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ÖLÇÜM RAPORU
MEASUREMENT REPORT

TL-806

19-TST-0074-59

04-19

Müşterinin Adı Adresi
Customer name/address

: HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş.
Güllübağlar Mah. Kahramanlar Cad. No:3-1 34906 PENDİK-
İSTANBUL/TÜRKİYE

İstek Numarası
Order No

: 19-TST-0074

Numunenin Adı ve Tarifi
Name and identity of test item

: SWORD DW FLAT DIFFUSED(90cm)
Sword DW Flat diffused(90cm)

Numunenin kabul tarihi
The date of receipt of test item

: 21.03.2019

Açıklamalar
Remarks

: DGC'ye , IES LM-79-08 standardı uyarınca fotometrik ölçümler yapılmıştır.
Photometric measurement has been applied to EUT according to IESNA LM-79-08

Deneyin Yapıldığı Tarih
Date of Test

: 04.04.2019

Raporun Sayfa Sayısı
Number of Pages of the Report

:44

Deney laboratuvarı olarak faaliyet gösteren TÜV AUSTRIA TURK, International Accreditation Service, Inc. (IAS) TL-806 ile TS EN ISO/IEC 17025 Nisan 2012 standardına göre akredite edilmiştir.
TÜV AUSTRIA TURK is accredited by International Accreditation Service, Inc. (IAS) under registration number TL-806 for TS EN ISO/IEC 17025 April 2012 as a test laboratory.

International Accreditation Service, Inc. (IAS) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği(EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır.
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Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları 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, laboratuvara gönderilen numunelere uygulanan deney/deneyler sonucu hazırlanmıştır. Müşteriye ait diğer numuneleri kapsamaz.
This report was prepared according to test results of specimens sent to laboratory. It doesn't contain other specimens belonging to customer.



Deney Sorumlusu
Person in charge of test



Saltuk Buğra GÜNEŞ

Onaylayan
Approval



Gürhan CANSIZ

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1.1

DGC, Çevre Şartları ve Sembollerin Tanımları (*Description of the EUT, Environmental Conditions and Symbol Definitions*)

Markası / Brand

: HERA

Modeli / Model

: DYNAMIC WHITE FLAT DIFFUSED(90CM)

Seri Numarası / Serial Number

: Test Numunesi
Test Sample

Beyan Gücü / Rated Power

: 12.6 W

Beyan Gerilimi / Rated Voltage

: 48 VDC

Sembollerin Tanımı / Definitions of Symbols

DGC= Denedyden Geçen Cihaz
EUT=Equipment Under Test



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1.2 Deney Standartları (Test Standards)

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

Standart / Standard

- IESNA LM-79-08 Electrical and Photometric Measurements of Solid-State Lighting Products

1.3 Deney Ekipmanları (Test Equipments)

Kayıt No. (ID – No.)	Tip (Type)	Kalibrasyon Tarihi (Calibration Date)	Sonraki Kalibrasyon Tarihi (Next Calibration Date)	Kontrol (Check Point)
LAB-011	Goniophotometer	09.01.2019	09.01.2020	<input checked="" type="checkbox"/>
LAB-015	AC Power Supply	05.06.2018	05.06.2019	<input checked="" type="checkbox"/>
LAB-027	Powermeter	09.01.2019	09.01.2020	<input checked="" type="checkbox"/>
LAB-023	Standart Lamp	09.01.2019	09.01.2020	<input checked="" type="checkbox"/>
LAB-012	Integrating sphere	28.05.2018	28.05.2019	<input checked="" type="checkbox"/>

1.3 Komponent listesi (Component list)

Komponent (Component)	Üretici (Manufacturer)	Model (Model)	Standart no. (Standart No.)	Sertifika no. (Certificate No.)
LED	Cree Inc	CLQ6A	Led-RGBW IF=20Ma VR=5V $\phi V = \text{Initial Data} \times 0,7$	-
PCB	C13090_R1.0	1.6mm FR44 Layers, 35+35+35+35um Cu	-	-



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2.1 FULL ON Deney Sonuçları (Test Results of the FULL ON)

Elektriksel Ölçümler
(Electrical Measurements)

Ölçülen Güç (W) (Input Power)	12,667
Ölçülen Gerilim (V) (Input Voltage)	48 VDC
Ölçülen Akım (A) (Input Current)	0,2639
Güç Faktörü (PF) (Power Factor)	-
Ölçülen Frekans (Hz) (Input Frequency)	-
Ortam Sıcaklığı / Bağıl Nem (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
Stabilizasyon Süresi (Stabilization Time)	60 dk ±5dk

Fotometrik Ölçüm Sonuçları
(Photometric Measurement Results)

Toplam Işık Akısı (Total Luminous Flux) (lm)	252,91
Maksimum Işık Şiddeti (Max. Light Intensity) (cd)	45,38
Armatür Etkinliği (Luminaire Efficacy) (lm/W)	19,97



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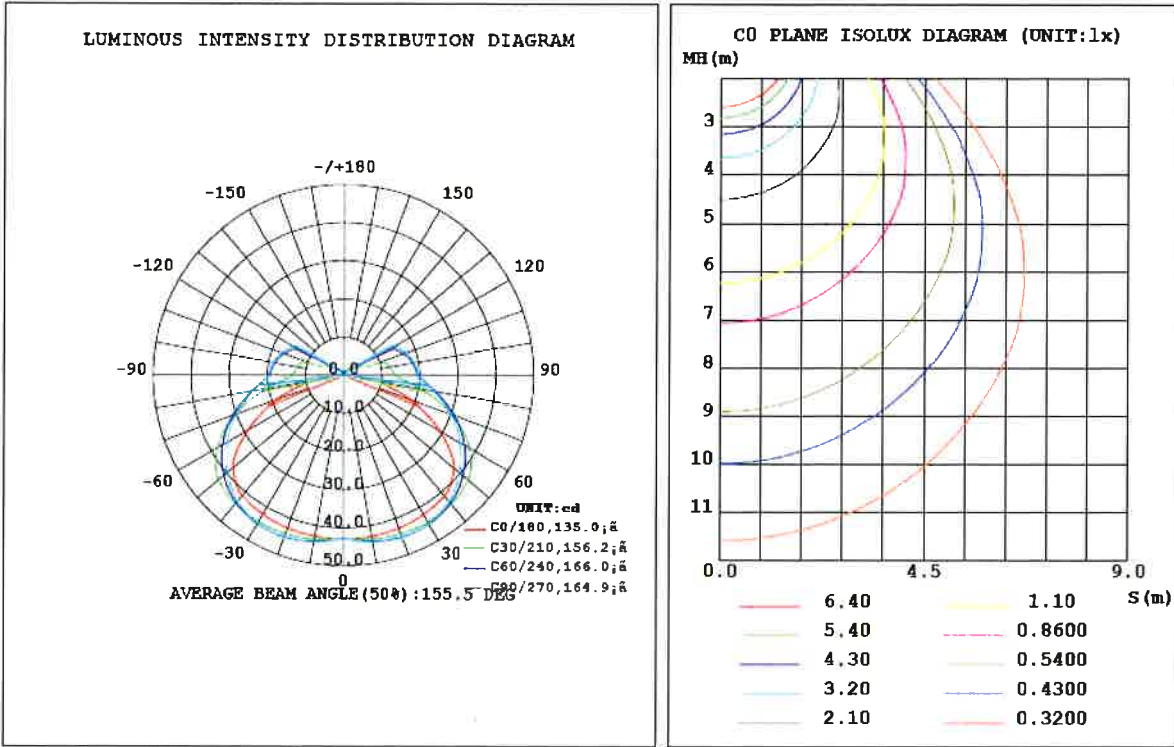
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2.1 FULL ON renk Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON color)



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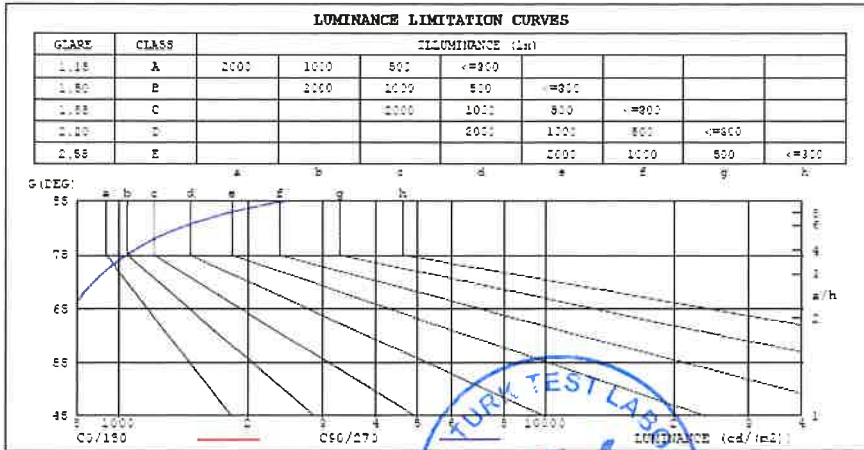
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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)

**ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES**

ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	☉ zone	☉ total	llum.lamp
5	42.86	42.40	42.64	42.40	42.86	42.40	42.64	42.40	0- 5	1.092	1.092	0.45,0.44
10	42.82	42.92	44.28	43.92	42.82	42.92	44.28	42.92	5- 10	2.119	4.152	1.64,1.64
15	42.73	44.39	44.98	44.35	42.72	44.39	44.98	44.39	10- 15	5.222	9.274	2.72,2.72
20	42.60	44.76	45.22	44.76	42.60	44.76	45.22	44.76	15- 20	7.210	16.68	6.6,6.6
25	42.41	44.97	45.22	44.97	42.41	44.97	45.22	44.97	20- 25	9.233	26.02	10.2,10.2
30	42.18	44.97	44.97	44.97	42.15	44.97	44.97	44.97	25- 30	11.26	37.29	14.7,14.7
35	41.77	44.70	44.24	44.70	41.77	44.70	44.24	44.70	30- 35	13.04	50.33	18.9,18.9
40	41.29	44.15	42.17	44.15	41.29	44.15	42.17	44.15	35- 40	14.61	64.94	25.7,25.7
45	40.04	42.27	41.70	42.27	40.04	42.27	41.70	42.27	40- 45	16.93	80.86	32.22
50	37.86	42.01	39.91	42.01	37.86	42.01	39.91	42.01	45- 50	16.97	97.74	38.6,38.6
55	34.06	40.30	37.81	40.30	34.06	40.30	37.81	40.30	50- 55	17.38	115.1	45.9,45.9
60	29.12	38.08	35.41	38.08	29.12	38.08	35.41	38.08	55- 60	17.24	132.3	52.2,52.2
65	23.85	35.25	32.76	35.25	23.85	35.25	32.76	35.25	60- 65	14.97	148.9	58.9,58.9
70	18.78	31.85	29.90	31.85	18.78	31.85	29.90	31.85	65- 70	15.44	164.2	65.65
75	13.12	28.13	26.91	28.13	13.12	28.13	26.91	28.13	70- 75	12.99	179.2	70.5,70.5
80	7.577	24.27	24.01	24.27	7.577	24.27	24.01	24.27	75- 80	12.02	190.2	75.2,75.2
85	3.182	20.82	21.47	20.82	3.182	20.82	21.47	20.82	80- 85	10.12	200.4	79.2,79.2
90	0.1249	18.27	19.79	18.27	0.1249	18.27	19.79	18.27	85- 90	8.521	208.9	82.6,82.6
95	0.1261	17.78	19.21	17.78	0.1261	17.78	19.21	17.78	90- 95	7.950	216.7	85.7,85.7
100	0.0914	17.08	18.77	17.08	0.0914	17.08	18.77	17.08	95-100	7.507	224.2	88.6,88.6
105	0.0450	16.17	18.08	16.17	0.0450	16.17	18.08	16.17	100-105	7.029	231.2	91.4,91.4
110	0.0002	15.13	17.28	15.13	0.0002	15.13	17.28	15.13	105-110	6.347	237.6	93.9,93.9
115	0	10.88	16.26	10.88	0	10.88	16.26	10.88	110-115	5.414	243.0	96.1,96.1
120	0	4.741	15.24	4.741	0	4.741	15.24	4.741	115-120	4.200	247.2	97.7,97.7
125	0	3.769	6.260	3.769	0	3.769	6.260	3.769	120-125	2.445	249.6	97.7,97.7
130	0	2.976	1.855	2.976	0	2.976	1.855	2.976	125-130	1.071	250.7	98.1,98.1
135	0	2.219	1.642	2.219	0	2.219	1.642	2.219	130-135	0.7597	251.5	99.4,99.4
140	0	1.767	1.407	1.767	0	1.767	1.407	1.767	135-140	0.5468	252.0	99.6,99.6
145	0	1.295	1.206	1.295	0	1.295	1.206	1.295	140-145	0.3792	252.4	99.6,99.6
150	0	0.9040	0.9913	0.9040	0	0.9040	0.9913	0.9040	145-150	0.2471	252.6	99.9,99.9
155	0	0.5793	0.7616	0.5793	0	0.5793	0.7616	0.5793	150-155	0.1495	252.8	100.100
160	0	0.3181	0.5195	0.3181	0	0.3181	0.5195	0.3181	155-160	0.0792	252.8	100.100
165	0	0.1129	0.2824	0.1129	0	0.1129	0.2824	0.1129	160-165	0.0392	252.9	100.100
170	0	0	0.0665	0	0	0	0.0665	0	165-170	0.0082	252.9	100.100
175	0	0	0	0	0	0	0	0	170-175	0.0002	252.9	100.100
180	0	0	0	0	0	0	0	0	175-180	0	252.9	100.100



LUMINANCE cd/m2

G(DEG)	C0/180	C90/270
85	365	2463
80	436	1393
75	507	1040
70	549	874
65	564	775
60	562	708
55	554	659
50	549	621
45	566	590

