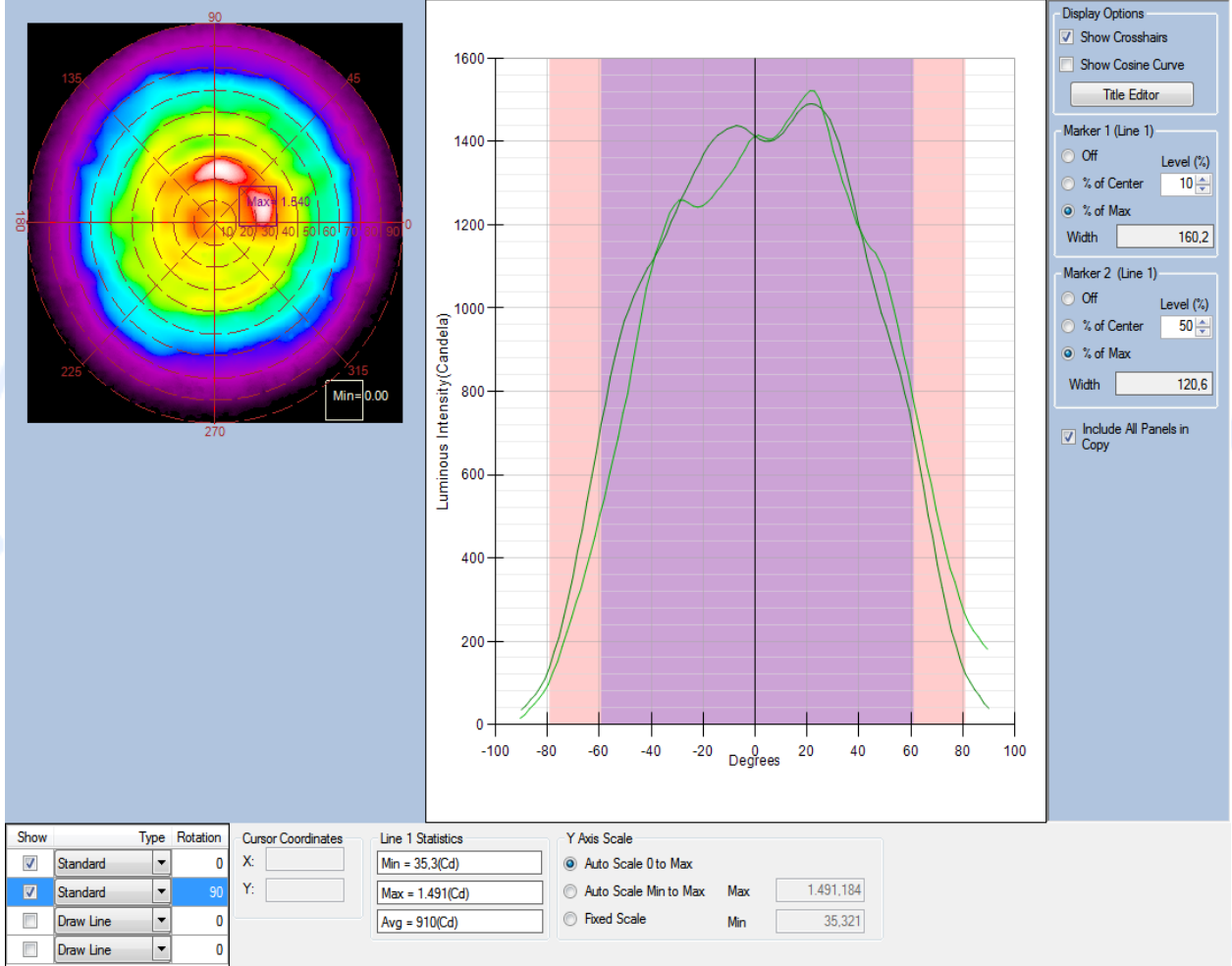
MUAYENE – DENEY SONUÇLARI / TEST RESULTS



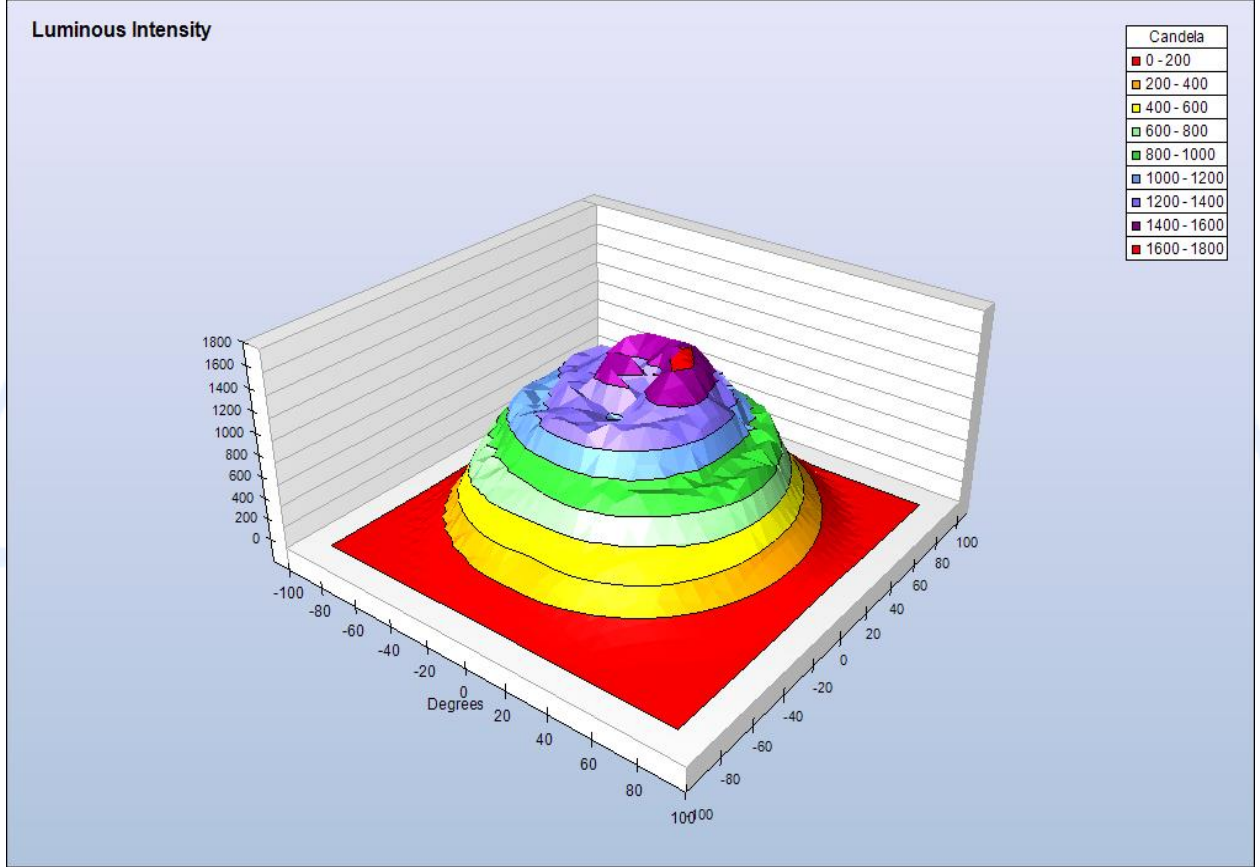
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