02/07/2015

Sayı/*Issue*: 05 06 15 SÖ 074/00

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*

02.07.2015 / 15-143 / ODSEL LEKTRONİK / 2501-417-L160TNN

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*)

1) **IP TESTLER /IP Tests**

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 30days by representative of company.

İSTANBUL AYDIN ÜNİVERSİTESİ AYDINLATMA TEST-ÖLÇÜM ve ANALİZ LABORATUARLARI

(ISTANBUL AYDIN UNIVERSITY LIGHTING TEST MEASUREMENT AND ANALYSIS LABORATORIES)

Adres/Adress: İnönü Cad. No:38 Sefaköy-Küçükçekmece / İSTANBUL Tel : (0212) 444 1 428

MUAYENE VE DENEY RAPORU

TEST REPORT

IAU
15-143
22.06.2015

Deneyi Talep Eden : ODSEL LEKTRONİK SAN. Ve TİC. A.Ş.
(Adı,Adresi,Şehir v.b.) Orta Ölçekli Sanayi Bölgesi, 14.Sokak No:4 Muradiye 45140 Manisa / TURKİYE
Customer (Name,Adress,City etc.)

Deney Talep Tarihi /No : 05.06.2015
Order Date /No

Numunenin Kabul Tarihi : 05.06.2015
Test Item Receipt Date

Deneylerin Yapıldığı Tarih : 22.06-02.07.2015
Date of Test

Uygulanan Standart /Metod : TS EN13032-1:2004 +A1:2012LightandLighting –Measurement and Presentation of Photometric Data of Lampsand Luminaires-Part1: Measurementand File
Applied Standart/Method *TS EN60598-1 (Kısım9) {TS 3033 EN60529 ile birlikte}*

Raporun Sayfa Sayısı : 11
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.

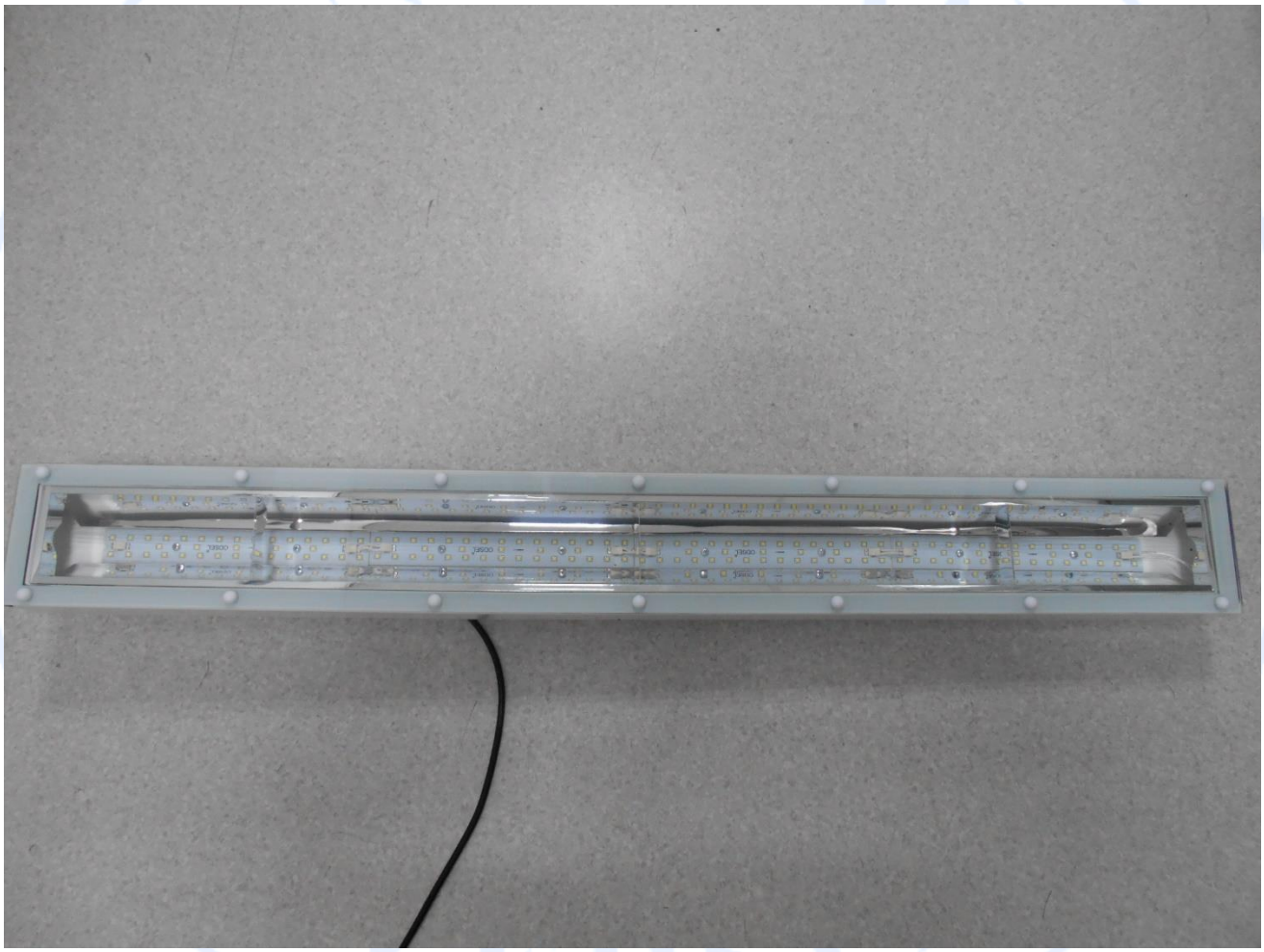
Mühür	**Tarih**	**Deney Sorumlusu**	**Kontrol Eden**	**Onaylayan**
Seal	*Date*	*Person in charge of tests*	*Reviewer*	*Approved By*
		Sercan ÖZKAN	*Temel SÖNMEZOCAK*	*Prof.Dr. Zafer UTLU*
		Lab. Tech.	*Quality Manager*	*Lab. Manager*