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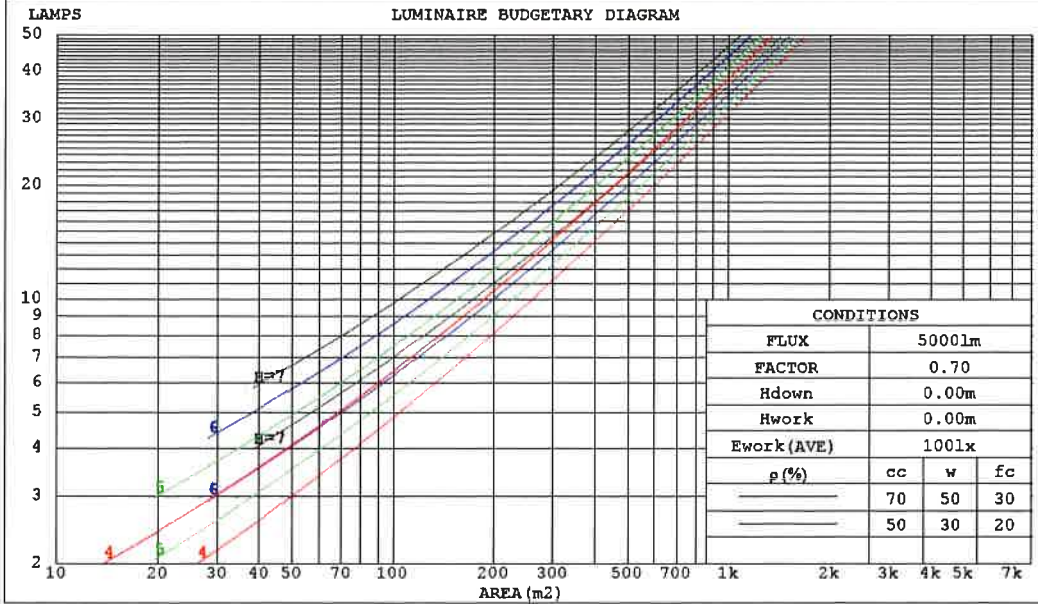
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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.15	1.15	1.15	1.10	1.10	1.10	1.01	1.01	1.01	.93	.93	.93	.86	.86	.86	.83
1.0	.95	.90	.85	.91	.86	.82	.84	.80	.76	.77	.74	.71	.70	.68	.65	.62
2.0	.81	.73	.66	.78	.70	.64	.71	.65	.60	.65	.60	.56	.60	.56	.52	.49
3.0	.70	.61	.53	.67	.58	.52	.61	.54	.48	.56	.50	.45	.51	.47	.42	.39
4.0	.61	.51	.44	.58	.49	.43	.54	.46	.40	.49	.43	.38	.45	.40	.35	.32
5.0	.54	.44	.37	.52	.43	.36	.47	.40	.34	.44	.37	.32	.40	.34	.30	.27
6.0	.48	.38	.32	.46	.37	.31	.42	.35	.29	.39	.32	.27	.36	.30	.26	.23
7.0	.43	.34	.27	.41	.33	.27	.38	.31	.25	.35	.29	.24	.33	.27	.23	.20
8.0	.39	.30	.24	.38	.29	.23	.35	.27	.22	.32	.26	.21	.30	.24	.20	.18
9.0	.36	.27	.21	.34	.26	.21	.32	.25	.20	.29	.23	.19	.27	.22	.18	.16
10.0	.33	.24	.19	.31	.24	.19	.29	.22	.18	.27	.21	.17	.25	.20	.16	.14



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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)

WEC AND CCEC

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pf _c	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.394	.224	.071	.381	.217	.069	.358	.205	.066	.336	.194	.062	.316	.183	.059	
2.0	.342	.188	.058	.331	.182	.056	.310	.172	.053	.290	.163	.051	.272	.154	.048	
3.0	.304	.162	.048	.294	.157	.047	.275	.149	.045	.257	.141	.043	.240	.133	.041	
4.0	.273	.142	.042	.264	.138	.041	.247	.131	.039	.231	.124	.037	.215	.117	.036	
5.0	.248	.127	.037	.240	.123	.036	.224	.117	.034	.209	.110	.033	.195	.104	.031	
6.0	.227	.114	.033	.220	.111	.032	.205	.105	.031	.192	.100	.029	.179	.094	.028	
7.0	.209	.103	.029	.202	.101	.029	.189	.096	.028	.177	.091	.026	.165	.086	.025	
8.0	.194	.095	.027	.187	.092	.026	.175	.088	.025	.164	.083	.024	.153	.079	.023	
9.0	.180	.087	.024	.175	.085	.024	.163	.081	.023	.153	.077	.022	.143	.073	.021	
10.0	.169	.081	.022	.163	.079	.022	.153	.075	.021	.143	.071	.020	.134	.067	.019	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pf _c	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.323	.323	.323	.276	.276	.276	.188	.188	.188	.108	.108	.108	.035	.035	.035	
1.0	.320	.289	.261	.274	.248	.225	.187	.171	.156	.108	.099	.090	.035	.032	.029	
2.0	.314	.266	.227	.269	.229	.196	.184	.159	.137	.106	.092	.080	.034	.030	.026	
3.0	.306	.250	.205	.263	.216	.178	.180	.150	.125	.104	.087	.073	.033	.028	.024	
4.0	.299	.237	.191	.256	.205	.166	.176	.143	.117	.102	.084	.069	.033	.027	.023	
5.0	.291	.228	.181	.250	.197	.157	.172	.138	.111	.100	.081	.066	.032	.026	.022	
6.0	.284	.220	.174	.244	.190	.152	.168	.133	.107	.098	.078	.064	.031	.026	.021	
7.0	.277	.213	.169	.238	.185	.147	.164	.130	.104	.095	.076	.062	.031	.025	.021	
8.0	.270	.208	.165	.232	.180	.144	.161	.126	.102	.093	.075	.061	.030	.024	.020	
9.0	.263	.203	.162	.227	.176	.141	.157	.124	.100	.092	.073	.060	.030	.024	.020	
10.0	.257	.199	.160	.222	.173	.139	.154	.121	.099	.090	.072	.059	.029	.024	.020	



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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)

Uncorrected UGR Table

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	10.5	11.9	11.0	12.4	13.0	10.7	12.2	11.2	12.7	13.2
3H	12.2	13.5	12.7	14.0	14.6	13.2	14.5	13.7	15.0	15.6
4H	12.9	14.1	13.4	14.6	15.3	14.5	15.8	15.1	16.3	16.9
6H	13.3	14.5	13.9	15.0	15.7	15.9	17.1	16.5	17.7	18.3
8H	13.4	14.6	14.0	15.1	15.8	16.7	17.9	17.3	18.4	19.1
12H	13.5	14.6	14.1	15.2	15.8	17.6	18.7	18.2	19.3	20.0
4H 2H	11.5	12.8	12.1	13.3	13.9	11.7	12.9	12.2	13.5	14.1
3H	13.6	14.7	14.2	15.3	16.0	14.3	15.4	14.9	16.0	16.7
4H	14.5	15.5	15.1	16.1	16.8	15.8	16.8	16.4	17.4	18.1
6H	15.2	16.1	15.8	16.7	17.4	17.3	18.2	18.0	18.9	19.6
8H	15.4	16.2	16.0	16.9	17.6	18.2	19.1	18.9	19.7	20.5
12H	15.5	16.3	16.2	16.9	17.7	19.2	20.0	19.9	20.7	21.5
8H 4H	15.4	16.2	16.0	16.9	17.6	16.3	17.2	17.0	17.8	18.6
6H	16.5	17.2	17.1	17.9	18.6	18.2	18.9	18.9	19.6	20.4
8H	16.9	17.6	17.6	18.3	19.1	19.3	19.9	20.0	20.6	21.4
12H	17.3	17.8	18.0	18.5	19.4	20.5	21.1	21.2	21.8	22.6
12H 4H	15.6	16.3	16.2	17.0	17.8	16.4	17.2	17.1	17.9	18.6
6H	16.9	17.5	17.6	18.2	19.0	18.4	19.1	19.1	19.8	20.6
8H	17.6	18.1	18.3	18.8	19.7	19.6	20.2	20.3	20.9	21.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.5					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 252.9 lm Total Lamp Luminous Flux. (8log(F/F0) = -4.8)



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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)**UTILIZATION FACTORS TABLE**

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	46	33	26	45	33	25	43	32	25	18
0.80	55	42	33	54	41	33	51	40	32	24
1.00	63	50	41	61	49	40	58	49	39	31
1.25	70	57	48	68	56	47	64	53	46	36
1.50	75	63	54	73	61	53	68	58	51	41
2.00	83	72	63	80	70	62	74	66	59	47
2.50	88	77	69	84	75	67	78	70	64	51
3.00	92	82	74	88	79	72	81	74	69	55
4.00	97	88	82	93	85	79	86	80	75	60
5.00	100	93	86	96	89	84	88	83	79	64
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										



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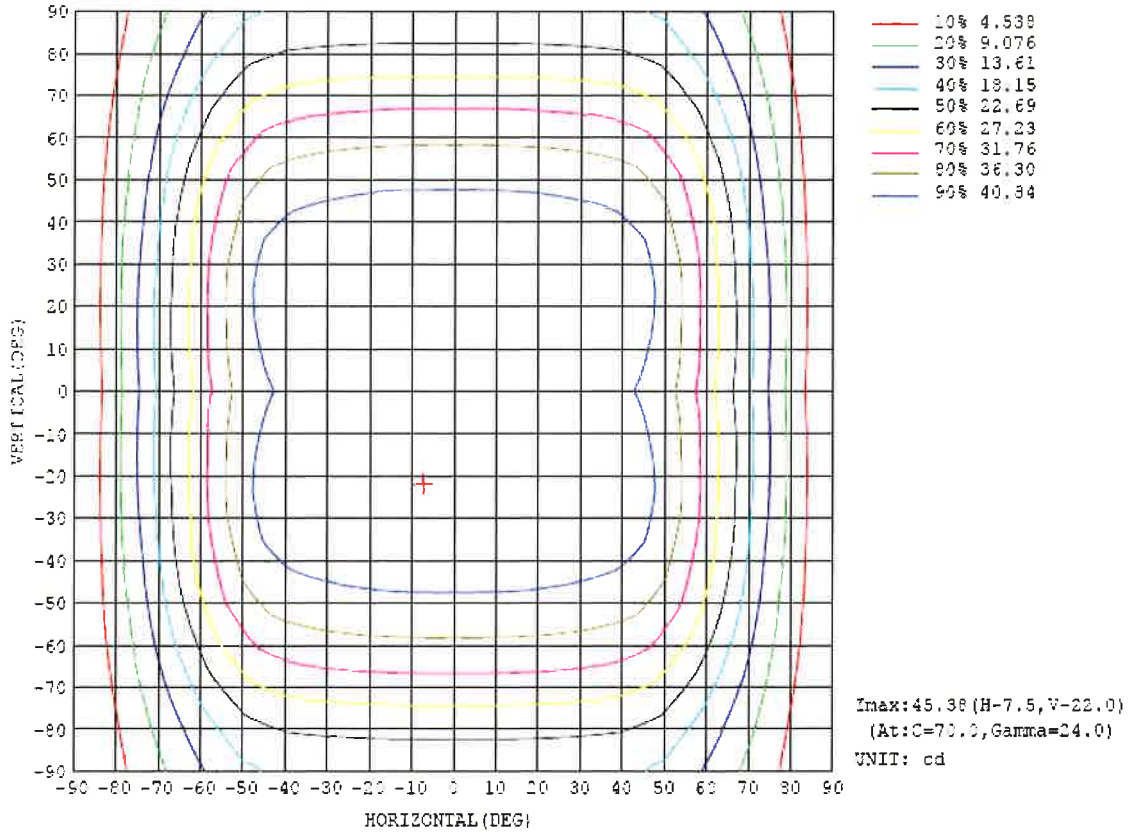
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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)
ISOCANDELA DIAGRAM



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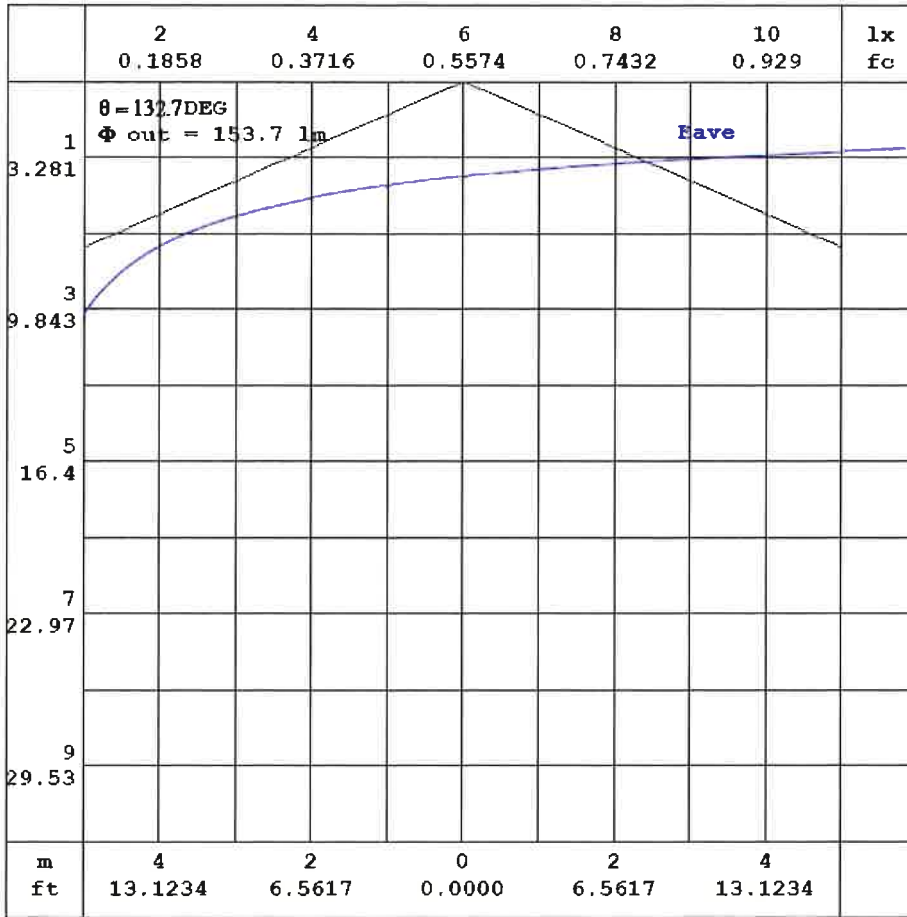
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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results Of The FULL ON)**AAI CURVES**

Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.



