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**ÖLÇÜM RAPORU**  
**MEASUREMENT REPORT**

**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 RADIUS DIFFUSED(90cm)  
Sword DW radius 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

: 05.04.2019

**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.**  
International Accreditation Service, Inc. (IAS) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

**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.

**Mühür ve Tarih**  
Seal and Date



**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 RADIUS 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= Deneyden Geçen Cihaz  
EUT=Equipment Under Test



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**ÖLÇÜM RAPORU**  
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Deneyleyler aşağıdaki standartlara göre yapılmıştır (The tests were performed according to following standarts):

**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)

<b>Ölçülen Güç (W)</b> (Input Power)	12,763
<b>Ölçülen Gerilim (V)</b> (Input Voltage)	48 VDC
<b>Ölçülen Akım (A)</b> (Input Current)	0,265
<b>Güç Faktörü (PF)</b> (Power Factor)	-
<b>Ölçülen Frekans (Hz)</b> (Input Frequency)	-
<b>Ortam Sıcaklığı / Bağıl Nem</b> (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
<b>Stabilizasyon Süresi</b> (Stabilization Time)	60 dk ±5dk

**Fotometrik Ölçüm Sonuçları**

(Photometric Measurement Results)

<b>Toplam Işık Akısı</b> (Total Luminous Flux) (lm)	234,89
<b>Maksimum Işık Şiddeti</b> (Max. Light Intensity) (cd)	42,03
<b>Armatür Etkinliği</b> (Luminaire Efficacy) (lm/W)	18,40



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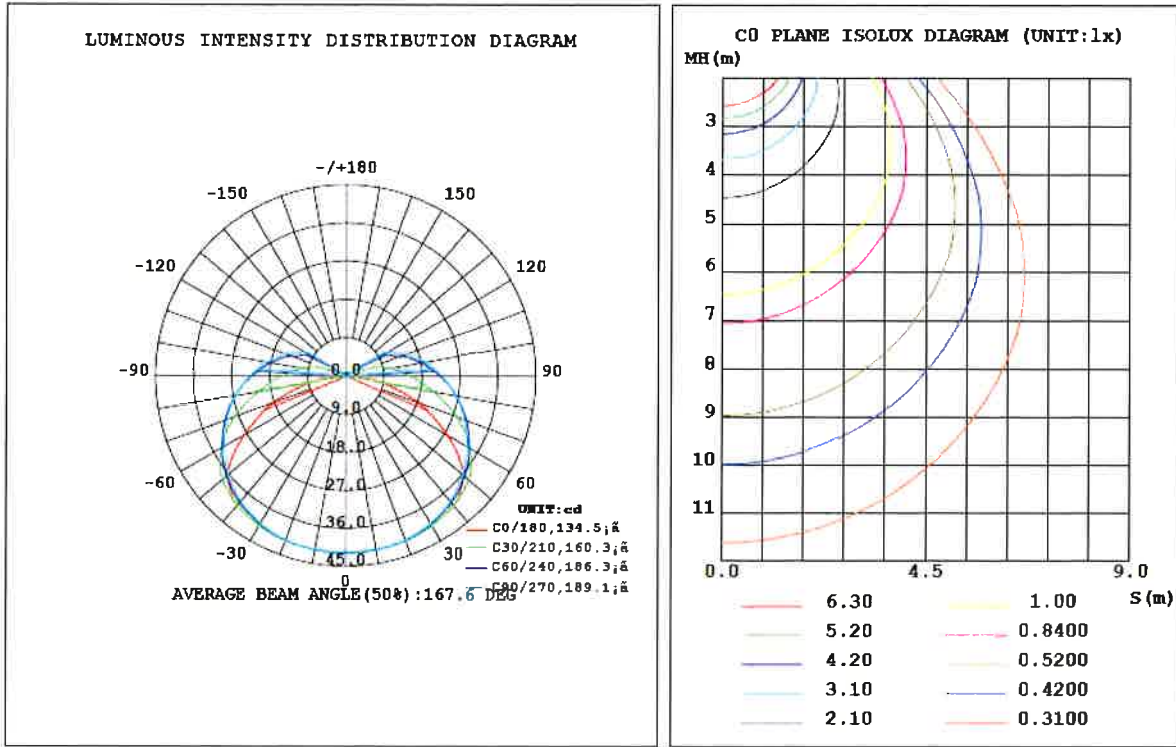
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**2.1 FULL ON renk Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON color)**



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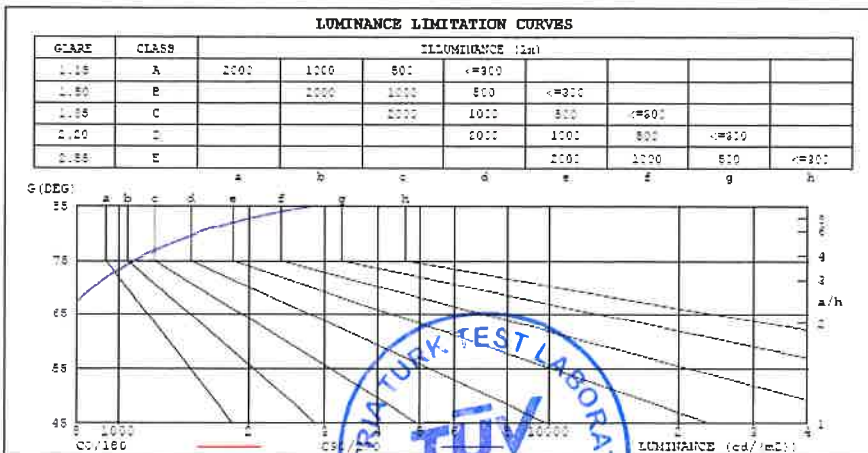
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**2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)**

**ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES**

ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	☉ none	☉ total	☉ lum. lamp
5	41.81	41.92	42.02	41.92	41.81	41.92	42.02	41.92	0- 5	1.002	1.002	0.42,0.42
10	41.76	41.90	41.96	41.90	41.76	41.90	41.96	41.90	5- 10	2.997	2.999	1.7,1.7
15	41.66	41.78	41.78	41.78	41.66	41.78	41.75	41.78	10- 15	4.955	4.958	2.81,2.81
20	41.47	41.55	41.40	41.55	41.47	41.55	41.40	41.55	15- 20	6.359	15.82	6.72,6.72
25	41.21	41.21	40.92	41.21	41.21	41.21	40.92	41.21	20- 25	6.667	24.48	10.4,10.4
30	40.87	40.75	40.26	40.75	40.87	40.75	40.26	40.75	25- 30	10.38	34.84	14.6,14.6
35	40.42	40.14	39.45	40.14	40.42	40.14	39.45	40.14	30- 35	11.99	46.72	19.9,19.9
40	39.84	39.29	38.47	39.29	39.84	39.29	38.47	39.29	35- 40	12.24	59.97	25.5,25.5
45	38.40	38.45	37.25	38.45	38.40	38.45	37.25	38.45	40- 45	14.39	74.35	31.7,21.7
50	36.16	37.24	36.09	37.24	36.16	37.24	36.09	37.24	45- 50	18.20	89.55	28.1,28.1
55	32.45	36.02	34.67	36.02	32.45	36.02	34.67	36.02	50- 55	19.47	108.2	44.9,44.9
60	27.76	34.49	32.11	34.49	27.76	34.49	32.11	34.49	55- 60	19.68	120.9	51.5,51.5
65	22.84	32.62	31.51	32.62	22.84	32.62	31.51	32.62	60- 65	19.37	134.2	58.88
70	18.24	30.49	29.90	30.49	18.24	30.49	29.90	30.49	65- 70	14.57	150.7	64.2,64.2
75	13.17	28.24	28.21	28.24	13.17	28.24	28.21	28.24	70- 75	13.61	164.3	70,70
80	8.310	25.84	26.45	25.84	8.210	25.84	26.45	25.84	75- 80	12.40	176.8	75.2,75.2
85	3.956	22.40	24.62	23.40	3.956	22.40	24.62	23.40	80- 85	11.32	187.9	82.00
90	0.0510	20.88	22.72	20.88	0.0510	20.88	22.72	20.88	85- 90	9.792	197.7	84.2,84.2
95	0.0464	18.46	20.84	18.46	0.0464	18.46	20.84	18.46	90- 95	8.573	206.2	87.8,87.8
100	0.0202	16.12	18.96	16.12	0.0202	16.12	18.96	16.12	95-100	7.478	213.7	91.81
105	0	13.76	17.10	13.76	0	13.76	17.10	13.76	100-105	6.373	220.1	92.7,92.7
110	0	11.30	15.26	11.30	0	11.30	15.26	11.30	105-110	5.245	225.3	95.9,95.9
115	0	7.210	12.86	7.210	0	7.210	12.86	7.210	110-115	4.035	228.4	97.7,97.7
120	0	2.764	11.40	2.764	0	2.764	11.40	2.764	115-120	2.867	232.3	98.9,98.9
125	0	1.946	1.701	1.946	0	1.946	1.701	1.946	120-125	1.335	233.6	99.4,99.4
130	0	1.468	0.8173	1.468	0	1.468	0.8173	1.468	125-130	0.4924	234.1	99.7,99.7
135	0	1.029	0.6080	1.029	0	1.029	0.6080	1.029	130-135	0.2205	234.4	99.8,99.8
140	0	0.6909	0.6672	0.6909	0	0.6909	0.6672	0.6909	135-140	0.2265	234.6	99.9,99.9
145	0	0.4264	0.5017	0.4264	0	0.4264	0.5017	0.4264	140-145	0.1896	234.8	99.9,99.9
150	0	0.2220	0.2450	0.2220	0	0.2220	0.2450	0.2220	145-150	0.0766	234.8	100,100
155	0	0.0822	0.1987	0.0822	0	0.0822	0.1987	0.0822	150-155	0.0257	234.9	100,100
160	0	0.0001	0.0725	0.0001	0	0.0001	0.0725	0.0001	155-160	0.0114	234.9	100,100
165	0	0	0	0	0	0	0	0	160-165	0.0010	234.9	100,100
170	0	0	0	0	0	0	0	0	165-170	0	234.9	100,100
175	0	0	0	0	0	0	0	0	170-175	0	234.9	100,100
180	0	0	0	0	0	0	0	0	175-180	0	234.9	100,100



LUMINANCE cd/m²

G (DEG)	C0/180	C90/270
85	453	2825
80	479	1523
75	505	1090
70	531	874
65	540	746
60	558	662
55	566	605
50	563	561
45	541	528