İSTANBUL AYDIN ÜNİVERSİTESİ AYDINLATMA TEST-ÖLÇÜM ve ANALİZ LABORATUARLARI

(***ISTANBUL AYDIN UNIVERSITY LIGHTING TEST MEASUREMENT AND ANALYSIS LABORATORIES)***

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

Numunenin fotografları / *Photos of the Test Sample*



MUAYENE – DENEY SONUÇLARI / TEST RESULTS

FOTOMETRİK ÖLÇÜM SONUÇLARI

PHOTOMETRIC MEAUSEREMENT 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 LEKTRONİK
Armatür Kodu-Modeli / LuminaireCode-Model……:	2501-417-L160TNN
Armatür Lamba Tipi-açıklama/Lamptype-description of Luminaire……:	LED SIVA ÜSTÜ

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

FOTOMETRİK ÖLÇÜM SONUÇLARI / PHOTOMETRIC MEASUREMENT RESULTS

Armatürde Ölçülen Toplam Güç/Measured Total Power of Luminaire……:	61W ; 0,97pf
Armatürün Ölçülen Işık Akısı /MeasuredLuminousFlux of Luminaire……:	7300 lm (Effective Value)
Lamba Katalog Işık Akısı / LampCatalogLuminousFlux……:	--
Armatür verimliliği (lm/Watt) / Luminousefficacy……:	119,67 lm/Watt
Armatür Geri Verim (LOR)% / Luminousefficancy %……:	--