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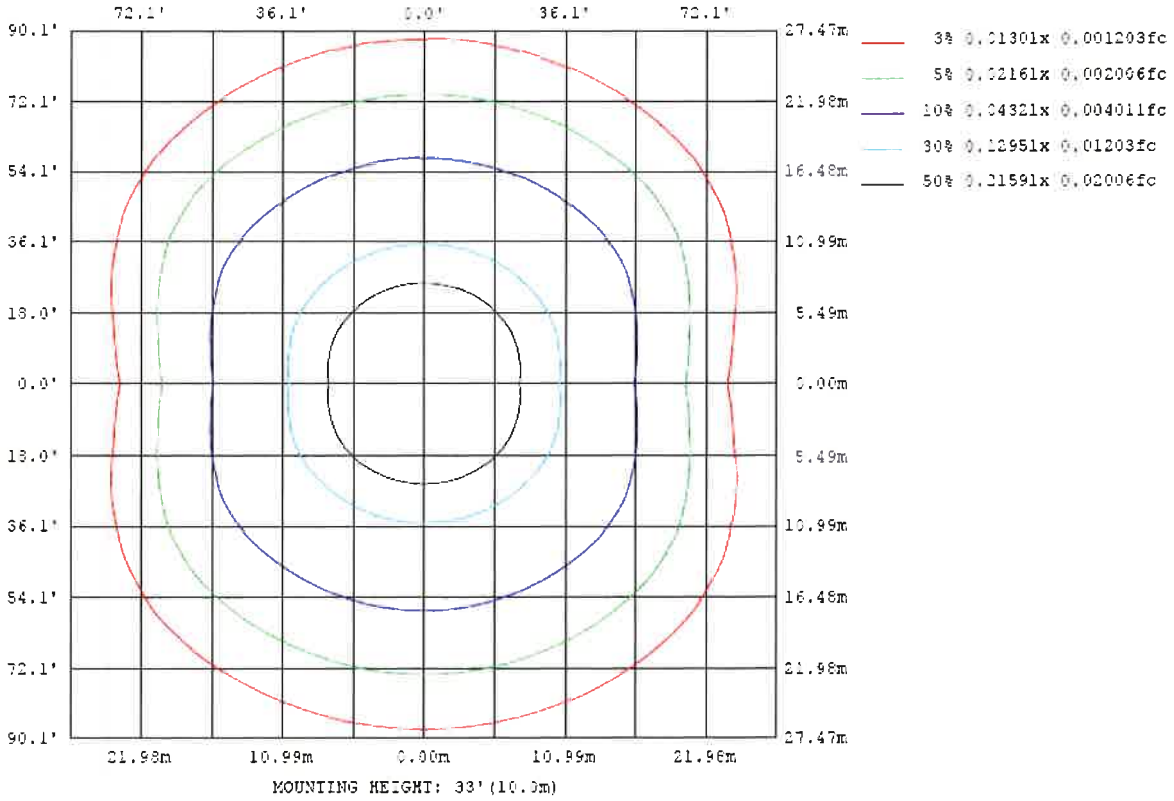
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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results Of the FULL ON)

ISOLUX DIAGRAM



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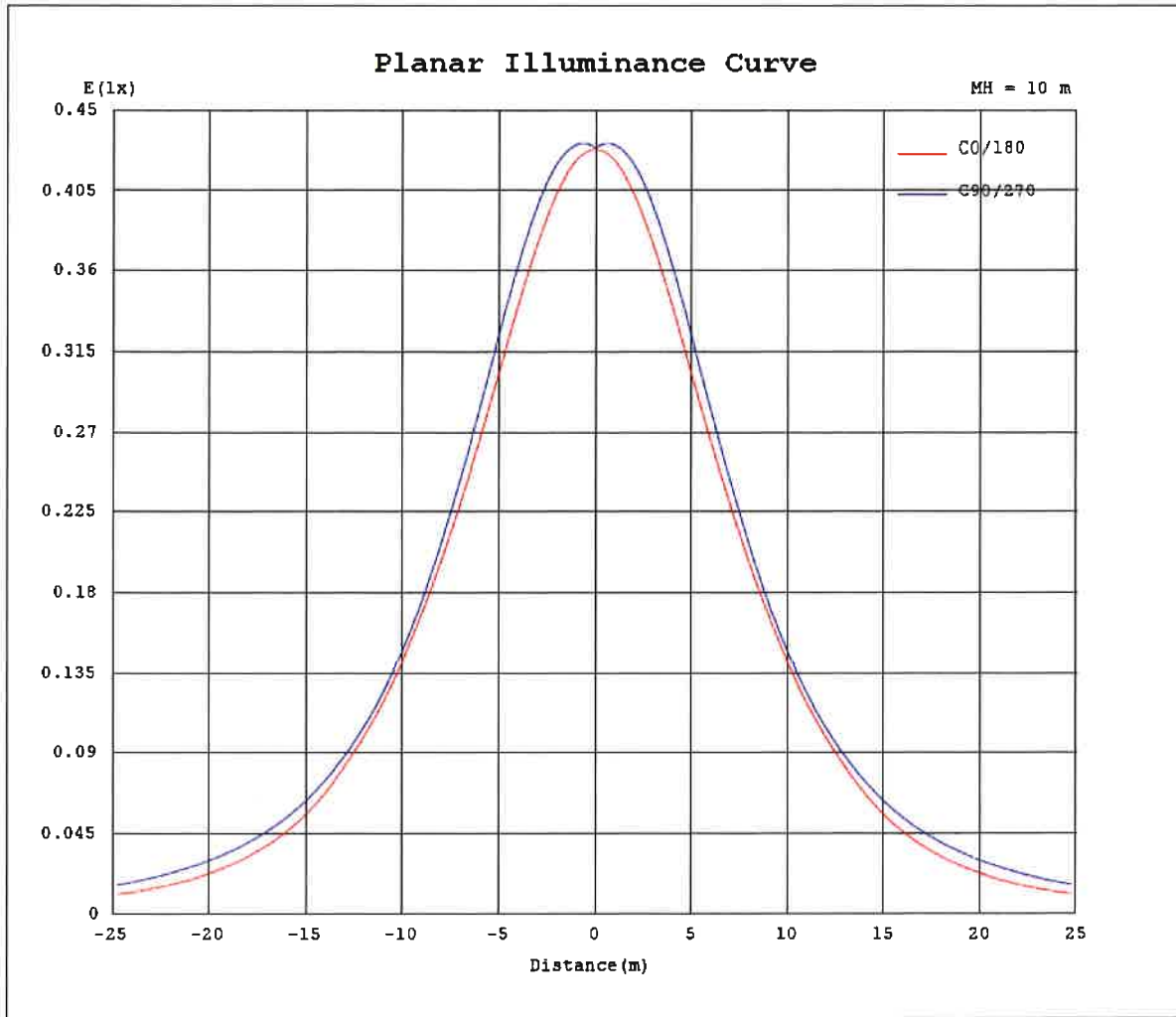
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2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of The FULL ON)



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2.2 FULL ON Spektrokolorimetrik Deneş Sonuřları (spectrocolorimetric Test Results of the FULL ON)**Elektriksel Ölçümler**

(Electrical Measurements)

Ölçülen Güç (W) (Input Power)	12,667
Ölçülen Gerilim (V) (Input Voltage)	48 VDC
Ölçülen Akım (A) (Input Current)	0,2639
Güç Faktörü (PF) (Power Factor)	-
Ölçülen Frekans (Hz) (Input Frequency)	-
Ortam Sıcaklığı / Bağıl Nem (Ambient Temperature / Relative Humidity)	25 °C 48% Rh
Stabilizasyon Süresi (Stabilization Time)	60 dk ±5dk

Spektrokolorimetrik Ölçüm Sonuřları

(Spectrocolorimetric Measurement Results)

Chrom x	0,3710
Chrom y	0,3621
Duv	-0,0042
Chrom u'	0,2247
Chrom v'	0,4935
Peak	449 nm
Dominant	581 nm
CCT	4166 K
Nominal CCT	4000 K
Ra(CRI)	80
R9	21
S/P Ratio	1,6
Preburning time	1 hr
Test Configuration	4π



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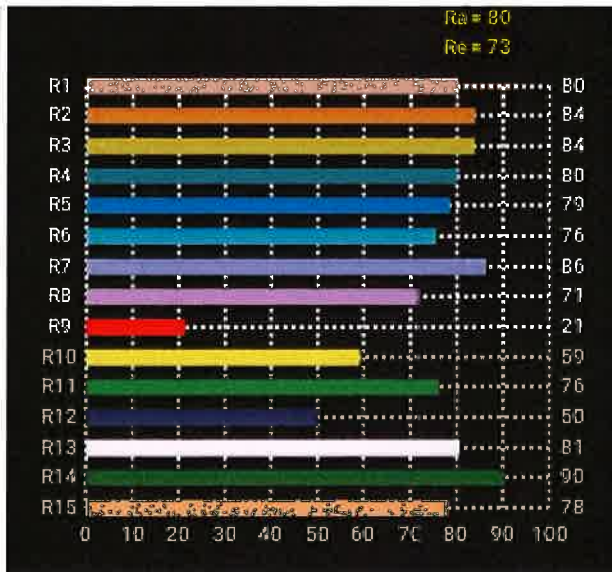
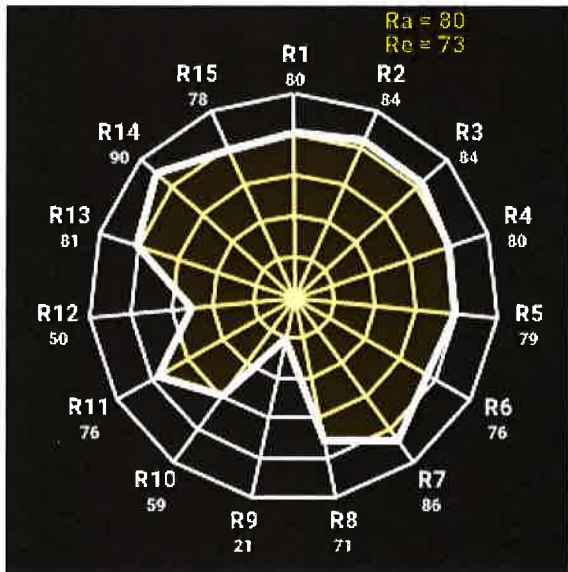
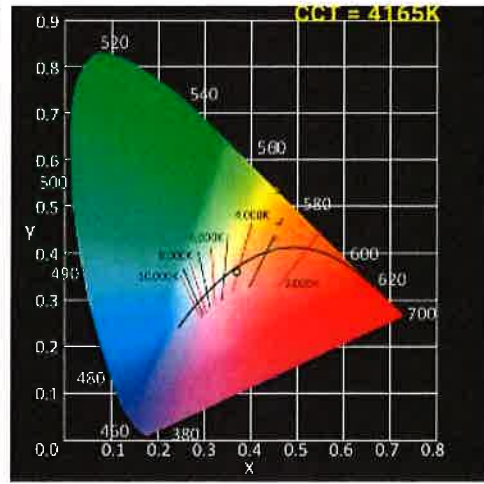
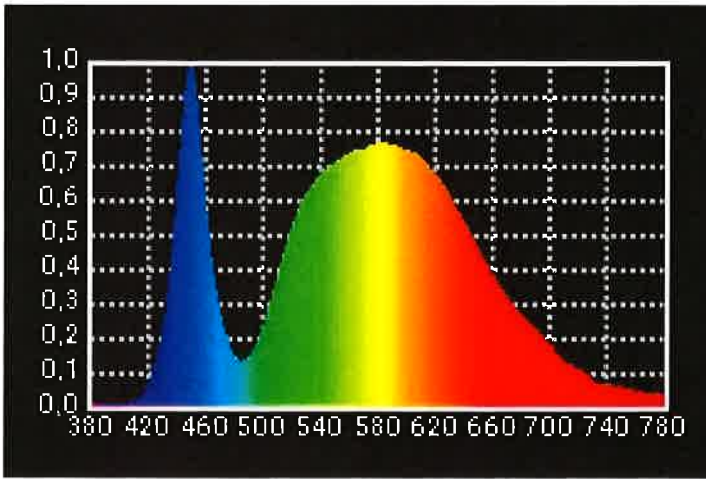
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2.2 FULL ON Spektrokolorimetrik Deney Sonuçları (Spectrocolorimetric Test Results of the FULL ON)

Spectral Power Distribution



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2.3 2700K Renk Deney Sonuçları (Test Results of the 2700K Color)

Elektriksel Ölçümler
(Electrical Measurements)

Ölçülen Güç (W) (Input Power)	7,214
Ölçülen Gerilim (V) (Input Voltage)	48 VDC
Ölçülen Akım (A) (Input Current)	0,1503
Güç Faktörü (PF) (Power Factor)	-
Ölçülen Frekans (Hz) (Input Frequency)	-
Ortam Sıcaklığı / Bağıl Nem (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
Stabilizasyon Süresi (Stabilization Time)	60 dk ±5dk

Fotometrik Ölçüm Sonuçları
(Photometric Measurement Results)

Toplam Işık Akısı (Total Luminous Flux) (lm)	111,35
Maksimum Işık Şiddeti (Max. Light Intensity) (cd)	20,44
Armatür Etkinliği (Luminaire Efficacy) (lm/W)	15,43



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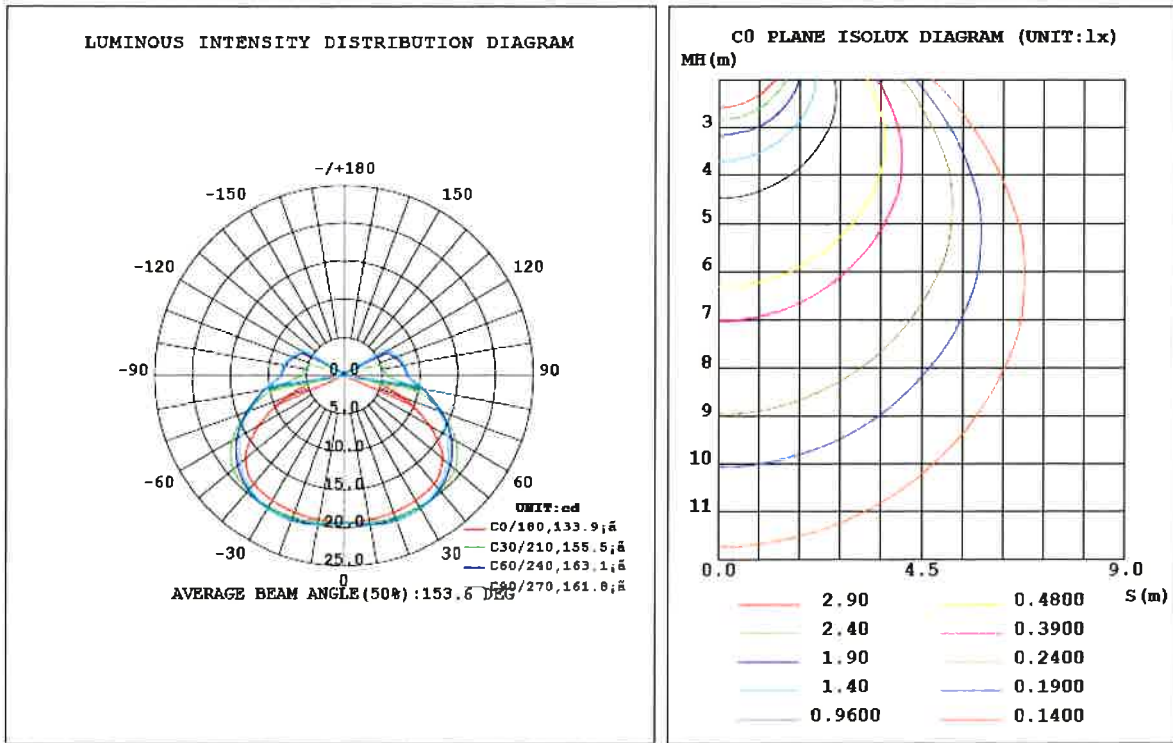
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)