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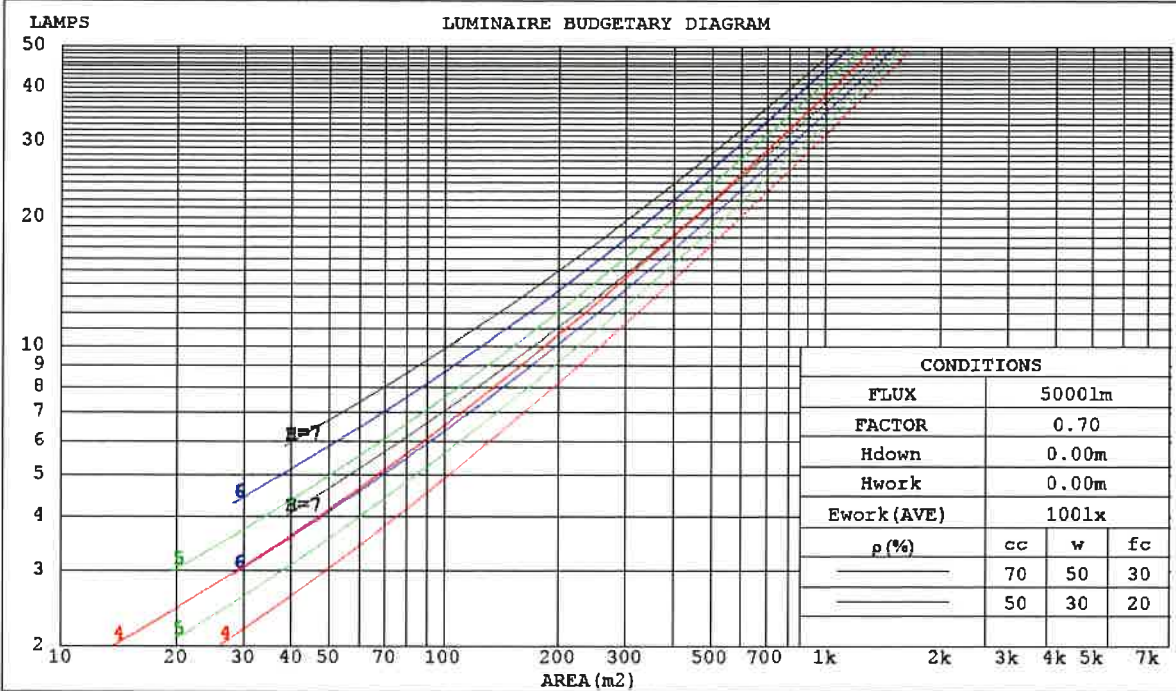
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**2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of the FULL ON)**

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.15	1.15	1.15	1.11	1.11	1.11	1.02	1.02	1.02	.95	.95	.95	.87	.87	.87	.84
1.0	.95	.89	.84	.91	.86	.81	.83	.79	.75	.77	.73	.70	.71	.68	.65	.62
2.0	.80	.72	.65	.77	.69	.63	.71	.64	.59	.65	.60	.55	.60	.55	.52	.48
3.0	.69	.60	.52	.66	.58	.51	.61	.54	.48	.56	.50	.45	.51	.46	.42	.39
4.0	.60	.50	.43	.58	.49	.42	.53	.46	.39	.49	.42	.37	.45	.39	.35	.32
5.0	.53	.43	.36	.51	.42	.35	.47	.39	.33	.43	.37	.31	.40	.34	.30	.27
6.0	.48	.38	.31	.46	.37	.30	.42	.34	.29	.39	.32	.27	.36	.30	.26	.23
7.0	.43	.33	.27	.41	.32	.26	.38	.30	.25	.35	.29	.24	.33	.27	.22	.20
8.0	.39	.30	.24	.37	.29	.23	.35	.27	.22	.32	.26	.21	.30	.24	.20	.18
9.0	.35	.27	.21	.34	.26	.20	.32	.25	.19	.30	.23	.19	.27	.22	.18	.16
10.0	.32	.24	.19	.31	.24	.18	.29	.22	.17	.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
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.413	.235	.074	.401	.229	.073	.378	.217	.069	.357	.206	.066	.338	.196	.063	
2.0	.353	.193	.059	.342	.188	.058	.321	.179	.056	.302	.170	.053	.285	.161	.051	
3.0	.311	.166	.050	.301	.161	.049	.283	.153	.047	.265	.145	.045	.249	.138	.043	
4.0	.278	.145	.043	.269	.141	.042	.253	.134	.040	.237	.127	.038	.222	.121	.037	
5.0	.252	.128	.037	.244	.125	.036	.228	.119	.035	.214	.113	.034	.201	.107	.032	
6.0	.230	.115	.033	.223	.112	.032	.209	.107	.031	.196	.102	.030	.184	.097	.029	
7.0	.211	.104	.030	.205	.102	.029	.192	.097	.028	.180	.092	.027	.169	.088	.026	
8.0	.195	.096	.027	.189	.093	.026	.178	.089	.025	.167	.085	.024	.157	.080	.023	
9.0	.182	.088	.025	.176	.086	.024	.166	.082	.023	.155	.078	.022	.146	.074	.021	
10.0	.170	.081	.023	.165	.080	.022	.155	.076	.021	.146	.072	.021	.137	.069	.020	

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	.311	.311	.311	.266	.266	.266	.182	.182	.182	.104	.104	.104	.033	.033	.033	
1.0	.309	.277	.248	.265	.238	.213	.181	.164	.148	.104	.095	.086	.033	.030	.028	
2.0	.303	.254	.213	.259	.219	.184	.178	.151	.129	.103	.088	.075	.033	.028	.025	
3.0	.296	.238	.192	.253	.205	.166	.174	.142	.117	.100	.083	.069	.032	.027	.023	
4.0	.288	.225	.178	.247	.195	.154	.170	.136	.109	.098	.079	.064	.032	.026	.021	
5.0	.280	.216	.168	.240	.187	.146	.166	.130	.103	.096	.077	.061	.031	.025	.020	
6.0	.272	.208	.161	.234	.180	.140	.161	.126	.099	.094	.074	.059	.030	.024	.020	
7.0	.265	.201	.156	.228	.174	.136	.157	.122	.097	.091	.072	.057	.030	.024	.019	
8.0	.258	.196	.153	.222	.170	.133	.154	.119	.094	.089	.070	.056	.029	.023	.019	
9.0	.252	.191	.150	.217	.166	.130	.150	.116	.093	.087	.069	.055	.028	.023	.018	
10.0	.246	.187	.147	.212	.162	.128	.147	.114	.091	.086	.067	.054	.028	.022	.018	



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

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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	10.1	11.5	10.6	12.0	12.6	10.4	11.9	10.9	12.4	12.9
3H	11.8	13.2	12.4	13.7	14.3	13.2	14.5	13.7	15.0	15.6
4H	12.6	13.8	13.1	14.4	15.0	14.7	16.0	15.2	16.5	17.1
6H	13.1	14.3	13.6	14.9	15.5	16.4	17.6	16.9	18.1	18.8
8H	13.3	14.5	13.9	15.0	15.7	17.3	18.5	17.9	19.0	19.7
12H	13.4	14.6	14.0	15.1	15.8	18.4	19.5	19.0	20.1	20.7
4H 2H	11.1	12.4	11.7	13.0	13.6	11.4	12.7	11.9	13.2	13.8
3H	13.3	14.4	13.9	15.0	15.6	14.3	15.4	14.9	16.0	16.6
4H	14.3	15.3	14.9	15.9	16.6	16.0	17.0	16.6	17.6	18.3
6H	15.0	16.0	15.7	16.6	17.3	17.8	18.8	18.4	19.4	20.1
8H	15.3	16.2	16.0	16.8	17.6	18.8	19.7	19.5	20.4	21.1
12H	15.5	16.3	16.2	17.0	17.7	20.0	20.8	20.7	21.5	22.2
8H 4H	15.3	16.2	15.9	16.8	17.5	16.6	17.5	17.2	18.1	18.8
6H	16.6	17.3	17.2	18.0	18.7	18.7	19.5	19.4	20.1	20.9
8H	17.1	17.8	17.8	18.5	19.2	20.0	20.6	20.6	21.3	22.1
12H	17.5	18.1	18.2	18.8	19.6	21.4	22.0	22.1	22.7	23.5
12H 4H	15.6	16.4	16.2	17.0	17.8	16.7	17.5	17.3	18.1	18.9
6H	17.1	17.8	17.8	18.4	19.2	19.0	19.7	19.7	20.3	21.1
8H	17.9	18.5	18.6	19.2	20.0	20.3	20.9	21.0	21.6	22.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 234.9 lm Total Lamp Luminous Flux. (8log(F/F0) = -5.0)



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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	25	45	33	25	43	32	25	18
0.80	55	41	33	54	41	33	51	40	32	24
1.00	63	49	40	61	48	40	58	49	39	30
1.25	70	56	47	68	55	47	64	53	45	36
1.50	75	62	53	72	61	52	68	58	50	40
2.00	83	71	62	80	69	61	74	65	58	47
2.50	87	76	68	84	74	66	78	70	63	51
3.00	91	81	73	88	79	71	81	74	68	55
4.00	96	88	80	92	85	78	86	79	74	60
5.00	99	92	85	95	89	83	88	83	78	64
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										



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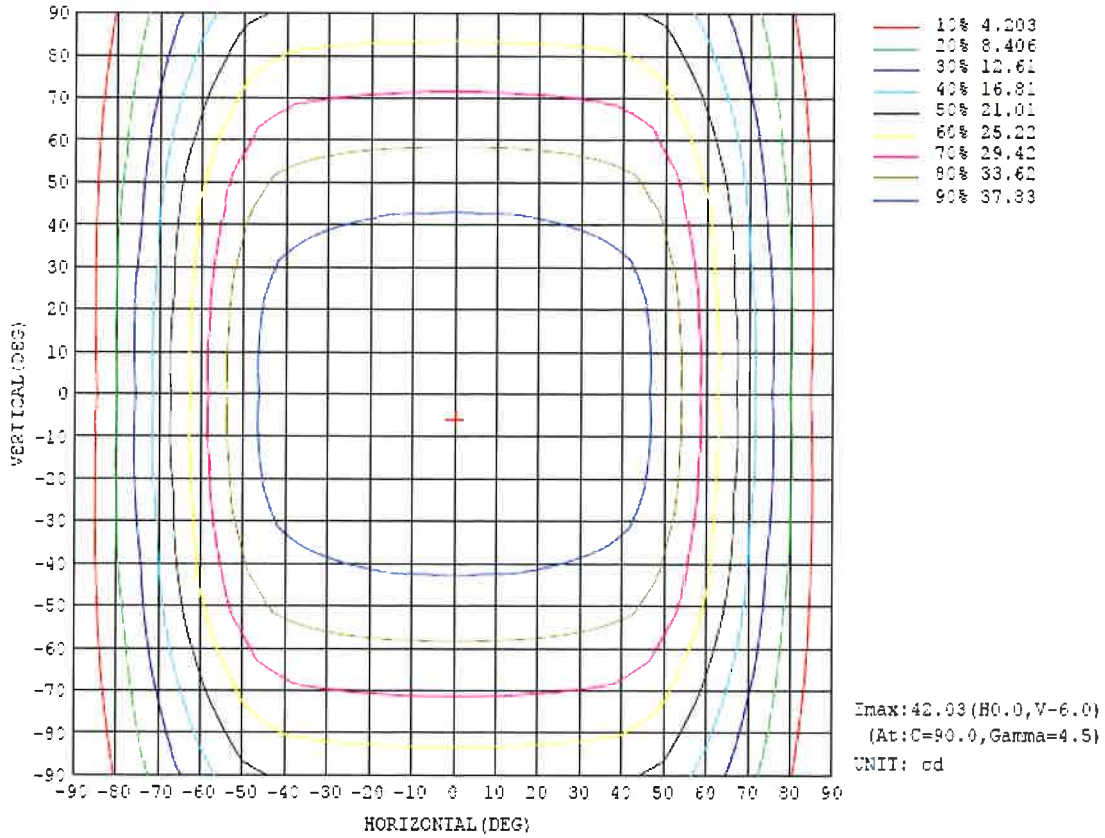
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**2.1 FULL ON Fotometrik Deneş Sonuđları (Photometric Test Results of the FULL ON)**  
**ISOCANDELA DIAGRAM**