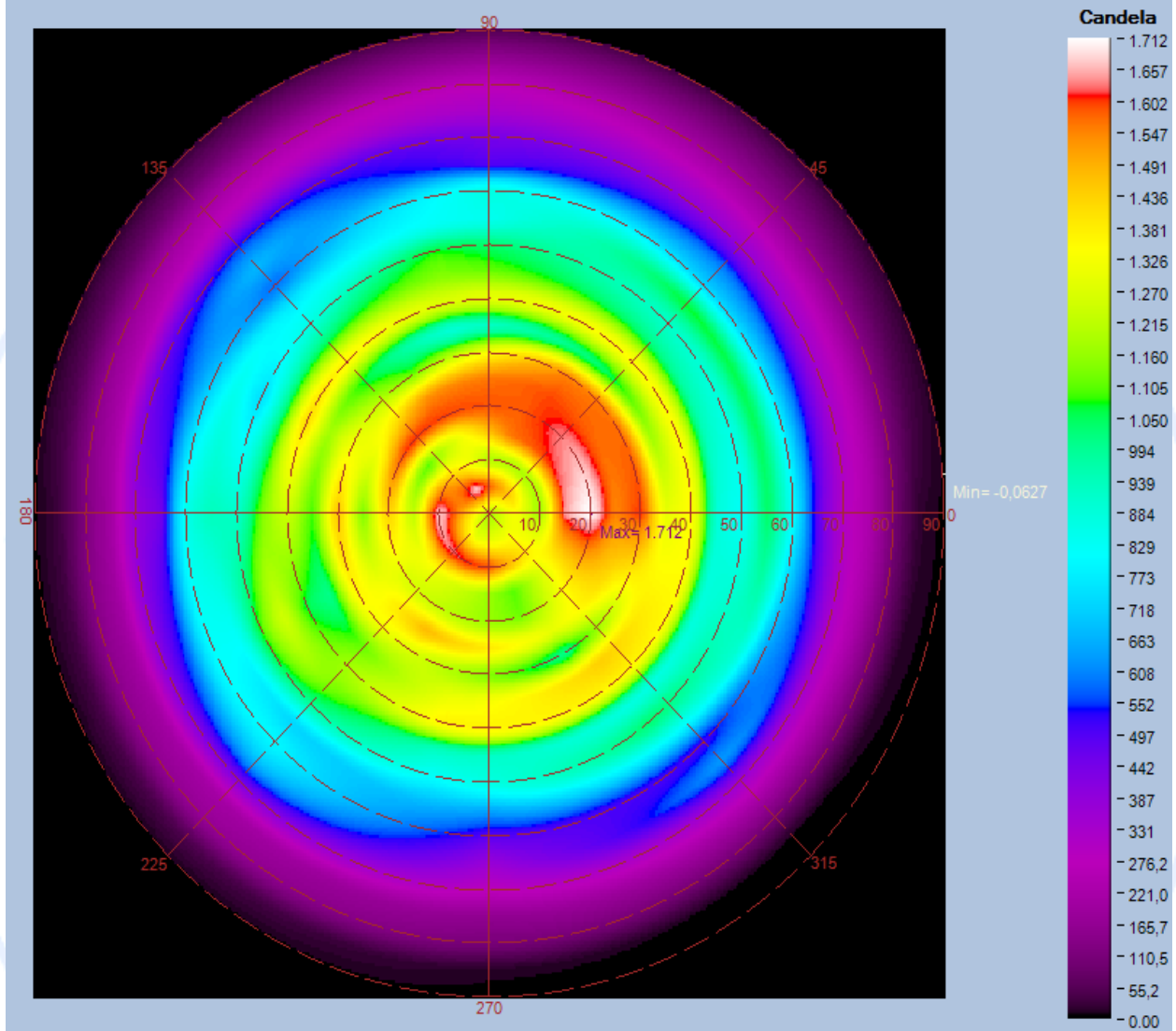
MUAYENE – DENEY SONUÇLARI / TEST RESULTS



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