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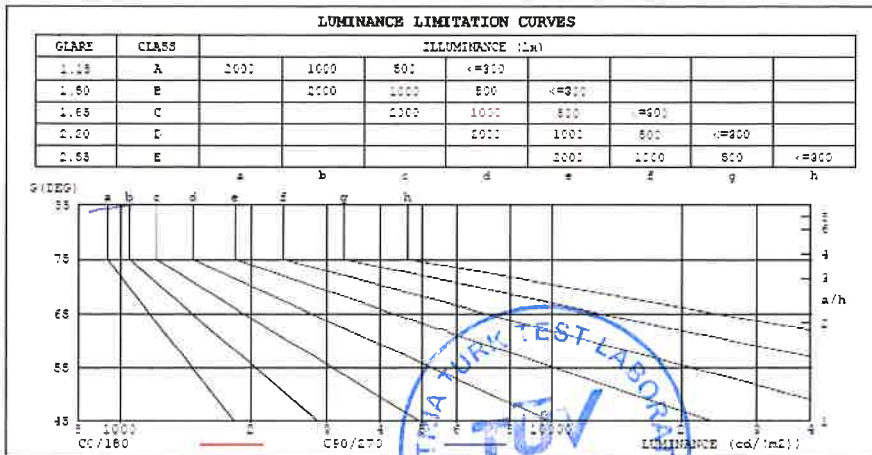
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	φ zone	φ total	llum, lamp
5	19.25	19.55	19.70	19.55	19.25	19.55	19.70	19.55	0-5	0.4651	0.4651	0.42,0.42
10	19.22	19.78	20.02	19.78	19.22	19.78	20.02	19.78	5-10	1.405	1.370	1.60,1.60
15	19.20	19.99	20.30	19.99	19.20	19.99	20.30	19.99	10-15	2.351	4.221	2.79,2.79
20	19.13	20.15	20.43	20.15	19.13	20.15	20.43	20.15	15-20	3.290	7.511	6.75,6.75
25	19.03	20.23	20.42	20.23	19.03	20.23	20.42	20.23	20-25	4.201	11.71	10.5,10.5
30	18.90	20.22	20.23	20.22	18.90	20.22	20.23	20.22	25-30	5.063	16.78	15.1,15.1
35	18.73	20.06	19.87	20.06	18.73	20.06	19.87	20.06	30-35	5.881	22.63	20.2,20.2
40	18.51	19.79	19.36	19.79	18.51	19.79	19.36	19.79	35-40	6.550	29.18	26.2,26.2
45	17.96	19.36	18.88	19.36	17.96	19.36	18.88	19.36	40-45	7.133	36.31	32.6,32.6
50	16.98	18.76	17.84	18.76	16.98	18.76	17.84	18.76	45-50	7.547	43.86	39.4,39.4
55	15.26	17.97	16.87	17.97	15.26	17.97	16.87	17.97	50-55	7.752	51.61	46.4,46.4
60	13.03	16.94	15.74	16.94	13.03	16.94	15.74	16.94	55-60	7.699	59.30	52.3,52.3
65	10.63	15.62	14.52	15.62	10.63	15.62	14.52	15.62	60-65	7.265	66.66	59.9,59.9
70	8.167	14.07	13.21	14.07	8.167	14.07	13.21	14.07	65-70	6.942	73.49	66.66
75	5.658	12.25	11.83	12.25	5.658	12.25	11.83	12.25	70-75	6.116	79.61	71.5,71.5
80	2.264	10.60	10.49	10.60	2.264	10.60	10.49	10.60	75-80	5.254	84.96	76.2,76.2
85	1.277	8.943	9.246	8.943	1.277	8.943	9.246	8.943	80-85	4.370	89.23	80.1,80.1
90	0	7.801	8.465	7.801	0	7.801	8.465	7.801	85-90	3.640	92.57	82.4,82.4
95	0	7.586	8.286	7.586	0	7.586	8.286	7.586	90-95	3.323	96.20	86.4,86.4
100	0	7.283	8.052	7.283	0	7.283	8.052	7.283	95-100	3.197	99.39	89.9,89.9
105	0	6.892	7.756	6.892	0	6.892	7.756	6.892	100-105	2.992	102.4	92.9
110	0	6.440	7.404	6.440	0	6.440	7.404	6.440	105-110	2.694	105.1	94.4,94.4
115	0	4.887	7.005	4.887	0	4.887	7.005	4.887	110-115	2.296	107.4	96.4,96.4
120	0	1.953	6.562	1.953	0	1.953	6.562	1.953	115-120	1.772	109.2	98.8
125	0	1.529	2.663	1.529	0	1.529	2.663	1.529	120-125	1.019	110.2	98.9,98.9
130	0	1.182	0.7003	1.182	0	1.182	0.7003	1.182	125-130	0.4207	110.6	99.3,99.3
135	0	0.8951	0.6062	0.8951	0	0.8951	0.6062	0.8951	130-135	0.2872	110.9	99.6,99.6
140	0	0.6534	0.5024	0.6534	0	0.6534	0.5024	0.6534	135-140	0.1989	111.1	99.8,99.8
145	0	0.4475	0.4125	0.4475	0	0.4475	0.4125	0.4475	140-145	0.1305	111.2	99.9,99.9
150	0	0.2746	0.3176	0.2746	0	0.2746	0.3176	0.2746	145-150	0.0786	111.3	99.9,99.9
155	0	0.1296	0.2148	0.1296	0	0.1296	0.2148	0.1296	150-155	0.0432	111.3	100,100
160	0	0.0200	0.1065	0.0200	0	0.0200	0.1065	0.0200	155-160	0.0164	111.3	100,100
165	0	0	0.0010	0	0	0.0010	0	0.0010	160-165	0.0021	111.2	100,100
170	0	0	0	0	0	0	0	0	165-170	0.0000	111.2	100,100
175	0	0	0	0	0	0	0	0	170-175	0	111.2	100,100
180	0	0	0	0	0	0	0	0	175-180	0	111.3	100,100



LUMINANCE cd/m2:

G(DEG)	C0/180	C90/270
85	147	1061
90	155	604
75	215	457
70	238	356
65	252	343
60	261	315
55	266	294
50	264	278
45	254	264

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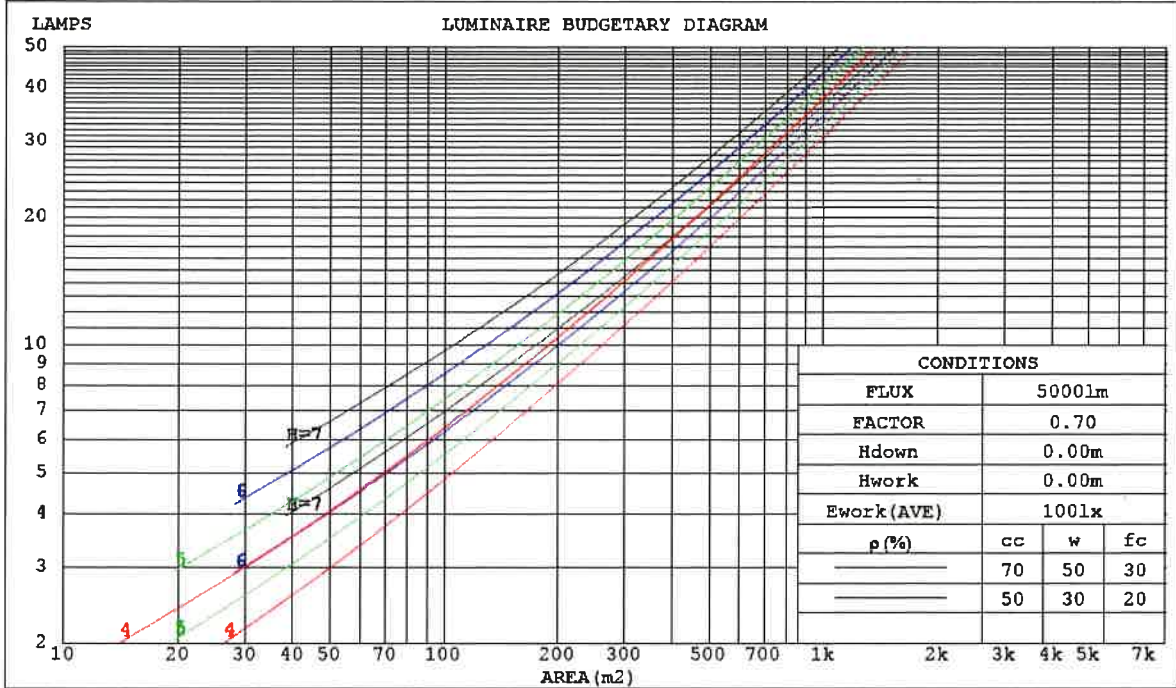
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.15	1.15	1.15	1.10	1.10	1.10	1.02	1.02	1.02	.94	.94	.94	.87	.87	.87	.83
1.0	.96	.90	.85	.92	.87	.82	.84	.80	.77	.77	.74	.71	.71	.69	.66	.63
2.0	.81	.73	.66	.78	.71	.64	.72	.66	.60	.66	.61	.56	.60	.56	.53	.50
3.0	.70	.61	.53	.67	.59	.52	.62	.55	.49	.57	.51	.46	.52	.47	.43	.40
4.0	.61	.52	.44	.59	.50	.43	.54	.46	.40	.50	.43	.38	.46	.40	.36	.33
5.0	.54	.44	.37	.52	.43	.36	.48	.40	.34	.44	.37	.32	.41	.35	.30	.28
6.0	.48	.39	.32	.46	.37	.31	.43	.35	.29	.39	.33	.28	.36	.31	.26	.24
7.0	.43	.34	.28	.42	.33	.27	.39	.31	.26	.36	.29	.24	.33	.27	.23	.21
8.0	.39	.30	.24	.38	.29	.24	.35	.28	.22	.33	.26	.21	.30	.24	.20	.18
9.0	.36	.27	.21	.34	.26	.21	.32	.25	.20	.30	.23	.19	.28	.22	.18	.16
10.0	.33	.25	.19	.32	.24	.19	.30	.23	.18	.27	.21	.17	.26	.20	.16	.14



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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

WEC AND CCEC

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.392	.223	.071	.379	.216	.069	.356	.204	.065	.335	.193	.062	.316	.183	.059	
2.0	.341	.187	.057	.330	.182	.056	.309	.172	.053	.290	.163	.051	.272	.154	.049	
3.0	.304	.162	.048	.294	.157	.047	.275	.149	.045	.257	.141	.043	.241	.133	.041	
4.0	.273	.142	.042	.264	.138	.041	.247	.131	.039	.231	.124	.037	.216	.118	.036	
5.0	.248	.126	.037	.240	.123	.036	.224	.117	.034	.210	.111	.033	.196	.105	.032	
6.0	.227	.114	.033	.220	.111	.032	.206	.105	.031	.192	.100	.029	.180	.095	.028	
7.0	.209	.103	.029	.202	.101	.029	.190	.096	.028	.177	.091	.026	.166	.086	.025	
8.0	.194	.095	.027	.188	.092	.026	.176	.088	.025	.165	.083	.024	.154	.079	.023	
9.0	.180	.087	.024	.175	.085	.024	.164	.081	.023	.154	.077	.022	.144	.073	.021	
10.0	.169	.081	.022	.163	.079	.022	.153	.075	.021	.144	.071	.020	.135	.068	.019	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.317	.317	.317	.271	.271	.271	.185	.185	.185	.106	.106	.106	.034	.034	.034	
1.0	.313	.283	.255	.268	.243	.220	.183	.167	.152	.106	.097	.088	.034	.031	.029	
2.0	.307	.260	.220	.263	.224	.190	.180	.155	.133	.104	.090	.078	.033	.029	.025	
3.0	.300	.244	.199	.257	.210	.172	.177	.146	.121	.102	.085	.071	.033	.028	.023	
4.0	.292	.231	.184	.251	.200	.160	.173	.139	.113	.100	.082	.067	.032	.027	.022	
5.0	.285	.221	.175	.245	.191	.152	.168	.134	.107	.098	.079	.064	.031	.026	.021	
6.0	.277	.213	.168	.238	.185	.146	.164	.129	.103	.095	.076	.061	.031	.025	.020	
7.0	.270	.207	.162	.232	.179	.142	.161	.126	.100	.093	.074	.060	.030	.024	.020	
8.0	.263	.201	.159	.227	.175	.138	.157	.123	.098	.091	.072	.058	.030	.024	.019	
9.0	.257	.196	.156	.221	.171	.136	.153	.120	.096	.089	.071	.057	.029	.023	.019	
10.0	.251	.192	.153	.216	.167	.134	.150	.118	.095	.088	.069	.057	.028	.023	.019	



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ÖLÇÜM RAPORU MEASUREMENT REPORT