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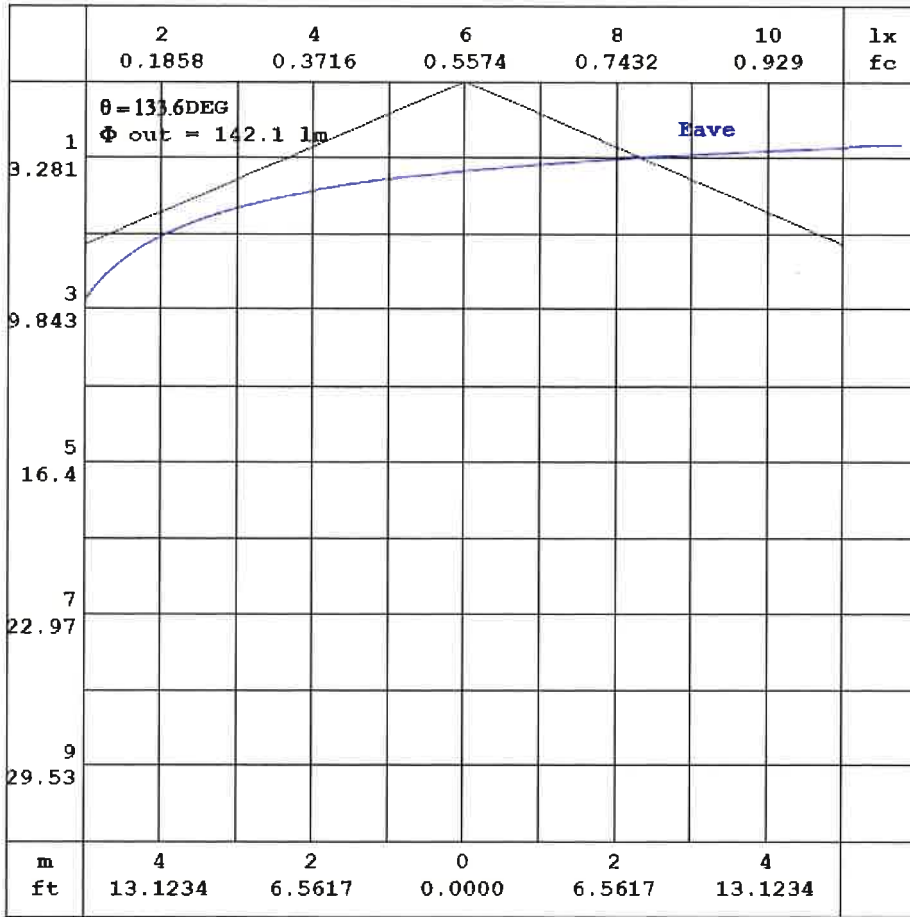
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**2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results Of The FULL ON)****AAI CURVES**

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



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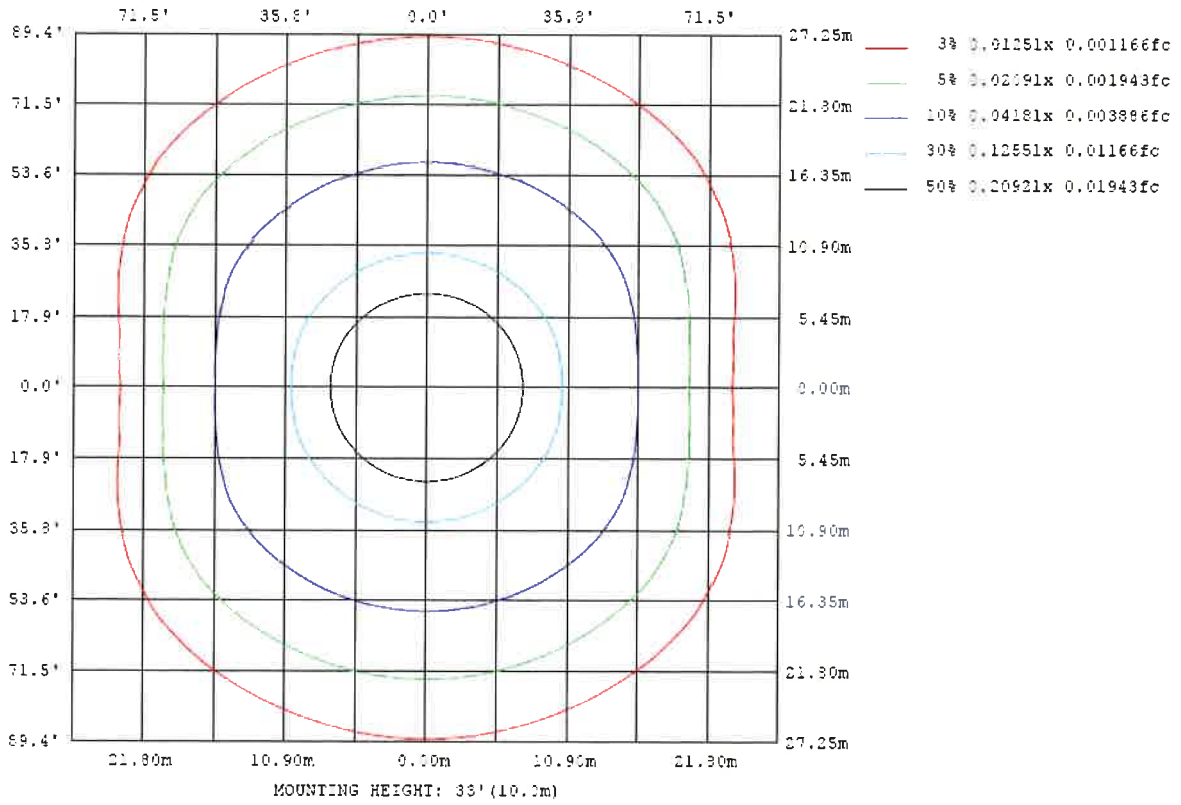
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**2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results Of the FULL ON)**

**ISOLUX DIAGRAM**



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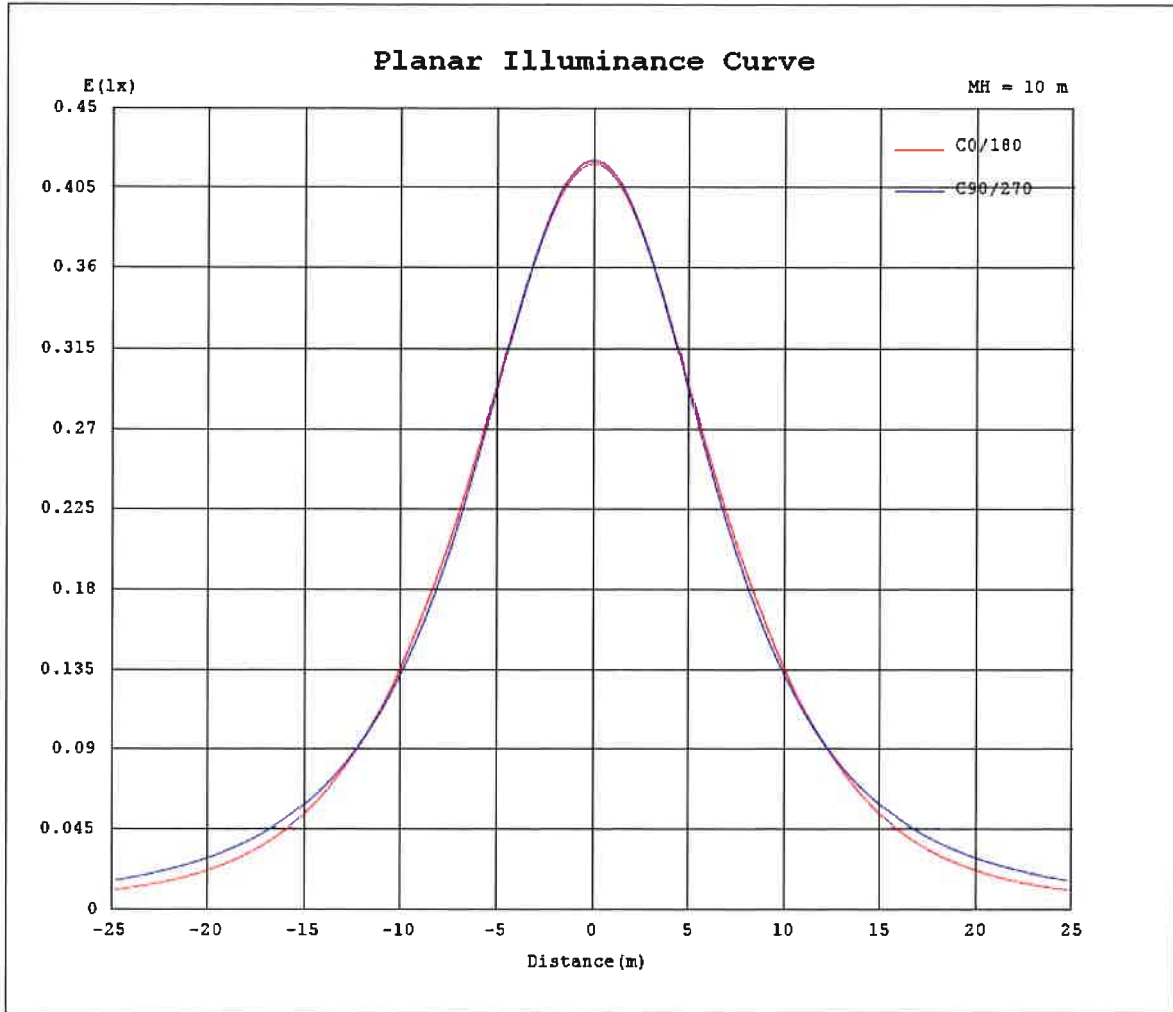
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**2.1 FULL ON Fotometrik Deney Sonuçları (Photometric Test Results of The FULL ON)**



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**ÖLÇÜM RAPORU**  
MEASUREMENT REPORT**2.2 FULL ON Spektrokolorimetrik Deney Sonuçları** (spectrocolorimetric Test Results of the FULL ON)**Elektriksel Ölçümler**

(Electrical Measurements)

<b>Ölçülen Güç (W)</b> (Input Power)	12,763
<b>Ölçülen Gerilim (V)</b> (Input Voltage)	48 VDC
<b>Ölçülen Akım (A)</b> (Input Current)	0,265
<b>Güç Faktörü (PF)</b> (Power Factor)	-
<b>Ölçülen Frekans (Hz)</b> (Input Frequency)	-
<b>Ortam Sıcaklığı / Bağıl Nem</b> (Ambient Temperature / Relative Humidity)	25 °C 48% Rh
<b>Stabilizasyon Süresi</b> (Stabilization Time)	60 dk ±5dk

**Spektrokolorimetrik Ölçüm Sonuçları**

(Spectrocolorimetric Measurement Results)

<b>Chrom x</b>	0,3717
<b>Chrom y</b>	0,3621
<b>Duv</b>	-0,0044
<b>Chrom u'</b>	0,2252
<b>Chrom v'</b>	0,4936
<b>Peak</b>	449 nm
<b>Dominant</b>	582 nm
<b>CCT</b>	4143 K
<b>Nominal CCT</b>	4000 K
<b>Ra(CRI)</b>	81
<b>R9</b>	25
<b>S/P Ratio</b>	1,6
<b>Preburning time</b>	1 hr
<b>Test Configuration</b>	4π