FOTOMETRİK ÖLÇÜM BELİRSİZLİK TABLOSU / *PHOTOMETRİC MEASUREMENT UNCERTAINTY BUDGET*

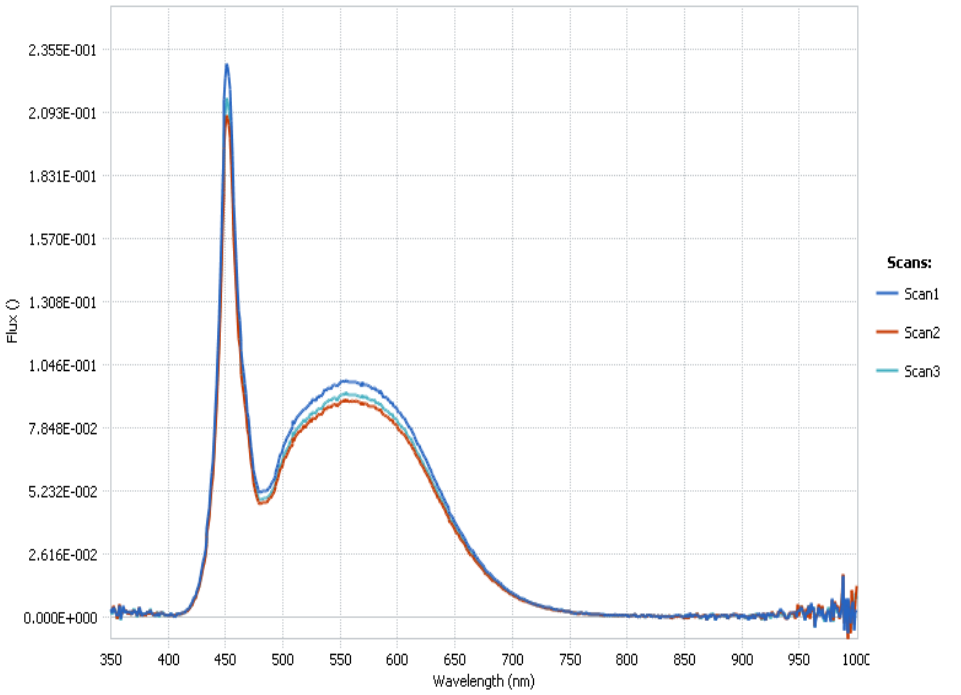
Deney/*Test(Unit)*	**Ölçüm Belirsizliği/*Uncertainty***
Radiant Flux (Watt)	1,3%
Luminous flux (Lumen / Lm)	1,08%
Correlated Color Temperature [CCT – Kelvin(K)]	7K
Chromaticty x coord	0,02
Chromaticty y coord	0,02
Chromaticty u' coord	0,02
Chromaticty v' coord	0,02
Color Rendering Index	1,4

FotometrikÖlçümler / Photometric measurements

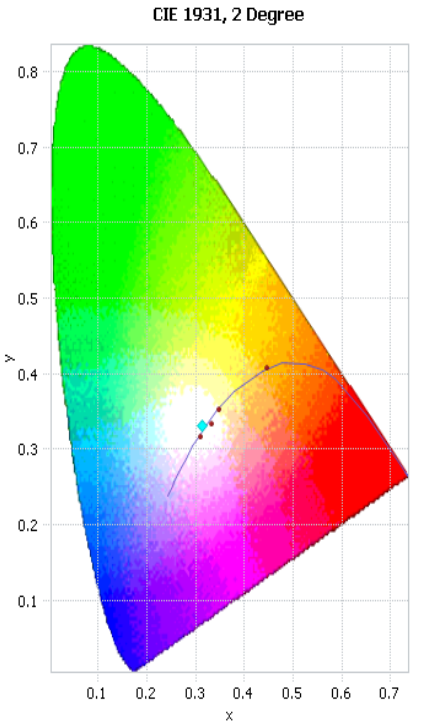
Parameter	Scan 3-Effective Value
Date/Time	23.06.2015 14:24
Radiant Flux (Watts)	19,78
Luminous Flux (lumens)	7300
Scotopic Luminous Flux (lm')	13490
Chromaticity x coord	0,3142
Chromaticity y coord	0,3305
Chromaticity u coord	0,1983
Chromaticity v coord	0,3129
Delta uv	0,0031
Chromaticity u' coord	0,1983
Chromaticity v' coord	0,4693
Peak Wavelength (nm)	451,5
Center Wavelength (nm)	453,2
Centroid Wavelength (nm)	545,4
Dominant Wavelength (nm)	489,8
Full Width Half Max Bandwidth (nm)	19,7
Excitation Purity (%)	6,6
Correlated Color Temperature (deg. K)	6408
SDCM	5.1 F 6500
Correlation	0,0054
Correlation Coeficient	5,34E-05
Color Rendering Index Average (RA)	83,99212686
Color Rendering Index (R1)	82,4
Color Rendering Index (R2)	89,2
Color Rendering Index (R3)	92
Color Rendering Index (R4)	82,8
Color Rendering Index (R5)	82,5
Color Rendering Index (R6)	83,2
Color Rendering Index (R7)	88,7
Color Rendering Index (R8)	71,2
Color Rendering Index (R9)	13,2
Color Rendering Index (R10)	73
Color Rendering Index (R11)	81,8
Color Rendering Index (R12)	56,9
Color Rendering Index (R13)	84,6
Color Rendering Index (R14)	95,9