2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

Uncorrected UGR Table

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	7.7	9.2	8.2	9.7	10.2	8.0	9.4	8.5	9.9	10.4
3H	9.4	10.8	10.0	11.3	11.9	10.4	11.7	10.9	12.3	12.8
4H	10.1	11.3	10.6	11.9	12.5	11.7	13.0	12.3	13.5	14.1
6H	10.5	11.7	11.1	12.2	12.9	13.1	14.3	13.7	14.8	15.5
8H	10.6	11.8	11.2	12.3	13.0	13.9	15.0	14.4	15.6	16.2
12H	10.7	11.8	11.3	12.4	13.0	14.8	15.9	15.3	16.4	17.1
4H 2H	8.8	10.0	9.3	10.6	11.2	8.9	10.2	9.4	10.7	11.3
3H	10.8	11.9	11.4	12.5	13.2	11.5	12.6	12.1	13.2	13.8
4H	11.7	12.7	12.3	13.3	14.0	13.0	14.0	13.6	14.6	15.2
6H	12.3	13.2	13.0	13.9	14.6	14.5	15.4	15.1	16.0	16.8
8H	12.5	13.4	13.2	14.0	14.8	15.4	16.2	16.0	16.9	17.6
12H	12.7	13.4	13.3	14.1	14.8	16.4	17.1	17.0	17.8	18.5
8H 4H	12.6	13.4	13.2	14.0	14.8	13.5	14.4	14.2	15.0	15.7
6H	13.6	14.3	14.3	15.0	15.8	15.4	16.1	16.0	16.8	17.5
8H	14.1	14.7	14.8	15.4	16.2	16.4	17.0	17.1	17.7	18.5
12H	14.4	14.9	15.1	15.6	16.5	17.6	18.2	18.3	18.9	19.7
12H 4H	12.7	13.5	13.4	14.2	14.9	13.6	14.4	14.3	15.0	15.8
6H	14.0	14.7	14.7	15.4	16.2	15.6	16.2	16.3	16.9	17.7
8H	14.7	15.2	15.4	15.9	16.8	16.7	17.3	17.4	18.0	18.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.5					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 111.3 lm Total Lamp Luminous Flux. (8log(F/F0) = -7.6)



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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

UTILIZATION FACTORS TABLE

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	46	33	26	45	33	26	43	32	25	19
0.80	55	42	34	54	41	33	51	40	33	25
1.00	63	50	41	62	49	41	58	50	40	31
1.25	71	57	49	68	56	48	64	54	46	37
1.50	76	63	54	73	62	53	69	59	52	41
2.00	83	72	63	80	70	62	75	66	60	48
2.50	88	78	69	85	75	68	79	71	65	52
3.00	92	82	75	89	80	73	82	75	69	56
4.00	97	89	82	93	86	80	86	80	75	61
5.00	100	93	87	96	90	84	89	84	79	65
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			



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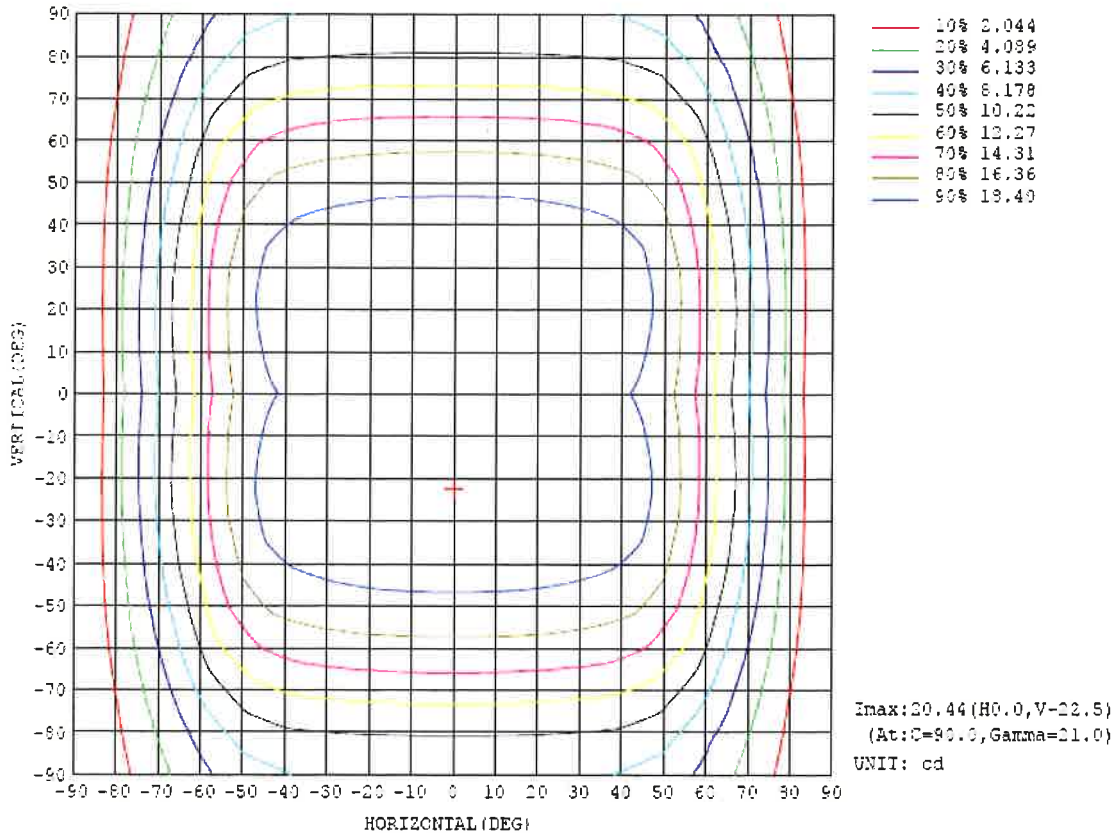
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

ISOCANDELA DIAGRAM



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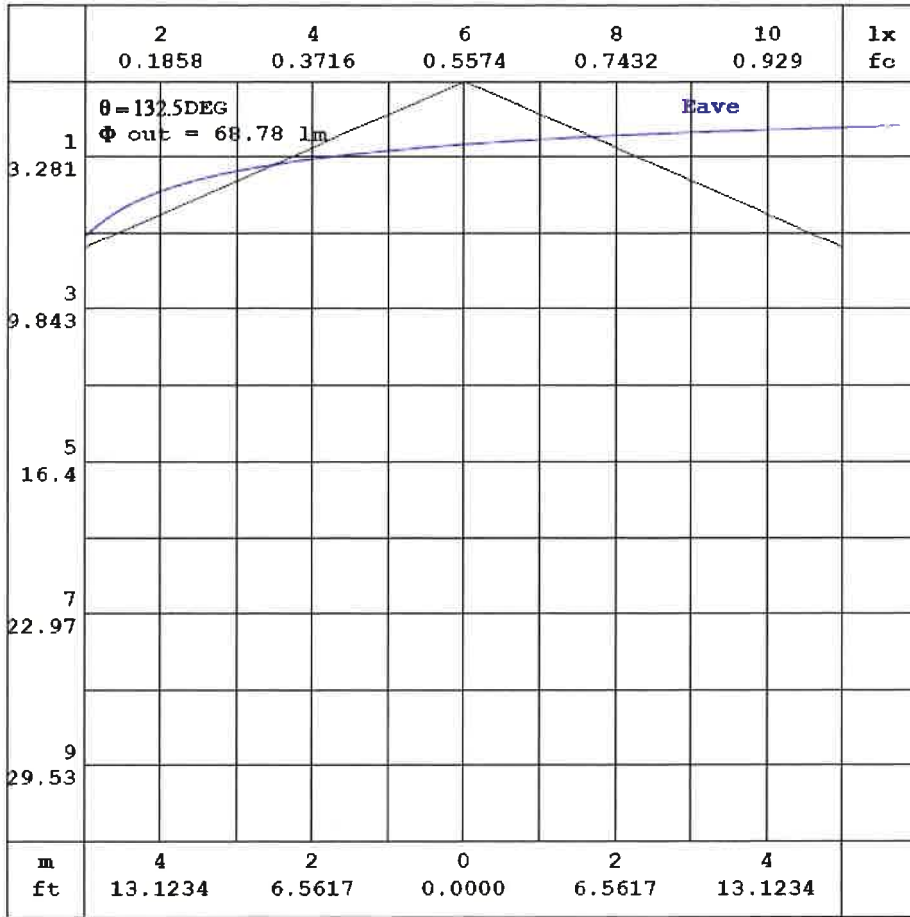
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**AAI CURVES**

Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.



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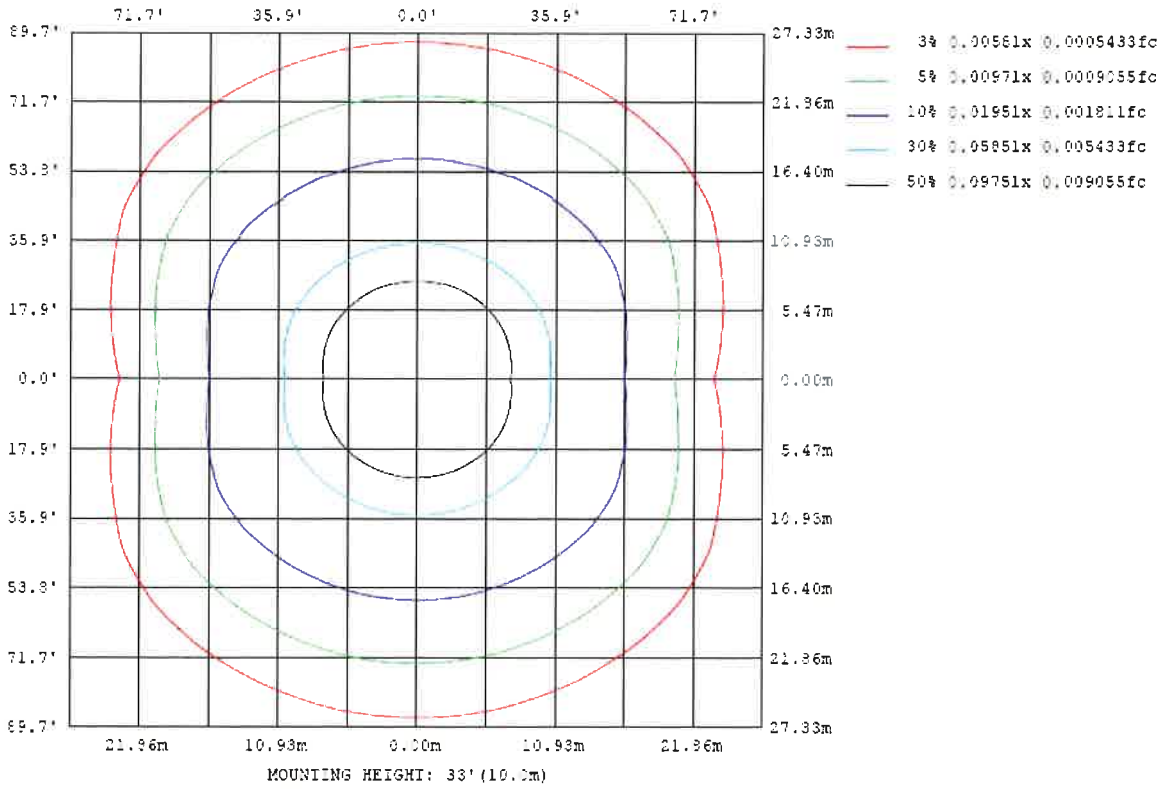
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)

ISOLUX DIAGRAM



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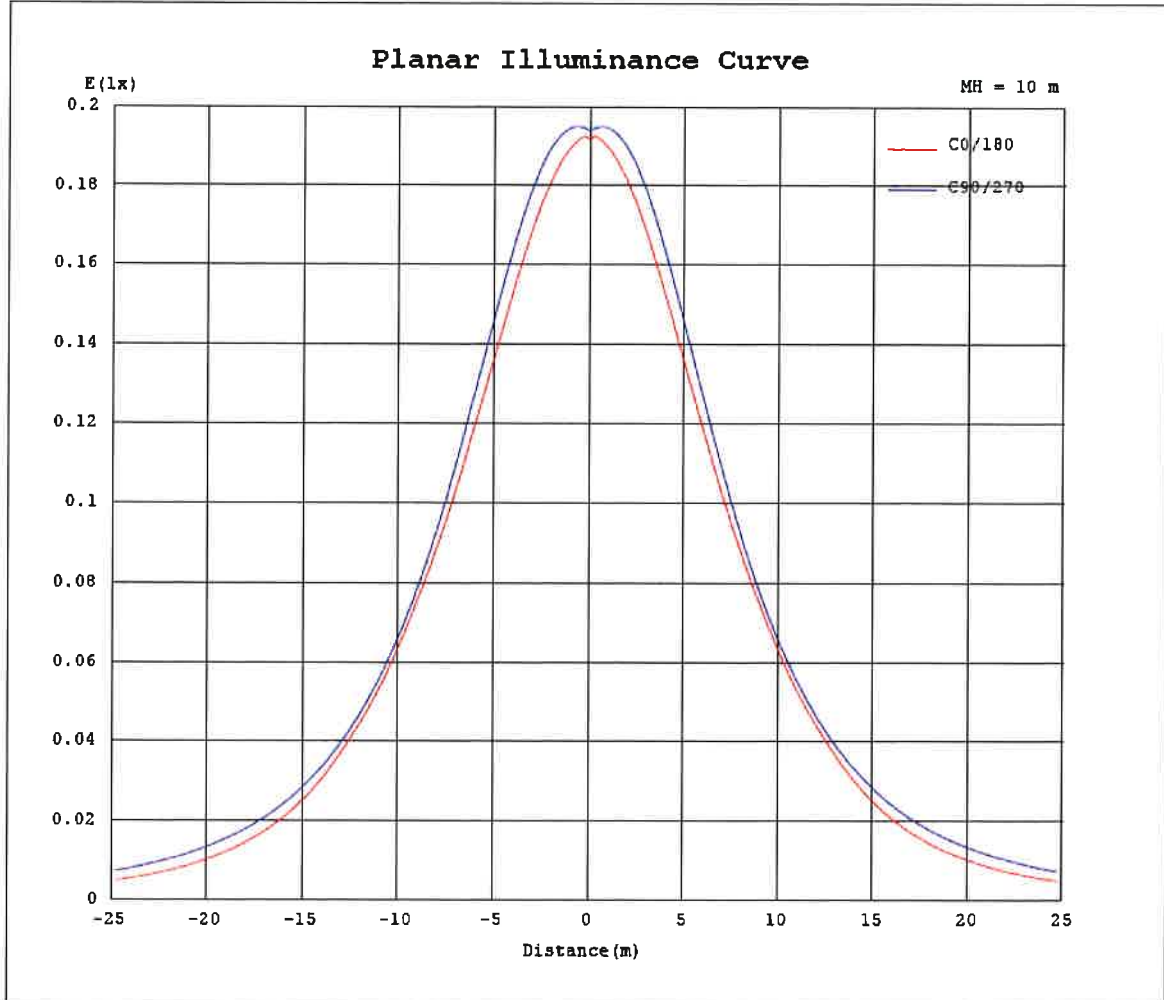
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2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)