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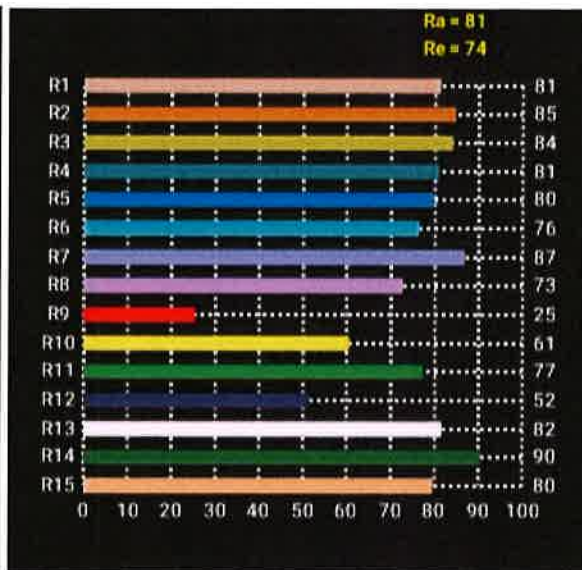
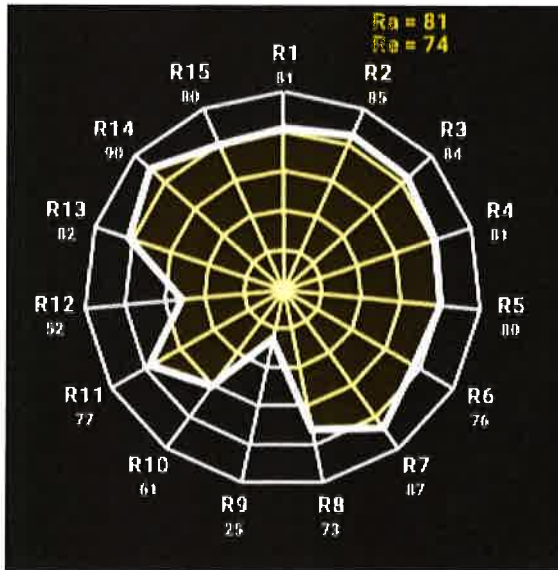
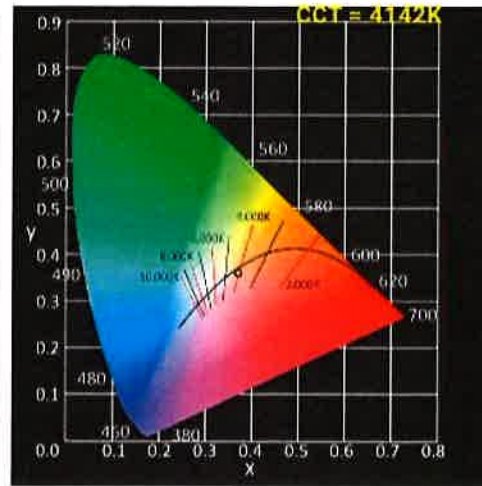
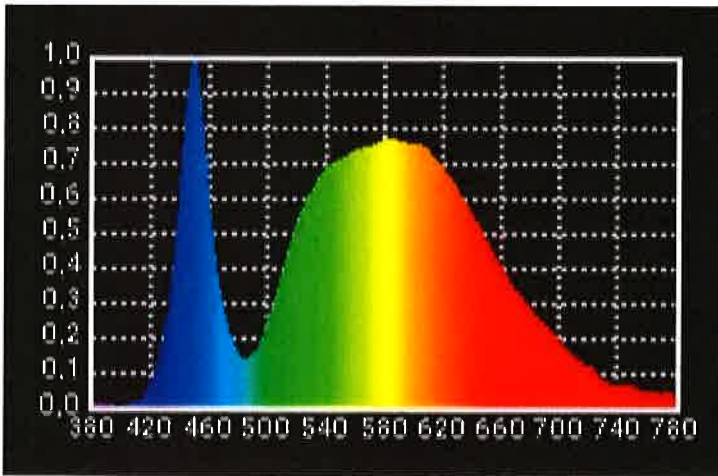
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**2.2 FULL ON Spektrokolorimetrik Deney Sonuçları (Spectrocolorimetric Test Results of the FULL ON)**

**Spectral Power Distribution**



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

**Elektriksel Ölçümler**

(Electrical Measurements)

<b>Ölçülen Güç (W)</b> (Input Power)	7,262
<b>Ölçülen Gerilim (V)</b> (Input Voltage)	48 VDC
<b>Ölçülen Akım (A)</b> (Input Current)	0,1513
<b>Güç Faktörü (PF)</b> (Power Factor)	-
<b>Ölçülen Frekans (Hz)</b> (Input Frequency)	-
<b>Ortam Sıcaklığı / Bağıl Nem</b> (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
<b>Stabilizasyon Süresi</b> (Stabilization Time)	60 dk ±5dk

**Fotometrik Ölçüm Sonuçları**

(Photometric Measurement Results)

<b>Toplam Işık Akısı</b> (Total Luminous Flux) (lm)	102,94
<b>Maksimum Işık Şiddeti</b> (Max. Light Intensity) (cd)	19
<b>Armatür Etkinliği</b> (Luminaire Efficacy) (lm/W)	14,17



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

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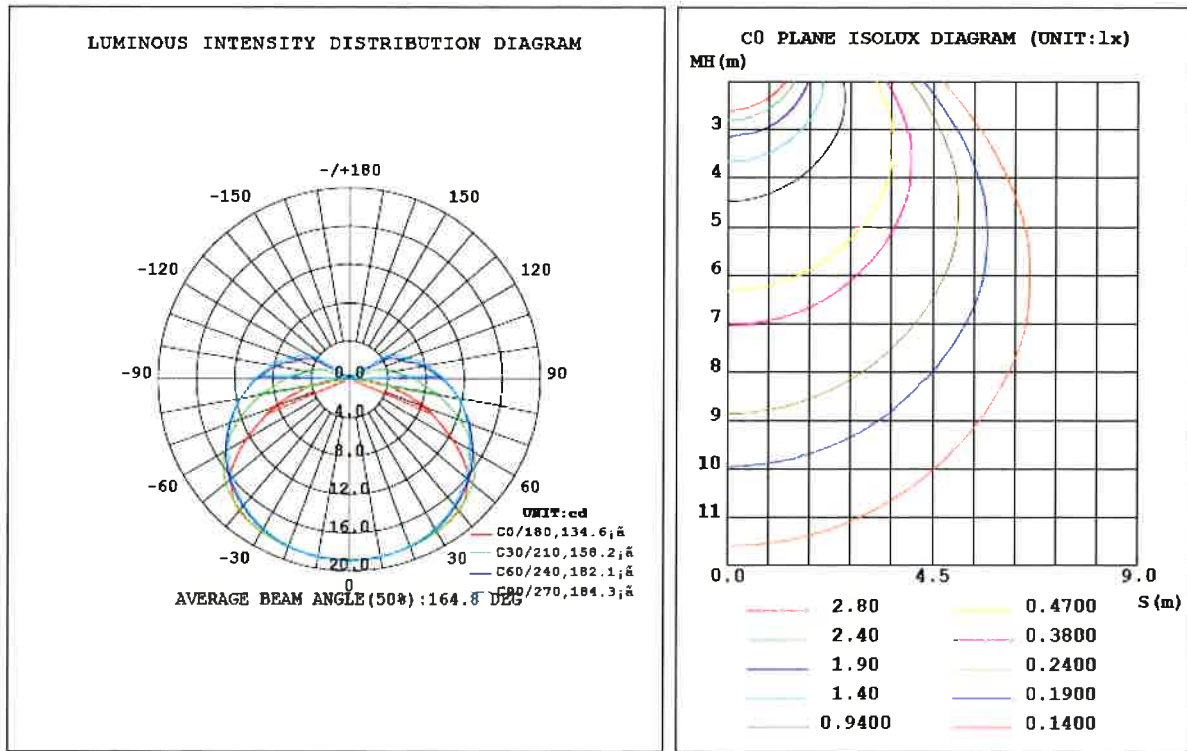
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**2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**



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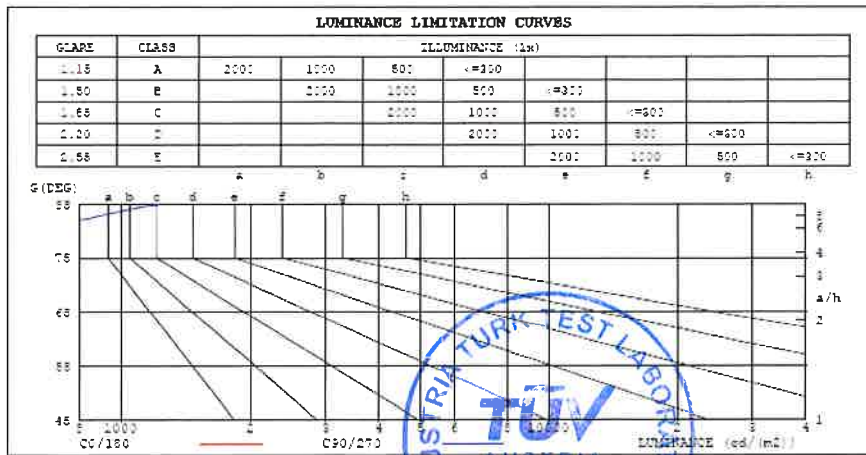
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**2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**