MUAYENE – DENEY SONUÇLARI / TEST RESULTS

SPECTRAL FLUX GRAPH:

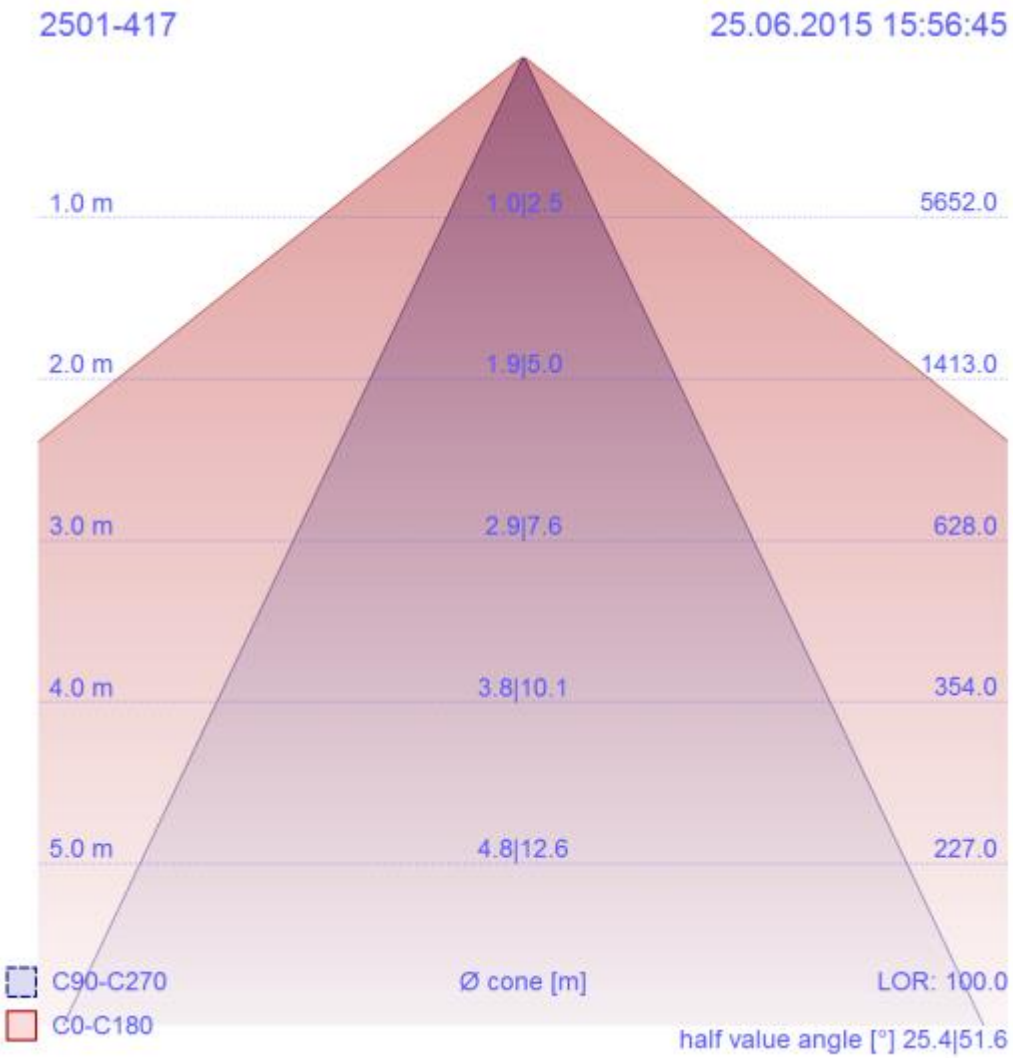


CHROMATICITY DIAGRAM:

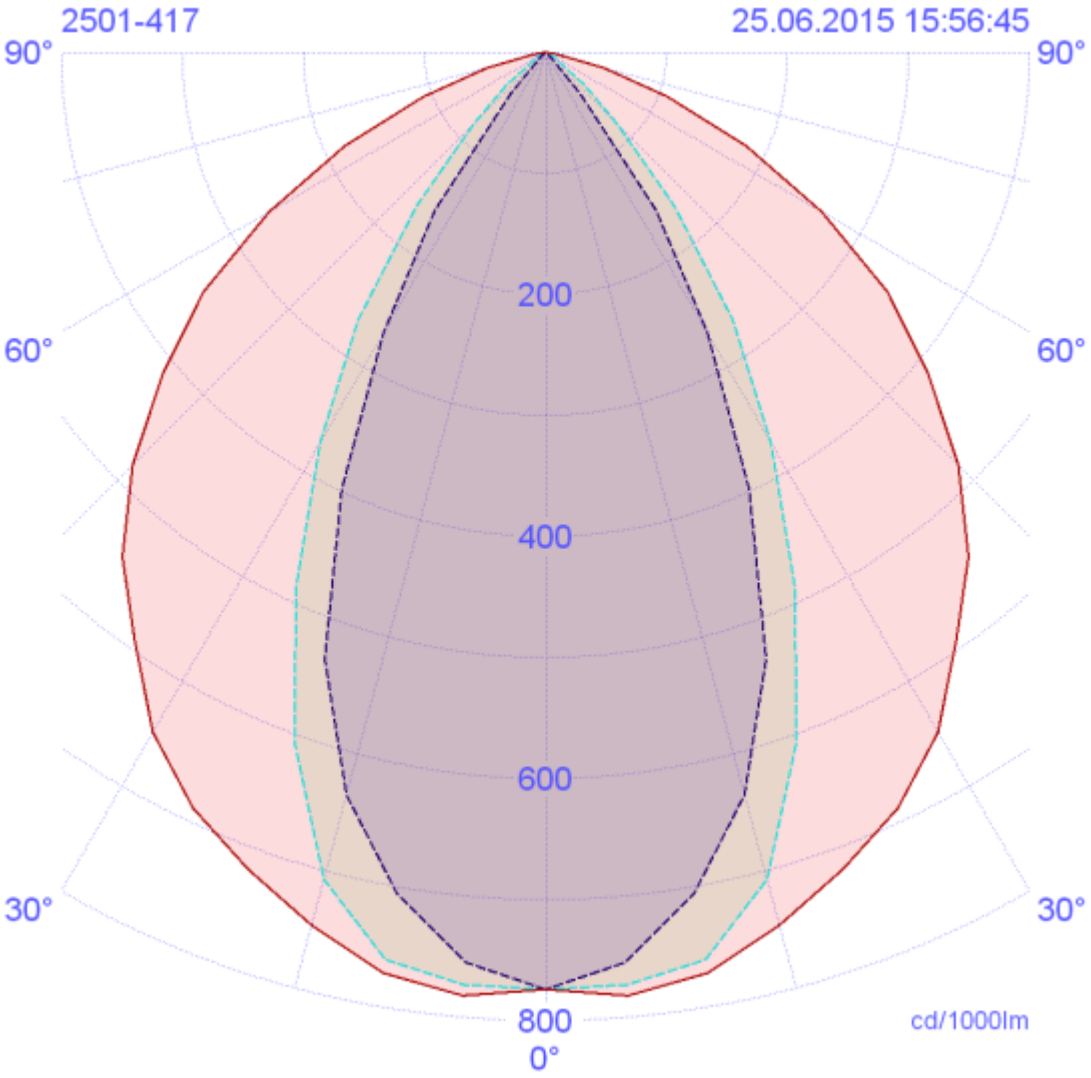


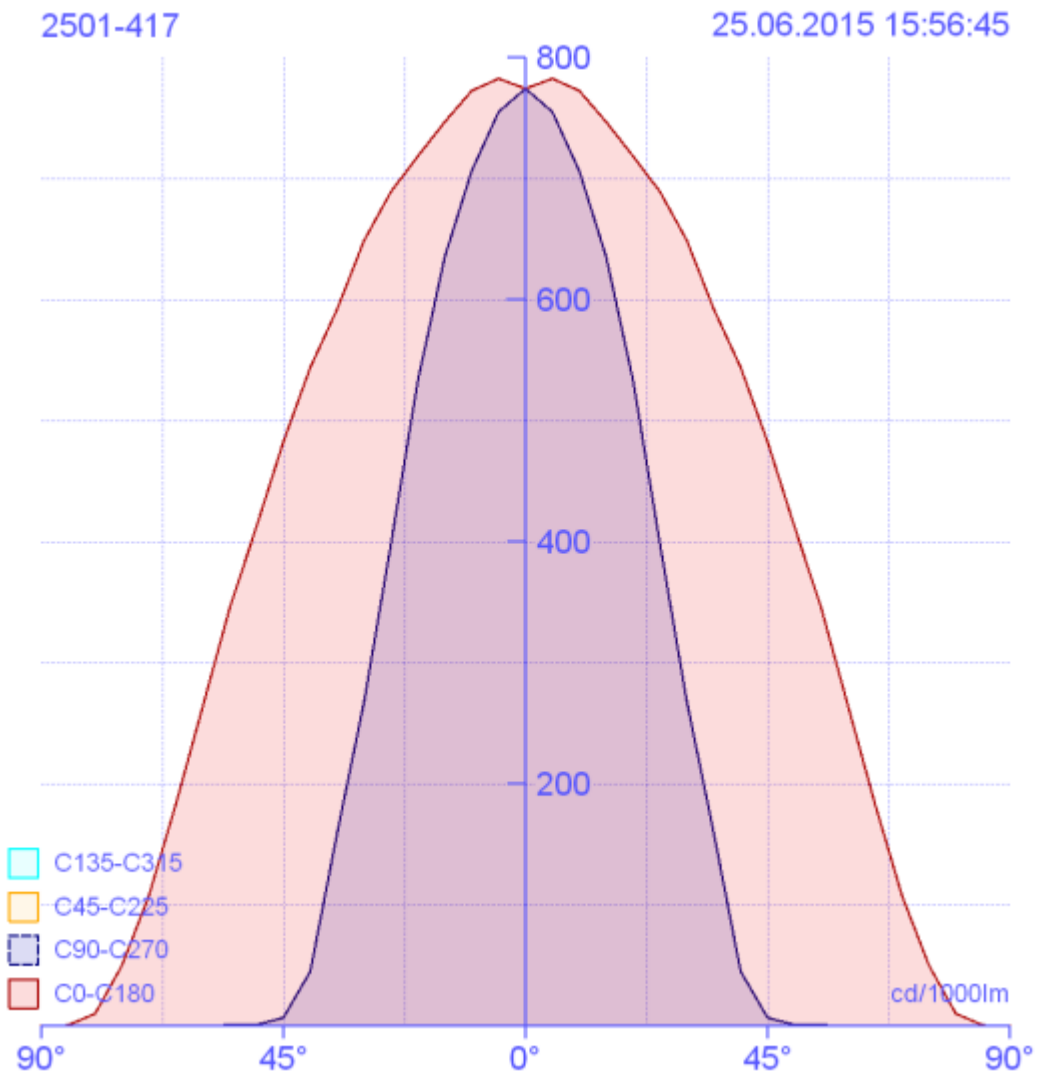
DETAILS:

Cone Diagram ;



MUAYENE – DENEY SONUÇLARI / TEST RESULTS




2501-417
25.06.2015 15:56:45
800
600
400
200
C135-C315
C45-C225
C90-C270
C0-C180
cd/1000lm
90°
45°
0°
45°
90°

EK1 /ANNEX1: IP TEST MUAYENE - DENEY SONUÇLARI *TEST RESULTS*

TS EN60598-1			
Madde/Item	Kural + Deney (Rule+Test)	Sonuç – Açıklama /Description	Karar/Verdict

9	**TOZA, KATI CİSİMLERE VE NEME KARŞI KORUMA** **(RESISTANCE TO DUST ,SOLID OBJECTS AND MOISTURE)**		**Uygun**
9.2	Toz, katı cisim ve nem için deneyler: /Tests for İngress of dust,solid objects and moisture:		
	- IP'ye göre sınıflandırma /IP Classification……:	IP 65	Uygun
9.2.1	a) toza karşı korumalı armatürlerde birikinti olamaması (IP 5X) (Dust-Proof luminaires (First characterisitic IP numeral 5)		Uygun
9.2.2	b) toz girmez armatürlerde talk olmaması (IP 6X) (Dust-Proof luminaires (First characterisitic IP numeral 6)		--
9.2.5	Sıçrayan suya karşı korumalı (İkinci karakteristik IP rakamı 4 olan) Splash-proof luminaires(Second characteristic IP numeral 4)		--
9.2.6	Fışkıran suya karşı korumalı (İkinci karakteristik IP rakamı 5 olan) (Jet-proof luminaires(Second characteristic IP numeral 5)		Uygun
9.3	Humidity test 48 h		Uygun