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MEASUREMENT REPORT**2.4 2700K Renk Spektrokolorimetrik Deney Sonuçları** (spectrocolorimetric Test Results of the 2700K color)**Elektriksel Ölçümler**

(Electrical Measurements)

Ölçülen Güç (W) (Input Power)	7,214
Ölçülen Gerilim (V) (Input Voltage)	48 VDC
Ölçülen Akım (A) (Input Current)	0,1503
Güç Faktörü (PF) (Power Factor)	-
Ölçülen Frekans (Hz) (Input Frequency)	-
Ortam Sıcaklığı / Bağıl Nem (Ambient Temperature / Relative Humidity)	25 °C 48% Rh
Stabilizasyon Süresi (Stabilization Time)	60 dk ±5dk

Spektrokolorimetrik Ölçüm Sonuçları

(Spectrocolorimetric Measurement Results)

Chrom x	0,4585
Chrom y	0,4135
Duv	0,0016
Chrom u'	0,2604
Chrom v'	0,5282
Peak	609 nm
Dominant	584 nm
CCT	2741 K
Nominal CCT	-
Ra(CRI)	78
R9	15
S/P Ratio	1,1
Preburning time	1 hr
Test Configuration	4π



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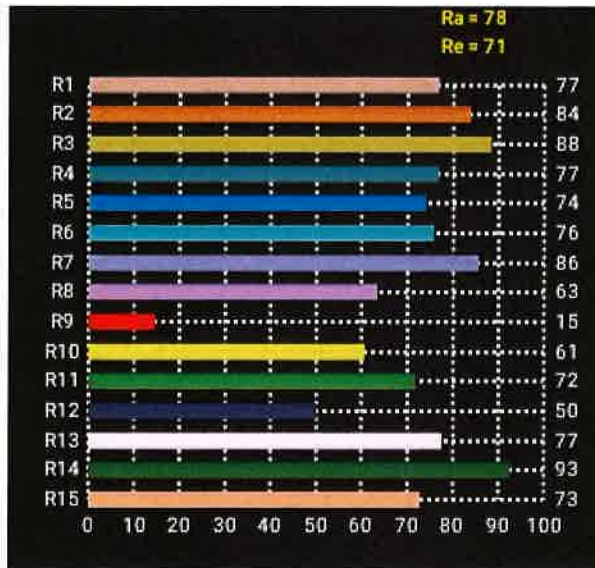
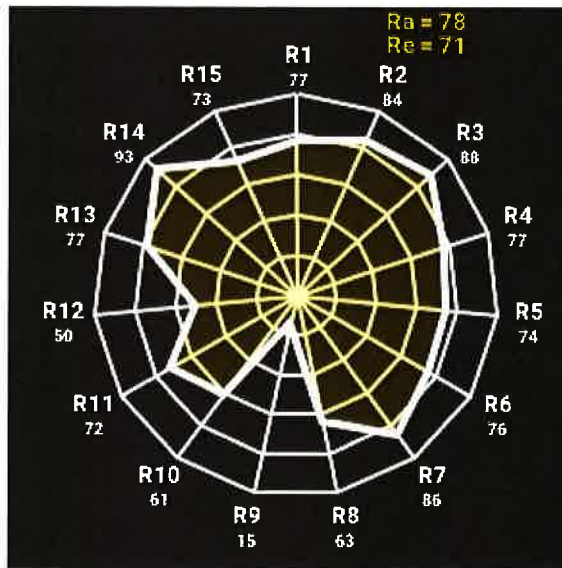
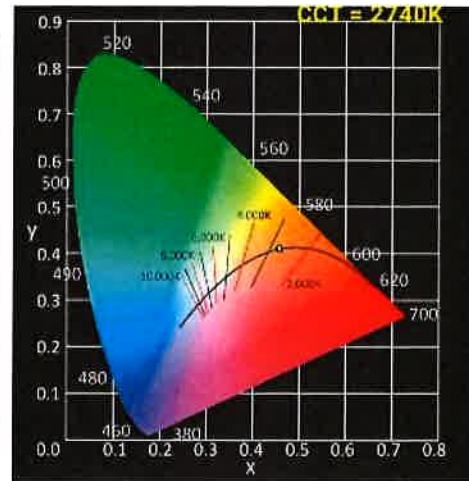
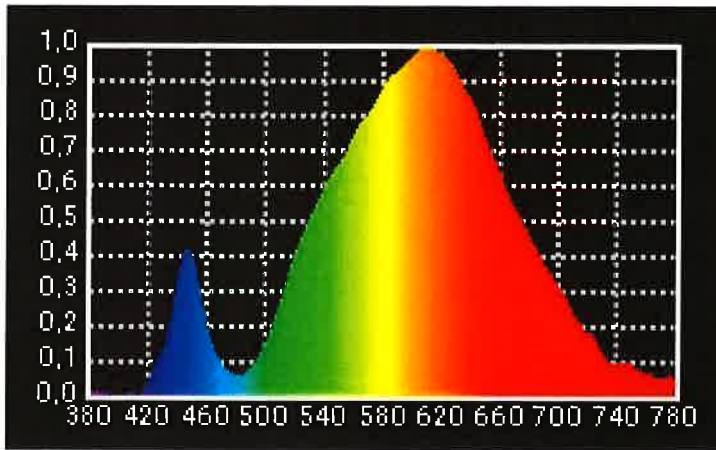
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MEASUREMENT REPORT

2.4 2700K Renk Spektrokolorimetrik Deney Sonuçları (spectrocolorimetric Test Results of the 2700K color)

Spectral Power Distribution



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2.5 6500K Renk Deney Sonuçları (Test Results of the 6500K Color)

Elektriksel Ölçümler

(Electrical Measurements)

Ölçülen Güç (W) (Input Power)	7,224
Ölçülen Gerilim (V) (Input Voltage)	48 VDC
Ölçülen Akım (A) (Input Current)	0,1505
Güç Faktörü (PF) (Power Factor)	-
Ölçülen Frekans (Hz) (Input Frequency)	-
Ortam Sıcaklığı / Bağıl Nem (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
Stabilizasyon Süresi (Stabilization Time)	60 dk ±5dk

Fotometrik Ölçüm Sonuçları

(Photometric Measurement Results)

Toplam Işık Akısı (Total Luminous Flux) (lm)	141,41
Maksimum Işık Şiddeti (Max. Light Intensity) (cd)	25,31
Armatür Etkinliği (Luminaire Efficacy) (lm/W)	19,57



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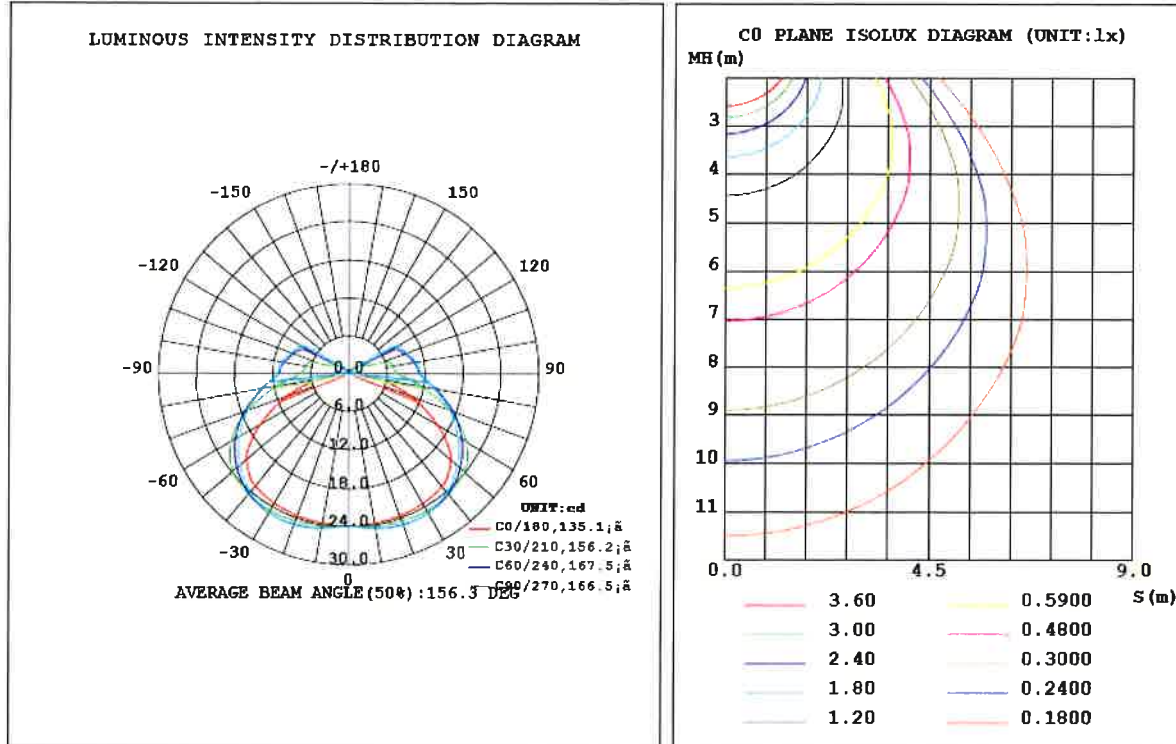
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2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)



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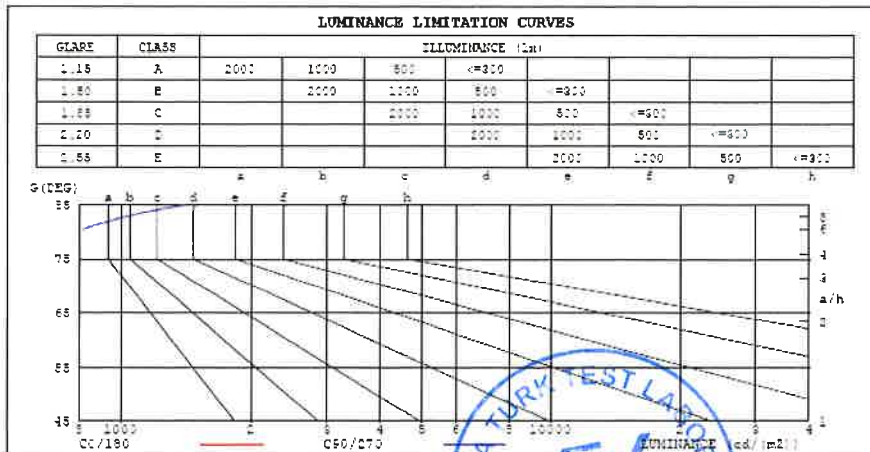
ÖLÇÜM RAPORU
MEASUREMENT REPORT

2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)

**ZONAL FLUX DIAGRAM
AND LUMINANCE LIMITATION CURVES**

ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	Φ zone	Φ total	Φlum, lamp
5	23.76	24.11	24.28	24.11	23.76	24.11	24.25	24.11	0- 5	0.5727	0.5727	0.41,0.41
10	23.74	24.41	24.70	24.41	23.74	24.41	24.70	24.41	5- 10	1.734	2.307	1.62,1.62
15	23.70	24.69	25.06	24.69	23.70	24.69	25.06	24.69	10- 15	2.904	5.211	2.69,2.69
20	23.62	24.91	25.27	24.91	23.62	24.91	25.27	24.91	15- 20	4.047	9.258	6.56,6.56
25	23.52	25.04	25.29	25.04	23.52	25.04	25.29	25.04	20- 25	5.199	14.457	10.2,10.2
30	23.38	25.05	25.11	25.05	23.38	25.05	25.11	25.05	25- 30	6.274	20.731	14.7,14.7
35	23.19	24.92	24.73	24.92	23.19	24.92	24.73	24.92	30- 35	7.247	28.02	19.0,19.0
40	22.91	24.65	24.15	24.65	22.91	24.65	24.15	24.65	35- 40	8.150	36.17	25.6,25.6
45	22.21	24.17	23.25	24.17	22.21	24.17	23.25	24.17	40- 45	8.891	45.06	31.9,31.9
50	21.00	23.49	22.36	23.49	21.00	23.49	22.36	23.49	45- 50	9.423	54.48	38.6,38.6
55	18.87	22.56	21.22	22.56	18.87	22.56	21.22	22.56	50- 55	9.699	64.18	45.4,45.4
60	16.12	21.35	19.91	21.35	16.12	21.35	19.91	21.35	55- 60	9.647	74.83	52.2,52.2
65	13.20	19.79	18.44	19.79	13.20	19.79	18.44	19.79	60- 65	9.292	86.12	58.0,58.0
70	10.49	17.92	16.88	17.92	10.49	17.92	16.88	17.92	65- 70	8.664	97.77	64.9,64.9
75	7.244	15.85	15.22	15.85	7.244	15.85	15.22	15.85	70- 75	7.806	109.58	70.4,70.4
80	4.161	13.74	12.61	13.74	4.161	13.74	12.61	13.74	75- 80	6.762	122.34	75.2,75.2
85	1.706	11.81	12.19	11.81	1.706	11.81	12.19	11.81	80- 85	5.713	136.05	79.2,79.2
90	0.0227	10.40	11.22	10.40	0.0227	10.40	11.22	10.40	85- 90	4.823	150.23	82.7,82.7
95	0	10.07	10.98	10.07	0	10.07	10.98	10.07	90- 95	4.416	164.82	85.8,85.8
100	0	9.607	10.67	9.607	0	9.607	10.67	9.607	95-100	4.245	179.56	88.0,88.0
105	0	9.092	10.23	9.092	0	9.092	10.23	9.092	100-105	2.964	194.52	91.6,91.6
110	0	8.501	9.719	8.501	0	8.501	9.719	8.501	105-110	2.560	209.71	94.1,94.1
115	0	8.066	9.194	8.066	0	8.066	9.194	8.066	110-115	2.031	225.14	96.2,96.2
120	0	2.627	8.615	2.627	0	2.627	8.615	2.627	115-120	2.344	240.78	97.9,97.9
125	0	2.064	8.421	2.064	0	2.064	8.421	2.064	120-125	1.347	256.13	98.9,98.9
130	0	1.610	0.9625	1.610	0	1.610	0.9625	1.610	125-130	0.5727	271.31	99.9,99.9
135	0	1.236	0.8997	1.236	0	1.236	0.8997	1.236	130-135	0.5955	286.23	99.9,99.9
140	0	0.9169	0.7060	0.9169	0	0.9169	0.7060	0.9169	135-140	0.2767	299.9	99.7,99.7
145	0	0.6294	0.5897	0.6294	0	0.6294	0.5897	0.6294	140-145	0.1825	313.2	99.9,99.9
150	0	0.3493	0.4682	0.3493	0	0.3493	0.4682	0.3493	145-150	0.1122	326.1	99.9,99.9
155	0	0.1831	0.2604	0.1831	0	0.1831	0.2604	0.1831	150-155	0.0570	338.4	100,100
160	0	0.0592	0.1106	0.0592	0	0.0592	0.1106	0.0592	155-160	0.0204	349.4	100,100
165	0	0	0.0196	0	0	0	0.0196	0	160-165	0.0050	359.4	100,100
170	0	0	0	0	0	0	0	0	165-170	0.0001	368.4	100,100
175	0	0	0	0	0	0	0	0	170-175	0	376.4	100,100
180	0	0	0	0	0	0	0	0	175-180	0	383.4	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/m²