**ZONAL FLUX DIAGRAM**  
**AND LUMINANCE LIMITATION CURVES**

**ZONAL FLUX DIAGRAM:**

y	C0	C45	C90	C135	C180	C225	C270	C315	y	Φ zone	Φ total	Φlum, lamp
5	18.90	18.90	18.97	18.90	18.80	18.90	18.97	18.90	0- 5	0.4517	0.4517	0.44,0.44
10	18.78	18.86	18.89	18.86	18.78	18.86	18.89	18.86	5- 10	1.350	1.801	1.75,1.75
15	18.73	18.77	18.76	18.77	18.73	18.77	18.76	18.77	10- 15	2.230	4.031	3.92,3.92
20	18.65	18.63	18.56	18.63	18.65	18.63	18.56	18.63	15- 20	3.090	7.111	6.91,6.91
25	18.53	18.45	18.30	18.45	18.53	18.45	18.30	18.45	20- 25	3.995	11.00	10.7,10.7
30	18.37	18.20	17.96	18.20	18.37	18.20	17.96	18.20	25- 30	4.622	15.62	15.2,15.2
35	18.17	17.90	17.57	17.90	18.17	17.90	17.57	17.90	30- 35	5.311	20.94	20.3,20.3
40	17.90	17.53	17.10	17.53	17.90	17.53	17.10	17.53	35- 40	5.908	26.85	26.1,26.1
45	17.22	17.08	16.57	17.08	17.22	17.08	16.57	17.08	40- 45	6.403	33.25	32.2,32.2
50	16.19	16.55	15.97	16.55	16.19	16.55	15.97	16.55	45- 50	6.756	40.01	38.9,38.9
55	14.52	15.92	15.22	15.92	14.52	15.92	15.22	15.92	50- 55	6.947	46.95	45.6,45.6
60	12.39	15.21	14.59	15.21	12.39	15.21	14.59	15.21	55- 60	6.932	53.89	52.2,52.2
65	10.20	14.35	13.85	14.35	10.20	14.35	13.85	14.35	60- 65	6.791	60.62	58.9,58.9
70	8.240	13.36	12.92	13.36	8.240	13.36	12.92	13.36	65- 70	6.297	67.01	65.1,65.1
75	5.901	12.32	12.34	12.32	5.901	12.32	12.34	12.32	70- 75	5.950	72.86	70.9,70.9
80	2.714	11.23	11.54	11.23	2.714	11.23	11.54	11.23	75- 80	5.409	78.27	76.1,76.1
85	1.708	10.13	10.71	10.13	1.708	10.13	10.71	10.13	80- 85	4.827	83.20	80.8,80.8
90	0.0009	9.007	9.862	9.007	0.0009	9.007	9.862	9.007	85- 90	4.230	87.42	84.9,84.9
95	0	7.920	9.016	7.920	0	7.920	9.016	7.920	90- 95	3.699	91.12	88.5,88.5
100	0	6.889	8.178	6.889	0	6.889	8.178	6.889	95-100	3.191	94.31	91.6,91.6
105	0	5.621	7.227	5.621	0	5.621	7.227	5.621	100-105	2.690	97.00	94.2,94.2
110	0	4.881	6.229	4.881	0	4.881	6.229	4.881	105-110	2.166	99.17	96.3,96.3
115	0	2.988	5.581	2.988	0	2.988	5.581	2.988	110-115	1.700	100.9	98.9
120	0	0.9913	4.880	0.9913	0	0.9913	4.880	0.9913	115-120	1.198	102.1	99.1,99.1
125	0	0.7026	0.6099	0.7026	0	0.7026	0.6099	0.7026	120-125	0.5255	102.6	99.7,99.7
130	0	0.5166	0.1992	0.5166	0	0.5166	0.1992	0.5166	125-130	0.1842	102.7	99.8,99.8
135	0	0.3251	0.2146	0.3251	0	0.3251	0.2146	0.3251	130-135	0.1011	102.7	99.9,99.9
140	0	0.1728	0.1682	0.1728	0	0.1728	0.1682	0.1728	135-140	0.0628	102.9	100,100
145	0	0.0587	0.0920	0.0587	0	0.0587	0.0920	0.0587	140-145	0.0395	102.9	100,100
150	0	0.0000	0.0232	0.0000	0	0.0000	0.0232	0.0000	145-150	0.0092	102.9	100,100
155	0	0	0	0	0	0	0	0	150-155	0.0005	102.9	100,100
160	0	0	0	0	0	0	0	0	155-160	0	102.9	100,100
165	0	0	0	0	0	0	0	0	160-165	0	102.9	100,100
170	0	0	0	0	0	0	0	0	165-170	0	102.9	100,100
175	0	0	0	0	0	0	0	0	170-175	0	102.9	100,100
180	0	0	0	0	0	0	0	0	175-180	0	102.9	100,100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			



**LUMINANCE cd/m²**

G (DEG)	C0/180	C90/270
85	196	1229
80	214	625
75	229	477
70	241	389
65	241	328
60	245	292
55	253	267
50	252	248
45	244	234

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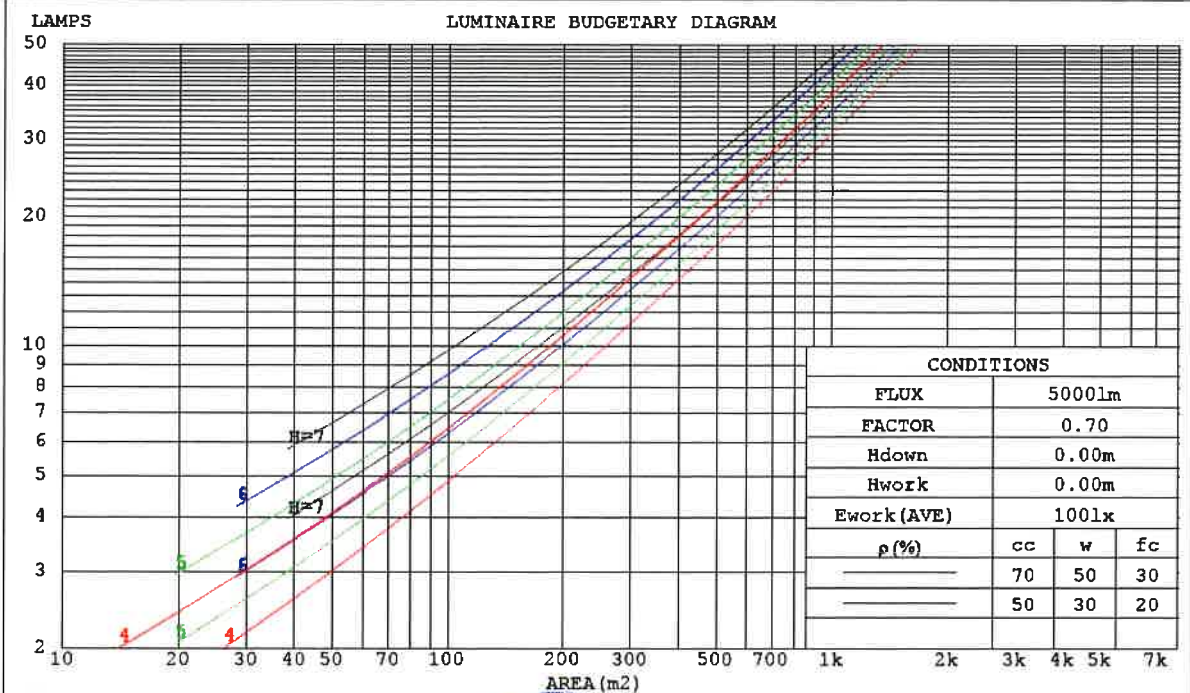
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**MEASUREMENT REPORT**

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

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

ρ <sub>cc</sub>	80%			70%			50%			30%			10%			0
ρ <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ <sub>fc</sub>	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.15	1.15	1.15	1.11	1.11	1.11	1.03	1.03	1.03	.95	.95	.95	.88	.88	.88	.85
1.0	.95	.89	.84	.91	.86	.81	.84	.80	.76	.77	.74	.71	.71	.69	.66	.63
2.0	.81	.72	.65	.77	.70	.63	.71	.65	.59	.65	.60	.56	.60	.56	.52	.49
3.0	.69	.60	.52	.67	.58	.51	.61	.54	.48	.56	.50	.45	.52	.47	.43	.40
4.0	.61	.51	.43	.58	.49	.42	.54	.46	.40	.49	.43	.38	.46	.40	.36	.33
5.0	.54	.44	.36	.51	.42	.35	.48	.40	.34	.44	.37	.32	.41	.35	.30	.27
6.0	.48	.38	.31	.46	.37	.30	.43	.35	.29	.39	.33	.27	.36	.31	.26	.23
7.0	.43	.34	.27	.41	.33	.26	.38	.31	.25	.36	.29	.24	.33	.27	.23	.20
8.0	.39	.30	.24	.38	.29	.23	.35	.27	.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	.24	.19	.32	.24	.18	.29	.23	.18	.28	.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

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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.411	.234	.074	.399	.228	.072	.377	.216	.069	.357	.206	.066	.338	.196	.063	
2.0	.352	.193	.059	.341	.188	.058	.321	.179	.055	.303	.170	.053	.285	.161	.051	
3.0	.311	.165	.050	.301	.161	.049	.283	.153	.047	.266	.146	.045	.250	.139	.043	
4.0	.278	.144	.042	.269	.141	.042	.253	.134	.040	.238	.128	.038	.223	.121	.037	
5.0	.252	.128	.037	.244	.125	.036	.229	.119	.035	.215	.113	.034	.202	.108	.032	
6.0	.230	.115	.033	.223	.112	.032	.209	.107	.031	.196	.102	.030	.184	.097	.029	
7.0	.211	.104	.030	.205	.102	.029	.192	.097	.028	.181	.093	.027	.170	.088	.026	
8.0	.195	.096	.027	.190	.093	.026	.178	.089	.025	.168	.085	.024	.158	.081	.024	
9.0	.182	.088	.025	.176	.086	.024	.166	.082	.023	.156	.078	.022	.147	.075	.022	
10.0	.170	.081	.023	.165	.080	.022	.155	.076	.021	.146	.073	.021	.138	.069	.020	

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						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.305	.305	.305	.261	.261	.261	.178	.178	.178	.102	.102	.102	.033	.033	.033	
1.0	.303	.271	.242	.259	.233	.208	.177	.160	.144	.102	.093	.084	.033	.030	.027	
2.0	.297	.248	.207	.254	.214	.179	.174	.148	.125	.100	.086	.073	.032	.028	.024	
3.0	.289	.232	.186	.248	.200	.161	.170	.139	.113	.098	.081	.067	.032	.026	.022	
4.0	.282	.219	.172	.242	.190	.149	.166	.132	.105	.096	.077	.062	.031	.025	.020	
5.0	.274	.210	.162	.235	.181	.141	.162	.127	.100	.094	.074	.059	.030	.024	.019	
6.0	.266	.202	.155	.229	.175	.135	.158	.122	.096	.092	.072	.057	.030	.024	.019	
7.0	.259	.195	.150	.223	.169	.131	.154	.119	.093	.089	.070	.055	.029	.023	.018	
8.0	.252	.189	.146	.217	.164	.128	.150	.115	.091	.087	.068	.054	.028	.022	.018	
9.0	.245	.185	.143	.211	.160	.125	.147	.113	.089	.085	.067	.053	.028	.022	.018	
10.0	.239	.180	.141	.206	.157	.123	.143	.110	.087	.084	.065	.052	.027	.021	.017	



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.

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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	7.3	8.8	7.8	9.2	9.8	7.6	9.1	8.1	9.6	10.1
3H	9.0	10.4	9.6	10.9	11.5	10.3	11.7	10.8	12.2	12.8
4H	9.7	11.0	10.3	11.6	12.1	11.9	13.1	12.4	13.7	14.2
6H	10.3	11.5	10.8	12.0	12.6	13.5	14.7	14.1	15.3	15.9
8H	10.5	11.7	11.0	12.2	12.8	14.4	15.6	15.0	16.2	16.8
12H	10.6	11.8	11.2	12.3	12.9	15.5	16.7	16.1	17.2	17.8
4H 2H	8.4	9.7	8.9	10.2	10.7	8.6	9.9	9.1	10.4	11.0
3H	10.5	11.6	11.0	12.2	12.8	11.5	12.6	12.0	13.2	13.8
4H	11.4	12.5	12.0	13.1	13.7	13.1	14.2	13.7	14.8	15.4
6H	12.2	13.1	12.8	13.7	14.4	15.0	15.9	15.6	16.5	17.2
8H	12.4	13.3	13.1	14.0	14.7	16.0	16.9	16.6	17.5	18.2
12H	12.7	13.5	13.3	14.1	14.8	17.2	18.0	17.8	18.6	19.3
8H 4H	12.4	13.3	13.1	14.0	14.7	13.7	14.6	14.4	15.2	16.0
6H	13.7	14.4	14.3	15.1	15.8	15.9	16.6	16.5	17.3	18.0
8H	14.2	14.9	14.9	15.6	16.3	17.1	17.8	17.8	18.4	19.2
12H	14.6	15.2	15.3	15.9	16.7	18.5	19.1	19.2	19.8	20.6
12H 4H	12.7	13.5	13.4	14.2	14.9	13.8	14.7	14.5	15.3	16.0
6H	14.2	14.9	14.9	15.6	16.3	16.1	16.8	16.8	17.5	18.2
8H	15.0	15.6	15.7	16.3	17.1	17.5	18.1	18.2	18.7	19.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 102.9 lm Total Lamp Luminous Flux. (Slog(F/F0) = -7.9)