G(DEG)	C0/180	C90/270
85	196	1999
80	240	784
75	275	588
70	307	494
65	312	436
60	322	388
55	329	370
50	327	347
45	314	330

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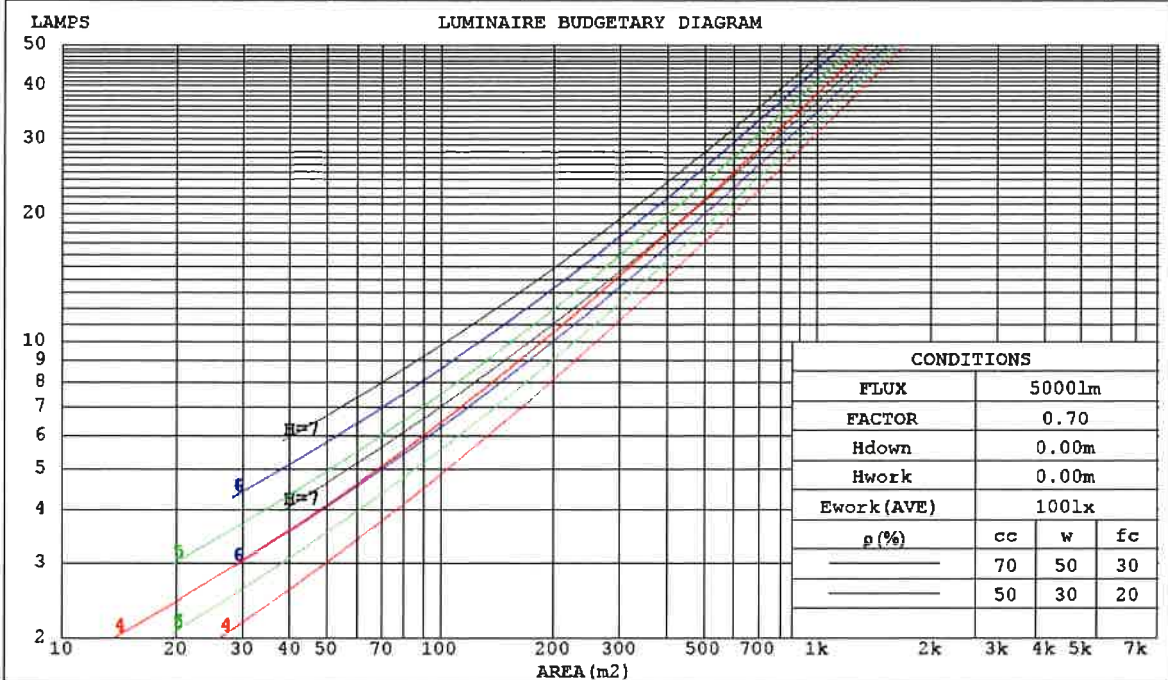
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ÖLÇÜM RAPORU
MEASUREMENT REPORT

2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	
p _w	20%			20%			20%			20%			20%			0
p _{fc}	20%			20%			20%			20%			20%			
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.15	1.15	1.15	1.10	1.10	1.10	1.01	1.01	1.01	.93	.93	.93	.86	.86	.86	.83
1.0	.95	.90	.85	.91	.86	.82	.84	.80	.76	.77	.74	.71	.70	.68	.65	.62
2.0	.81	.73	.66	.77	.70	.64	.71	.65	.60	.65	.60	.56	.59	.56	.52	.49
3.0	.70	.60	.53	.67	.58	.51	.61	.54	.48	.56	.50	.45	.51	.46	.42	.39
4.0	.61	.51	.44	.58	.49	.42	.54	.46	.40	.49	.43	.38	.45	.40	.35	.32
5.0	.54	.44	.37	.52	.43	.36	.47	.40	.34	.44	.37	.32	.40	.34	.30	.27
6.0	.48	.38	.31	.46	.37	.31	.42	.35	.29	.39	.32	.27	.36	.30	.26	.23
7.0	.43	.34	.27	.41	.33	.27	.38	.31	.25	.35	.29	.24	.32	.27	.22	.20
8.0	.39	.30	.24	.38	.29	.23	.35	.27	.22	.32	.26	.21	.30	.24	.20	.18
9.0	.36	.27	.21	.34	.26	.21	.32	.25	.20	.29	.23	.19	.27	.22	.18	.16
10.0	.33	.24	.19	.31	.24	.18	.29	.22	.18	.27	.21	.17	.25	.20	.16	.14



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ÖLÇÜM RAPORU MEASUREMENT REPORT

2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)

WEC AND CCEC

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pf _c	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.395	.225	.071	.382	.218	.069	.359	.206	.066	.337	.195	.062	.317	.184	.059	
2.0	.343	.188	.058	.332	.183	.056	.310	.173	.054	.291	.163	.051	.273	.154	.049	
3.0	.305	.162	.049	.294	.158	.047	.275	.149	.045	.257	.141	.043	.241	.133	.041	
4.0	.274	.142	.042	.265	.139	.041	.247	.131	.039	.231	.124	.037	.216	.117	.036	
5.0	.249	.127	.037	.240	.123	.036	.224	.117	.034	.210	.111	.033	.196	.105	.031	
6.0	.227	.114	.033	.220	.111	.032	.205	.105	.031	.192	.100	.029	.179	.094	.028	
7.0	.209	.104	.029	.203	.101	.029	.189	.096	.028	.177	.091	.026	.165	.086	.025	
8.0	.194	.095	.027	.188	.092	.026	.176	.088	.025	.164	.083	.024	.153	.079	.023	
9.0	.181	.087	.024	.175	.085	.024	.164	.081	.023	.153	.077	.022	.143	.073	.021	
10.0	.169	.081	.022	.163	.079	.022	.153	.075	.021	.143	.071	.020	.134	.068	.019	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pf _c	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.323	.323	.323	.276	.276	.276	.188	.188	.188	.108	.108	.108	.035	.035	.035	
1.0	.319	.289	.261	.273	.248	.225	.187	.170	.155	.108	.099	.090	.034	.032	.029	
2.0	.313	.266	.226	.268	.229	.195	.184	.158	.136	.106	.092	.080	.034	.030	.026	
3.0	.306	.249	.204	.262	.215	.177	.180	.149	.124	.104	.087	.073	.033	.028	.024	
4.0	.298	.237	.190	.256	.205	.165	.176	.143	.116	.102	.084	.069	.033	.027	.023	
5.0	.291	.227	.180	.250	.197	.157	.172	.137	.111	.100	.081	.066	.032	.026	.022	
6.0	.283	.219	.174	.243	.190	.151	.168	.133	.107	.097	.078	.064	.031	.026	.021	
7.0	.276	.213	.168	.238	.184	.147	.164	.129	.104	.095	.076	.062	.031	.025	.020	
8.0	.269	.207	.165	.232	.180	.144	.160	.126	.102	.093	.074	.061	.030	.024	.020	
9.0	.263	.202	.162	.227	.176	.141	.157	.124	.100	.091	.073	.060	.030	.024	.020	
10.0	.257	.198	.159	.222	.172	.139	.154	.121	.099	.090	.072	.059	.029	.024	.020	



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ÖLÇÜM RAPORU MEASUREMENT REPORT

2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)

Uncorrected UGR Table

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	8.4	9.9	8.9	10.4	10.9	8.7	10.2	9.2	10.7	11.2
3H	10.2	11.5	10.7	12.0	12.6	11.2	12.5	11.8	13.1	13.7
4H	10.8	12.0	11.3	12.6	13.2	12.6	13.8	13.1	14.4	15.0
6H	11.2	12.4	11.8	13.0	13.6	14.0	15.2	14.6	15.7	16.4
8H	11.3	12.5	11.9	13.0	13.7	14.8	15.9	15.4	16.5	17.2
12H	11.4	12.5	12.0	13.1	13.7	15.7	16.8	16.3	17.4	18.1
4H 2H	9.5	10.7	10.0	11.3	11.9	9.7	10.9	10.2	11.5	12.1
3H	11.6	12.7	12.2	13.3	13.9	12.3	13.4	12.9	14.0	14.7
4H	12.5	13.5	13.1	14.1	14.8	13.8	14.8	14.4	15.4	16.1
6H	13.1	14.0	13.8	14.7	15.4	15.4	16.3	16.0	16.9	17.7
8H	13.3	14.2	14.0	14.8	15.6	16.3	17.1	16.9	17.8	18.5
12H	13.4	14.2	14.1	14.9	15.7	17.3	18.1	18.0	18.8	19.5
8H 4H	13.3	14.2	14.0	14.8	15.6	14.4	15.2	15.0	15.9	16.6
6H	14.4	15.2	15.1	15.8	16.6	16.3	17.0	16.9	17.7	18.4
8H	14.9	15.5	15.6	16.2	17.0	17.3	18.0	18.0	18.7	19.5
12H	15.2	15.8	15.9	16.5	17.3	18.6	19.2	19.3	19.9	20.7
12H 4H	13.5	14.3	14.2	15.0	15.8	14.5	15.2	15.1	15.9	16.7
6H	14.9	15.5	15.6	16.2	17.0	16.5	17.1	17.2	17.8	18.6
8H	15.5	16.1	16.3	16.8	17.7	17.7	18.2	18.4	19.0	19.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.5					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 141.4 lm Total Lamp Luminous Flux. (8log(F/F0) = -6.6)



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2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)**UTILIZATION FACTORS TABLE**

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	46	33	25	45	33	25	43	32	25	18
0.80	55	42	33	54	41	33	51	40	32	24
1.00	63	50	41	61	49	40	58	49	39	31
1.25	70	57	48	68	56	47	64	53	46	36
1.50	75	63	54	73	61	53	68	58	51	40
2.00	83	71	63	80	69	61	74	66	59	47
2.50	88	77	69	84	75	67	78	70	64	51
3.00	92	82	74	88	79	72	81	74	68	55
4.00	96	88	81	93	85	79	86	80	75	60
5.00	100	92	86	96	89	84	88	83	79	64
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SRNOM = 1.25										



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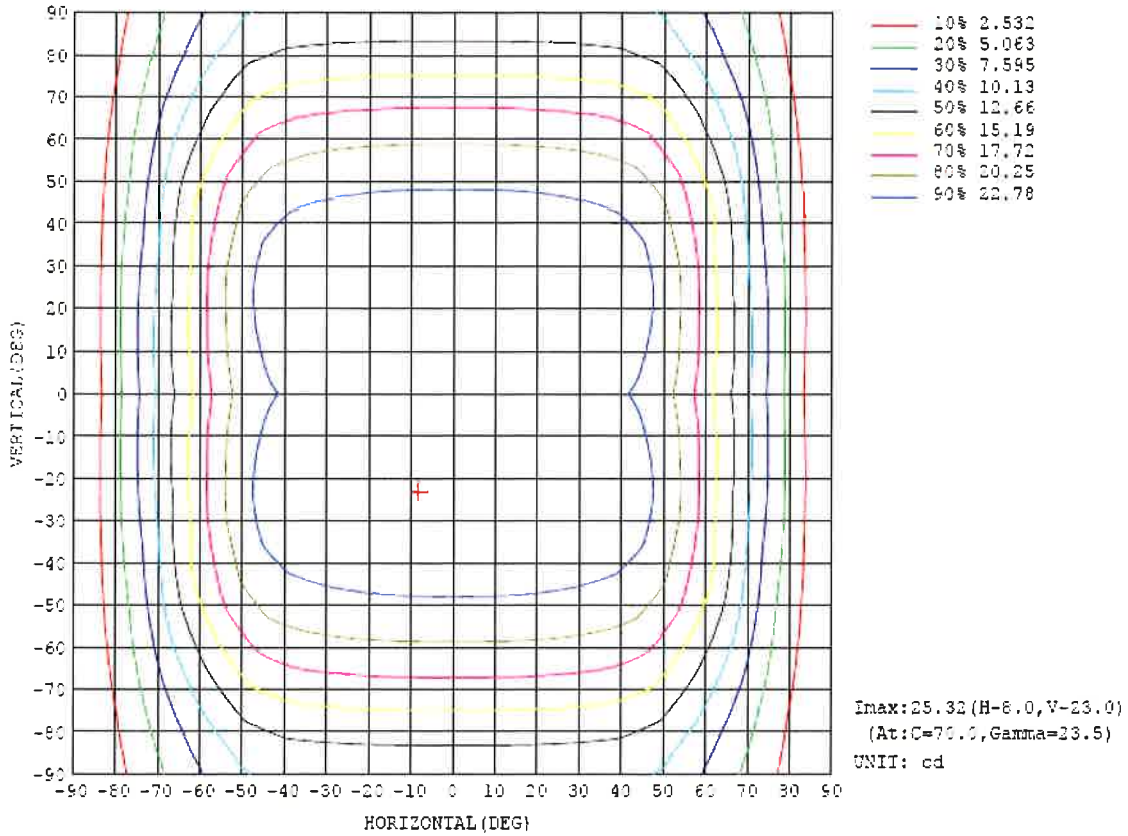
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2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)