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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	44	32	25	19
0.80	55	42	33	54	41	33	51	40	33	25
1.00	63	50	41	61	49	40	58	50	39	31
1.25	70	57	48	68	56	47	64	54	46	37
1.50	75	62	53	73	61	53	68	58	51	41
2.00	83	71	62	80	69	61	75	66	59	48
2.50	88	77	68	84	75	67	79	70	64	52
3.00	91	82	74	88	79	72	82	75	68	56
4.00	96	88	81	93	85	79	86	80	75	61
5.00	100	92	86	96	89	83	89	83	79	64
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			



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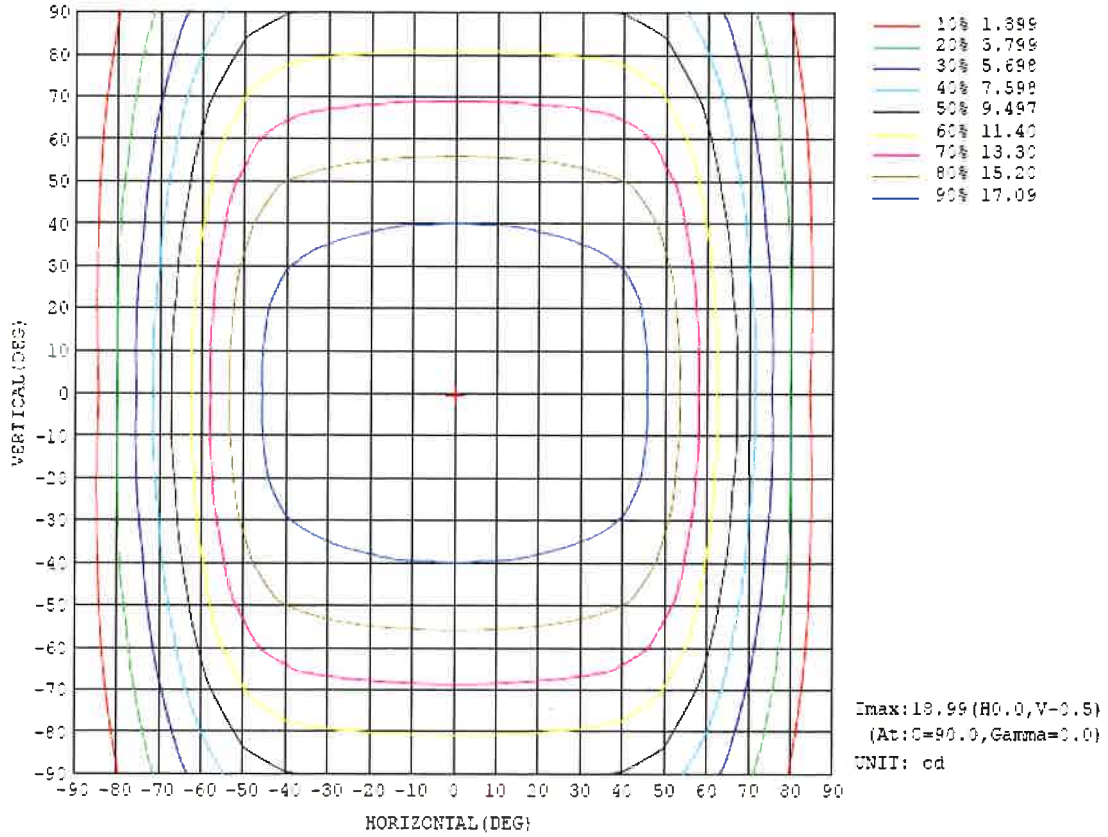
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**2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**

**ISOCANDELA DIAGRAM**



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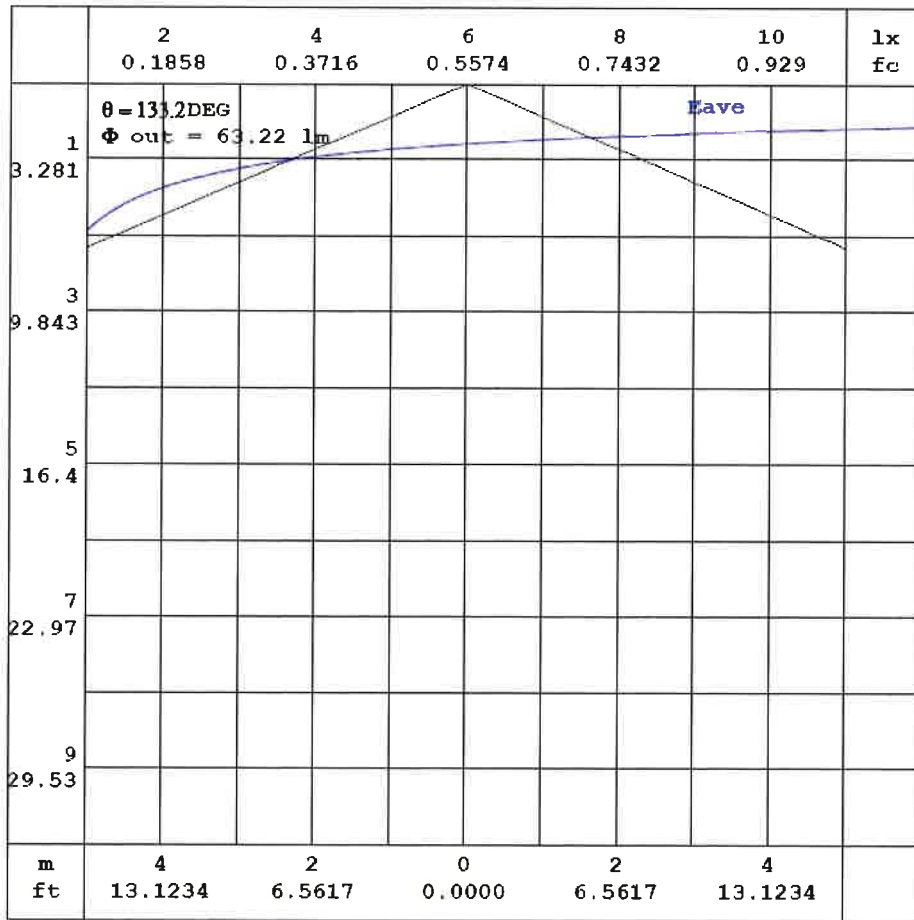
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**2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**

**AAI CURVES**



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



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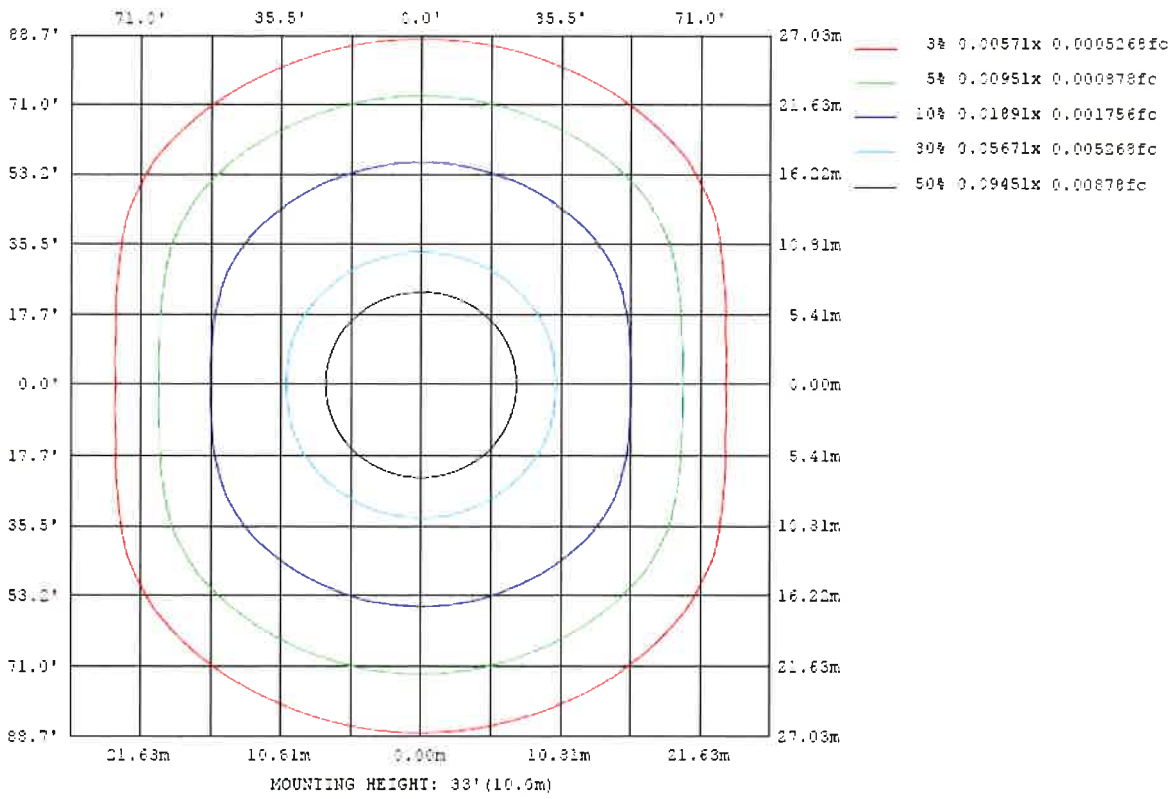
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**2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**

**ISOLUX DIAGRAM**



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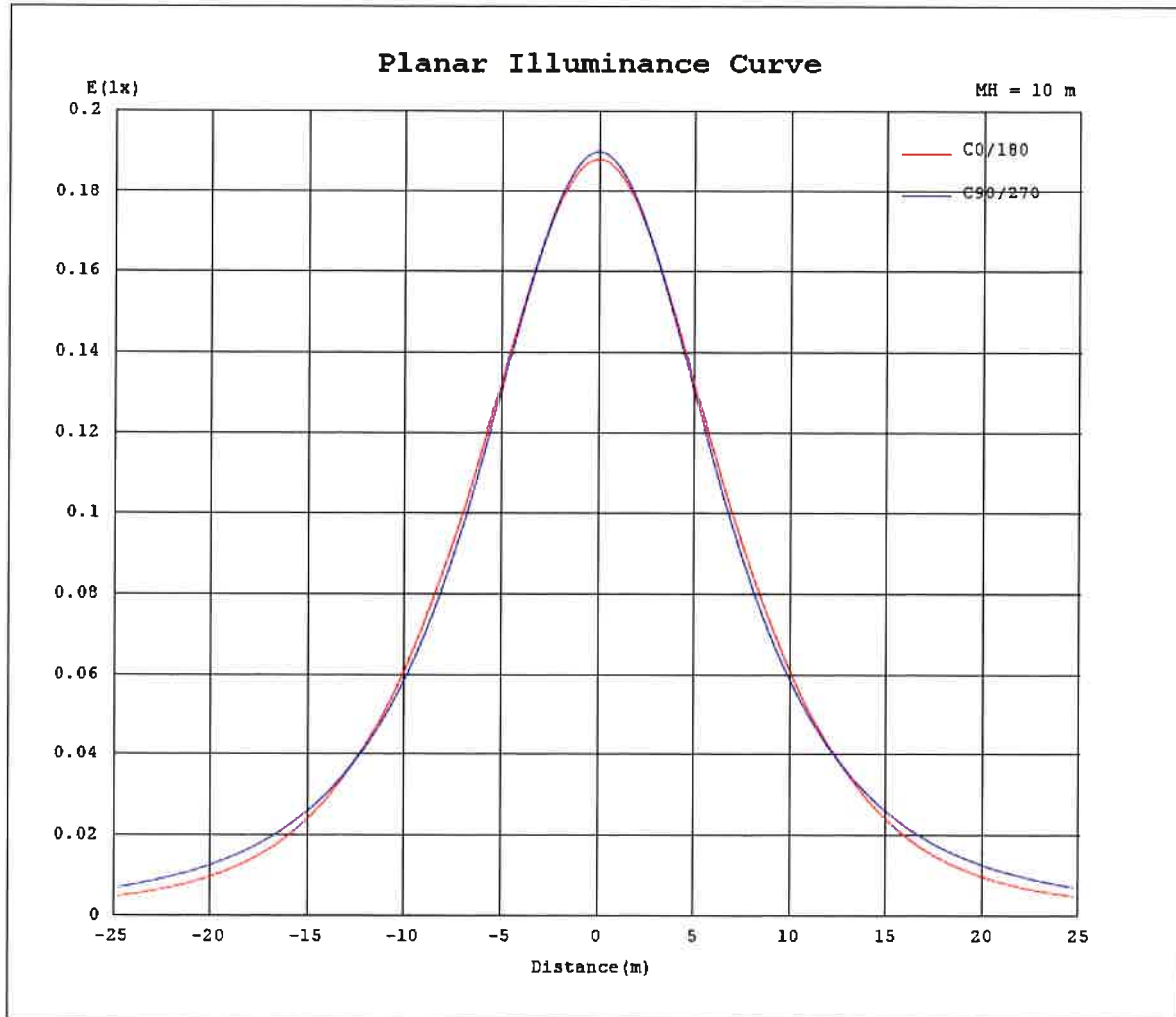
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**2.3 2700K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 2700K color)**