ISOCANDELA DIAGRAM



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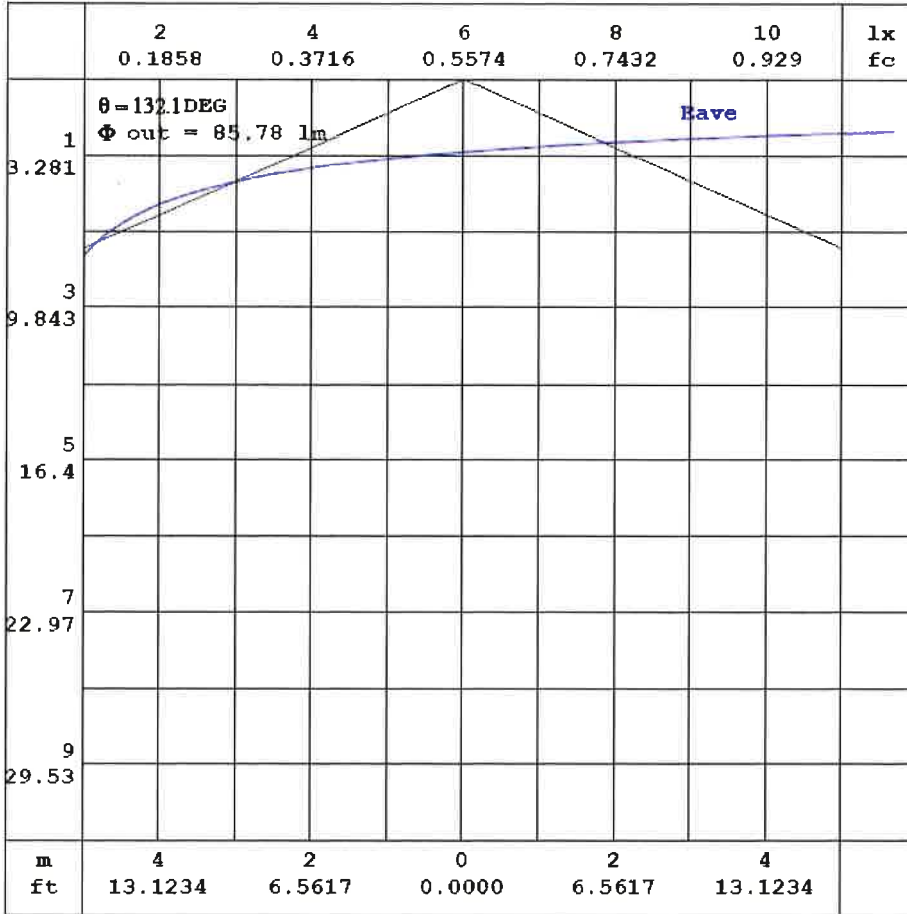
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2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)**AAI CURVES**

Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.



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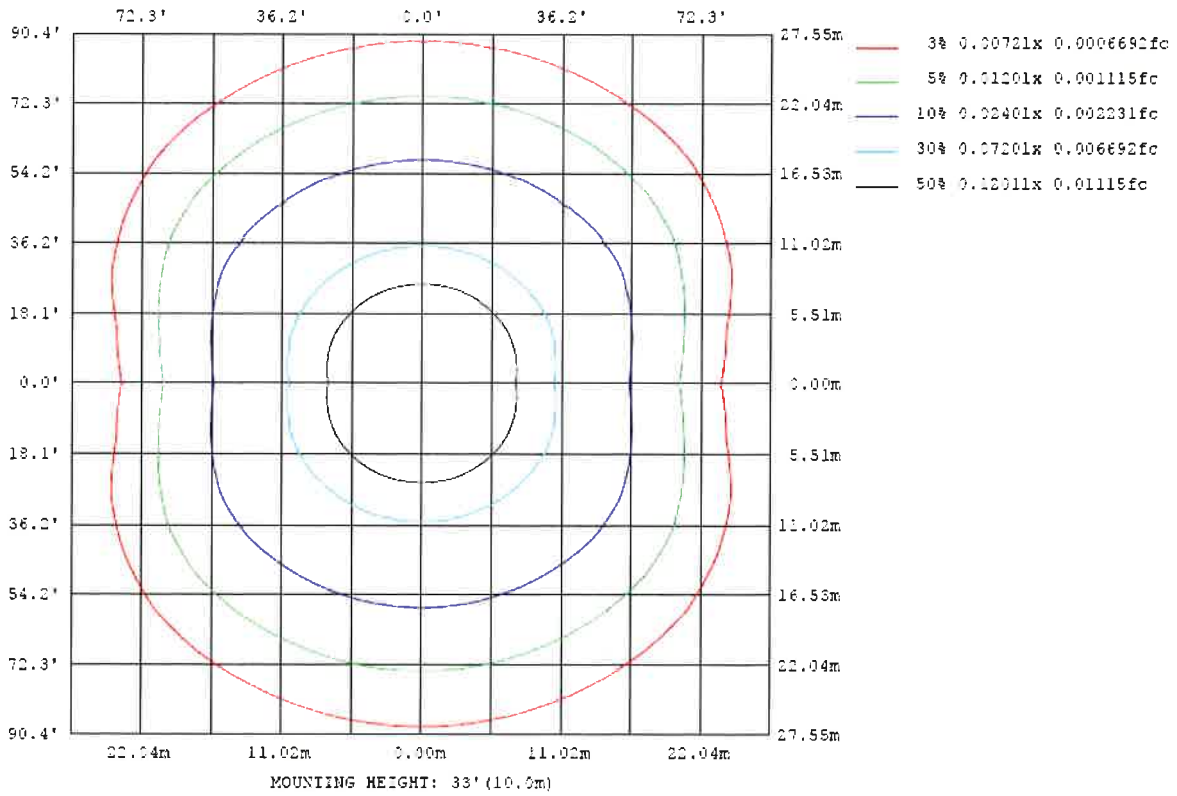
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ISOLUX DIAGRAM



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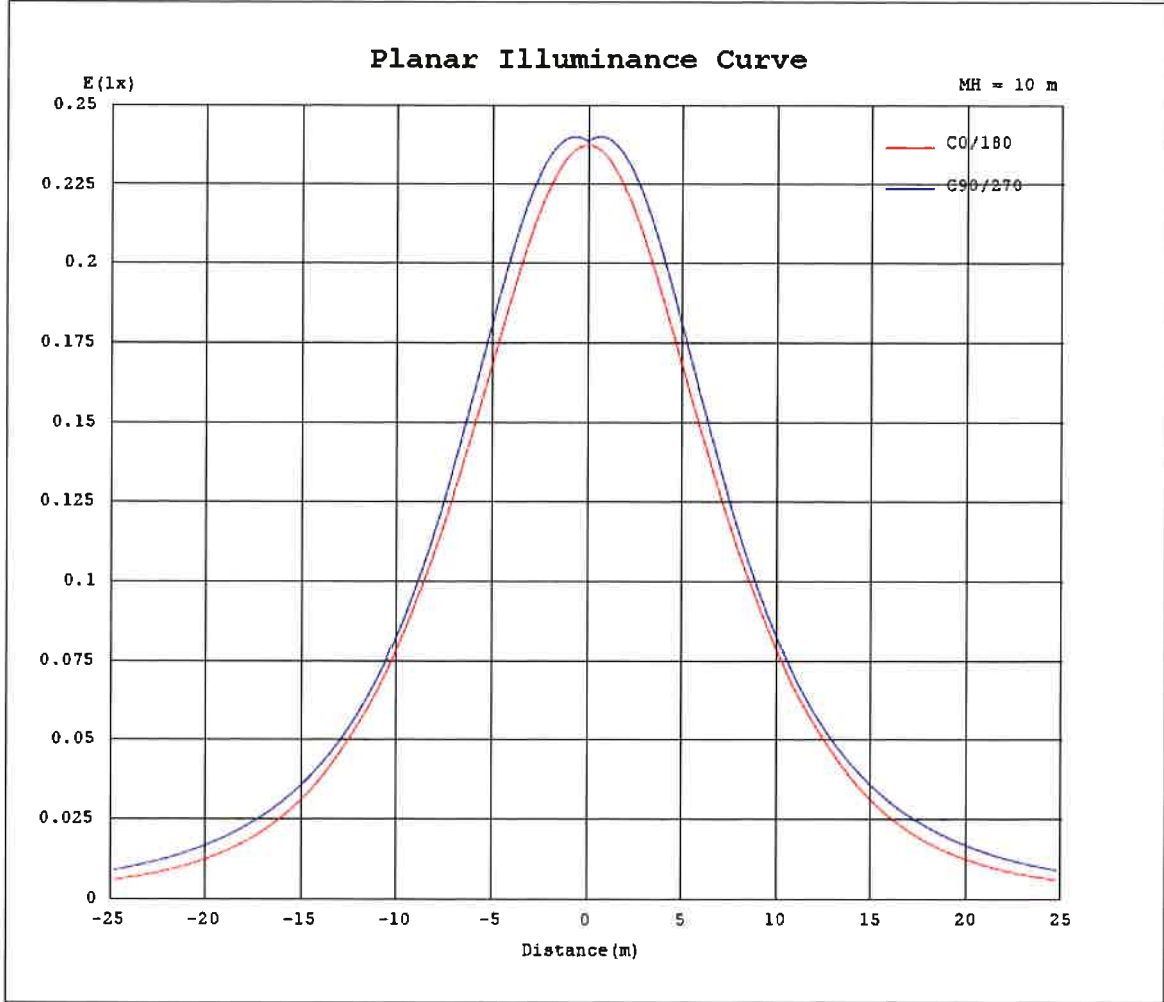
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2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)



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2.6 6500K Renk Spektrokolorimetrik Deney Sonuçları (Spectrocolorimetric Test Results of the 6500K color**Elektriksel Ölçümler**

(Electrical Measurements)

Ölçülen Güç (W) (Input Power)	7,224
Ölçülen Gerilim (V) (Input Voltage)	48 VDC
Ölçülen Akım (A) (Input Current)	0,1505
Güç Faktörü (PF) (Power Factor)	-
Ölçülen Frekans (Hz) (Input Frequency)	-
Ortam Sıcaklığı / Bağıl Nem (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
Stabilizasyon Süresi (Stabilization Time)	60 dk ±5dk

Spektrokolorimetrik Ölçüm Sonuçları

(Spectrocolorimetric Measurement Results)

Chrom x	0,3147
Chrom y	0,3292
Duv	0,0023
Chrom u'	0,1991
Chrom v'	0,4687
Peak	450 nm
Dominant	489 nm
CCT	6398 K
Nominal CCT	6000 K
Ra(CRI)	76
R9	-11
S/P Ratio	2,1
Preburning time	1 hr
Test Configuration	4π



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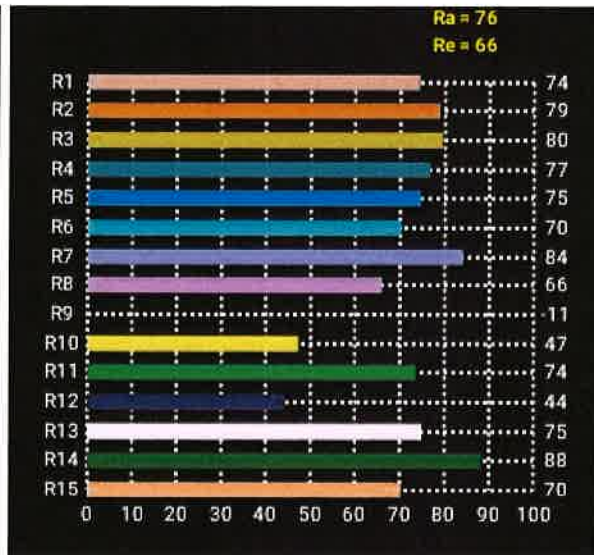
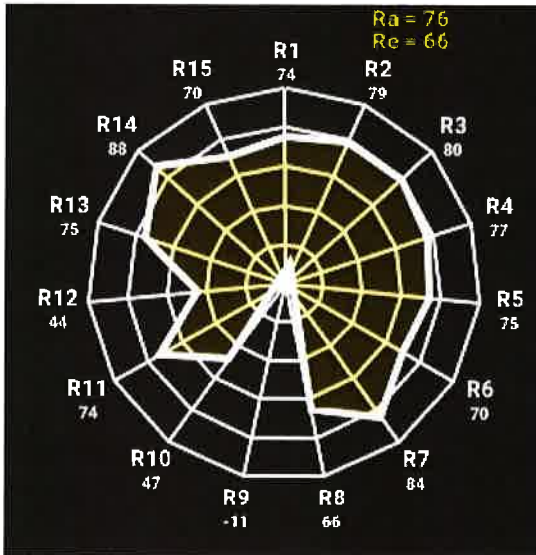
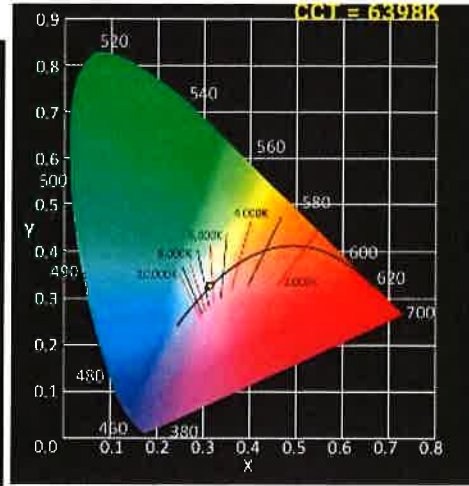
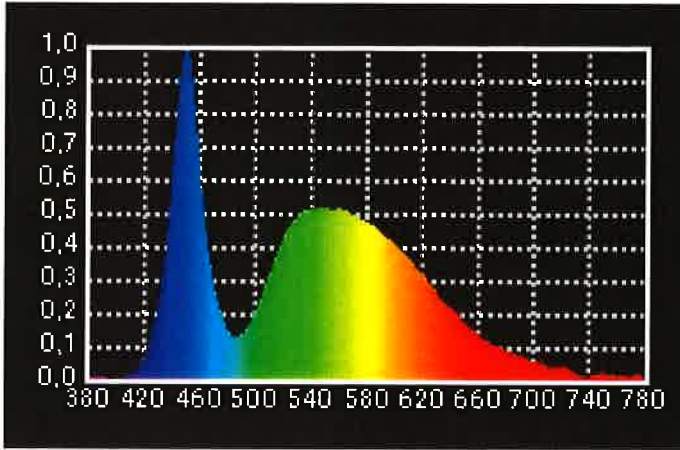
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2.6 6500K Renk Spektrokolorimetrik Deney Sonuçları (Spectrocolorimetric Test Results of the 6500K color)



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3.1 DGC'nin Fotoğrafları (Photos of EUT)