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

<b>Ölçülen Güç (W)</b> (Input Power)	7,262
<b>Ölçülen Gerilim (V)</b> (Input Voltage)	48 VDC
<b>Ölçülen Akım (A)</b> (Input Current)	0,1513
<b>Güç Faktörü (PF)</b> (Power Factor)	-
<b>Ölçülen Frekans (Hz)</b> (Input Frequency)	-
<b>Ortam Sıcaklığı / Bağıl Nem</b> (Ambient Temperature / Relative Humidity)	25 °C 48% Rh
<b>Stabilizasyon Süresi</b> (Stabilization Time)	60 dk ±5dk

**Spektrokolorimetrik Ölçüm Sonuçları**  
(Spectrocolorimetric Measurement Results)

<b>Chrom x</b>	0,4577
<b>Chrom y</b>	0,4116
<b>Duv</b>	0,0005
<b>Chrom u'</b>	0,2607
<b>Chrom v'</b>	0,5274
<b>Peak</b>	611 nm
<b>Dominant</b>	584 nm
<b>CCT</b>	2738 K
<b>Nominal CCT</b>	-
<b>Ra(CRI)</b>	79
<b>R9</b>	18
<b>S/P Ratio</b>	1,1
<b>Preburning time</b>	1 hr
<b>Test Configuration</b>	4π



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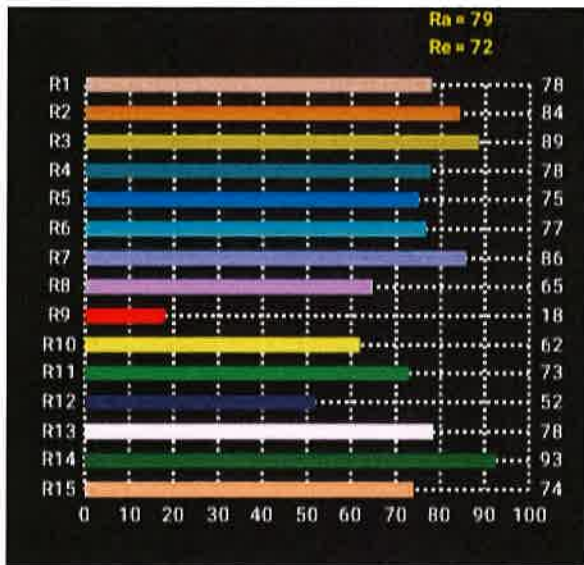
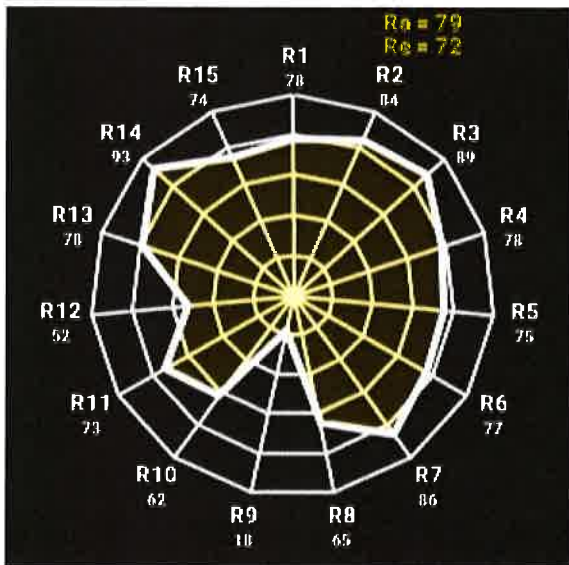
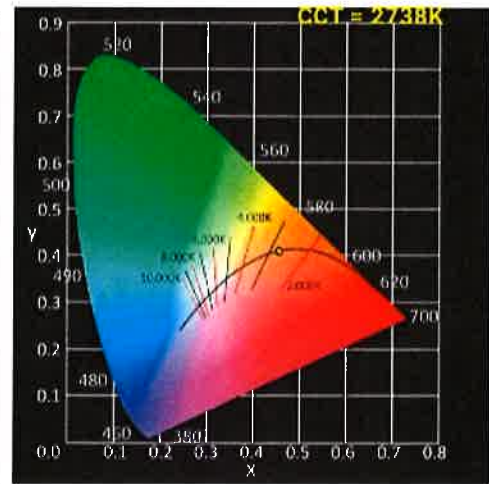
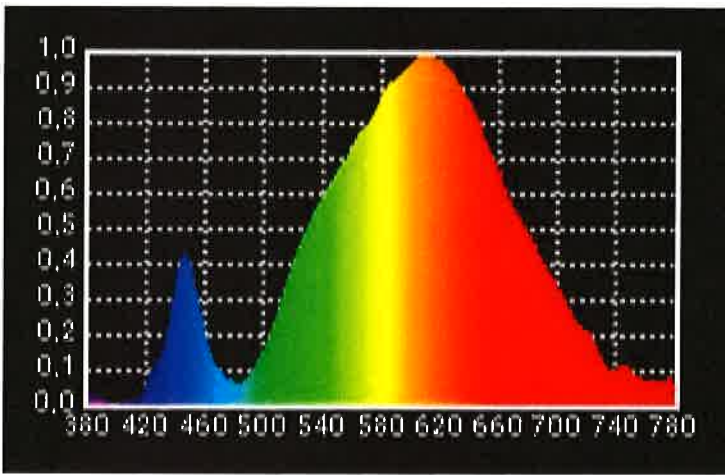
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**2.4 2700K Renk Spektrokolorimetrik Deney Sonuçları (spectrocolorimetric Test Results of the 2700K color)**

**Spectral Power Distribution**



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

**Elektriksel Ölçümler**

(Electrical Measurements)

<b>Ölçülen Güç (W)</b> (Input Power)	7,286
<b>Ölçülen Gerilim (V)</b> (Input Voltage)	48 VDC
<b>Ölçülen Akım (A)</b> (Input Current)	0,1518
<b>Güç Faktörü (PF)</b> (Power Factor)	-
<b>Ölçülen Frekans (Hz)</b> (Input Frequency)	-
<b>Ortam Sıcaklığı / Bağıl Nem</b> (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
<b>Stabilizasyon Süresi</b> (Stabilization Time)	60 dk ±5dk

**Fotometrik Ölçüm Sonuçları**

(Photometric Measurement Results)

<b>Toplam Işık Akısı</b> (Total Luminous Flux) (lm)	131,52
<b>Maksimum Işık Şiddeti</b> (Max. Light Intensity) (cd)	23,25
<b>Armatür Etkinliği</b> (Luminaire Efficacy) (lm/W)	18,05



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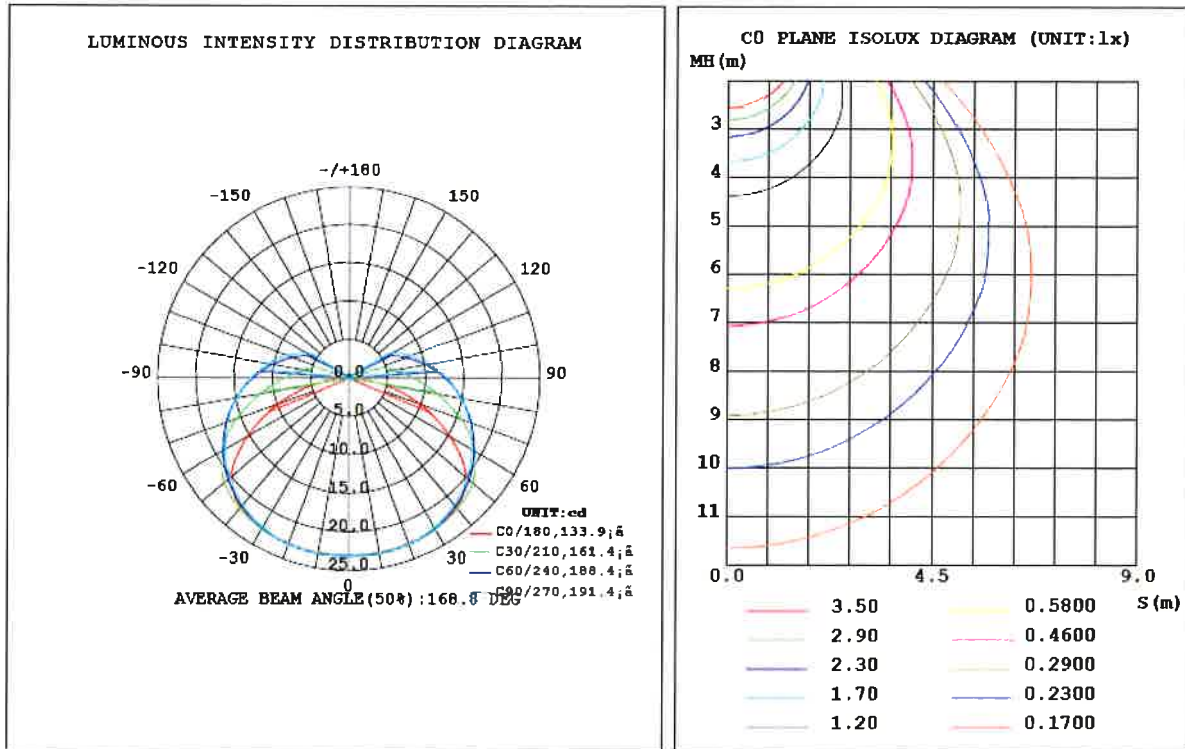
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**2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)**



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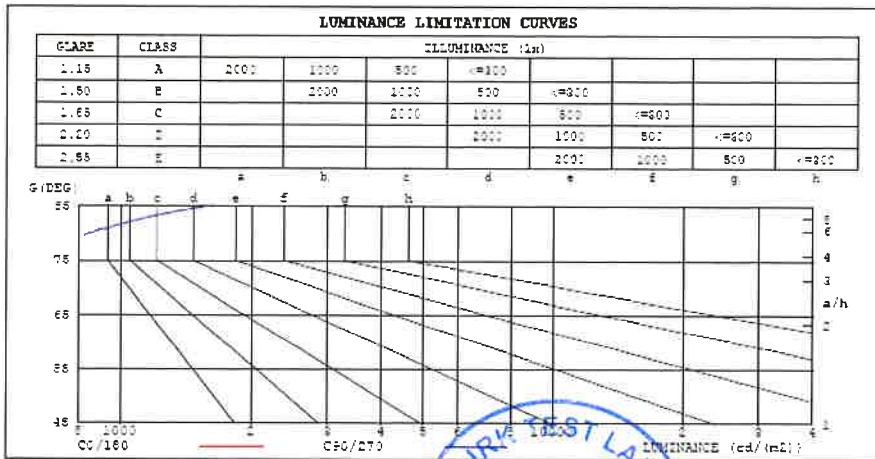
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**2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)**

**ZONAL FLUX DIAGRAM**  
**AND LUMINANCE LIMITATION CURVES**

ZONAL FLUX DIAGRAM:

y	C0	C45	C90	C135	C180	C225	C270	C315	y	Φ none	Φ total	Φlum, lamp
5	23.02	23.16	23.23	23.16	23.02	23.16	23.23	23.16	0- 5	0.5521	0.5531	0.42, 0.42
10	23.00	23.17	23.24	23.17	23.00	23.17	23.24	23.17	5- 10	1.656	2.209	1.68, 1.69
15	22.94	23.13	23.17	23.13	22.94	23.13	23.17	23.13	10- 15	2.744	4.952	2.77, 2.77
20	22.84	23.04	23.01	23.04	22.84	23.04	23.01	23.04	15- 20	3.800	8.752	6.66, 6.66
25	22.70	22.88	22.78	22.88	22.70	22.88	22.78	22.88	20- 25	4.807	13.56	10.3, 10.3
30	22.50	22.65	22.44	22.65	22.50	22.65	22.44	22.65	25- 30	5.749	19.31	14.7, 14.7
35	22.26	22.35	22.02	22.35	22.26	22.35	22.02	22.35	30- 35	6.607	25.92	19.7, 19.7
40	21.94	21.95	21.51	21.95	21.94	21.95	21.51	21.95	35- 40	7.369	33.28	25.4, 25.4
45	21.17	21.45	20.91	21.45	21.17	21.45	20.91	21.45	40- 45	8.010	41.29	31.4, 31.4
50	19.94	20.87	20.22	20.87	19.94	20.87	20.22	20.87	45- 50	8.483	49.72	37.8, 37.8
55	17.90	20.17	19.45	20.17	17.90	20.17	19.45	20.17	50- 55	8.755	58.51	44.5, 44.5
60	15.28	19.22	18.60	19.22	15.28	19.22	18.60	19.22	55- 60	8.768	67.30	51.2, 51.2
65	12.55	18.21	17.71	18.21	12.55	18.21	17.71	18.21	60- 65	8.550	76.15	57.7, 57.7
70	9.856	17.14	16.82	17.14	9.856	17.14	16.82	17.14	65- 70	8.177	84.92	62.9, 62.9
75	7.046	15.90	15.89	15.90	7.046	15.90	15.89	15.90	70- 75	7.646	91.67	69.7, 69.7
80	4.456	14.57	14.91	14.57	4.456	14.57	14.91	14.57	75- 80	6.979	95.65	75.75
85	2.058	13.22	13.90	13.22	2.058	13.22	13.90	13.22	80- 85	6.284	104.9	79.0, 79.0
90	0	11.80	12.84	11.80	0	11.80	12.84	11.80	85- 90	5.514	110.4	84.84
95	0	10.41	11.76	10.41	0	10.41	11.76	10.41	90- 95	4.834	115.2	87.6, 87.6
100	0	9.035	10.72	9.035	0	9.035	10.72	9.035	95-100	4.213	119.5	90.0, 90.0
105	0	7.796	9.581	7.796	0	7.796	9.581	7.796	100-105	3.597	123.1	92.6, 92.6
110	0	6.655	8.552	6.655	0	6.655	8.552	6.655	105-110	2.979	126.0	95.0, 95.0
115	0	4.129	7.552	4.129	0	4.129	7.552	4.129	110-115	2.344	128.4	97.0, 97.0
120	0	1.629	6.587	1.629	0	1.629	6.587	1.629	115-120	1.662	130.1	98.9, 98.9
125	0	1.164	0.9467	1.164	0	1.164	0.9467	1.164	120-125	0.7222	130.8	99.5, 99.5
130	0	0.8036	0.6124	0.8036	0	0.8036	0.6124	0.8036	125-130	0.2906	131.1	99.7, 99.7
135	0	0.5322	0.4517	0.5322	0	0.5322	0.4517	0.5322	130-135	0.1875	131.2	99.8, 99.8
140	0	0.4286	0.4252	0.4286	0	0.4286	0.4252	0.4286	135-140	0.1192	131.4	99.9, 99.9
145	0	0.1690	0.2221	0.1690	0	0.1690	0.2221	0.1690	140-145	0.0623	131.5	100, 100
150	0	0.0510	0.1246	0.0510	0	0.0510	0.1246	0.0510	145-150	0.0285	131.5	100, 100
155	0	0	0.0271	0	0	0	0.0271	0	150-155	0.0066	131.5	100, 100
160	0	0	0	0	0	0	0	0	155-160	0.0005	131.5	100, 100
165	0	0	0	0	0	0	0	0	160-165	0	131.5	100, 100
170	0	0	0	0	0	0	0	0	165-170	0	131.5	100, 100
175	0	0	0	0	0	0	0	0	170-175	0	131.5	100, 100
180	0	0	0	0	0	0	0	0	175-180	0	131.5	100, 100



LUMINANCE cd/m²

G (DEG)	C0/180	C90/270
85	236	1595
80	257	854
75	272	614
70	285	452
65	297	419
60	306	372
55	312	339
50	316	315
45	319	296

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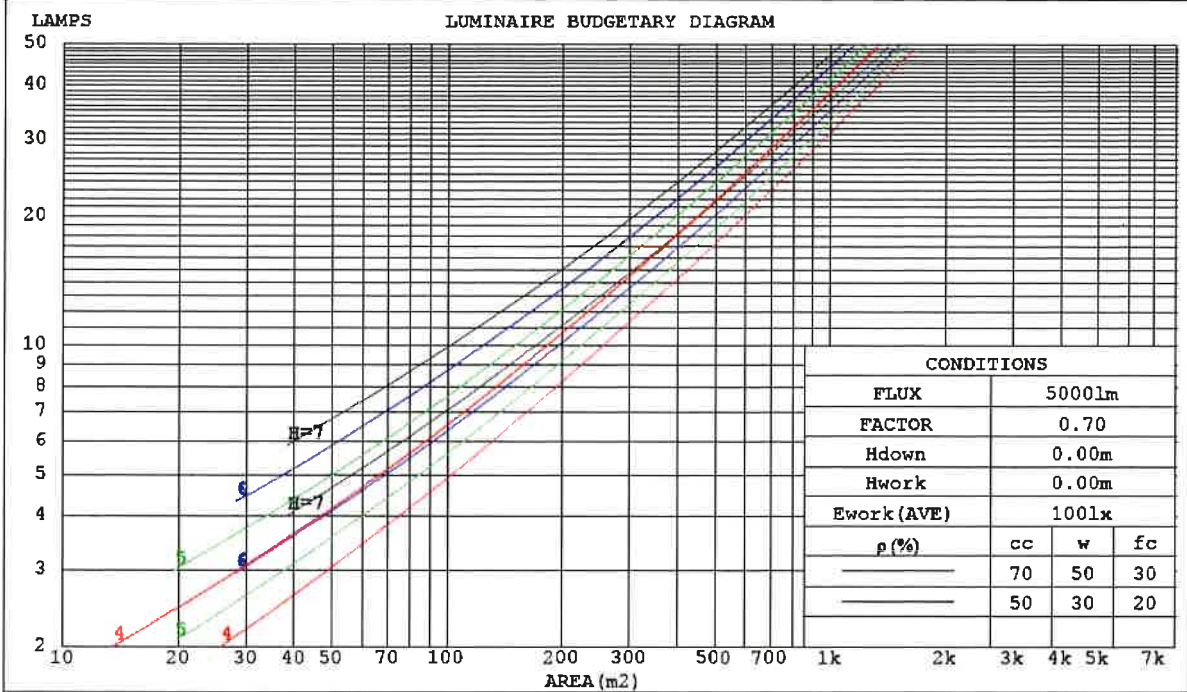
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**ÖLÇÜM RAPORU**  
**MEASUREMENT REPORT**

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

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization (CU)									
0.0	1.15	1.15	1.15	1.11	1.11	1.11	1.02	1.02	1.02	.94	.94	.94	.87	.87	.87	.84
1.0	.95	.89	.84	.91	.85	.81	.83	.79	.75	.77	.73	.70	.70	.68	.65	.62
2.0	.80	.72	.65	.77	.69	.63	.70	.64	.59	.65	.60	.55	.59	.55	.51	.48
3.0	.69	.60	.52	.66	.57	.50	.61	.53	.47	.56	.50	.45	.51	.46	.42	.39
4.0	.60	.50	.43	.58	.49	.42	.53	.45	.39	.49	.42	.37	.45	.39	.35	.32
5.0	.53	.43	.36	.51	.42	.35	.47	.39	.33	.43	.37	.31	.40	.34	.30	.27
6.0	.47	.38	.31	.46	.37	.30	.42	.34	.28	.39	.32	.27	.36	.30	.25	.23
7.0	.43	.33	.27	.41	.32	.26	.38	.30	.25	.35	.28	.23	.32	.27	.22	.20
8.0	.39	.30	.23	.37	.29	.23	.35	.27	.22	.32	.25	.21	.30	.24	.20	.17
9.0	.35	.27	.21	.34	.26	.20	.32	.24	.19	.29	.23	.18	.27	.22	.17	.15
10.0	.32	.24	.19	.31	.23	.18	.29	.22	.17	.27	.21	.17	.25	.20	.16	.14



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## ÖLÇÜM RAPORU MEASUREMENT REPORT

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### 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
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.414	.235	.075	.401	.229	.073	.379	.217	.069	.358	.206	.066	.338	.196	.063	
2.0	.353	.194	.059	.342	.189	.058	.322	.179	.056	.303	.170	.053	.285	.161	.051	
3.0	.311	.166	.050	.301	.161	.049	.283	.153	.047	.265	.145	.045	.249	.138	.043	
4.0	.279	.145	.043	.270	.141	.042	.253	.134	.040	.237	.127	.038	.222	.121	.037	
5.0	.252	.128	.037	.244	.125	.036	.229	.119	.035	.214	.113	.034	.201	.107	.032	
6.0	.230	.115	.033	.223	.112	.032	.209	.107	.031	.196	.102	.030	.183	.097	.029	
7.0	.211	.105	.030	.205	.102	.029	.192	.097	.028	.180	.092	.027	.169	.088	.026	
8.0	.196	.096	.027	.189	.093	.026	.178	.089	.025	.167	.084	.024	.156	.080	.023	
9.0	.182	.088	.025	.176	.086	.024	.165	.082	.023	.155	.078	.022	.146	.074	.021	
10.0	.170	.081	.023	.165	.080	.022	.155	.076	.021	.145	.072	.021	.137	.069	.020	

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	.313	.313	.313	.267	.267	.267	.182	.182	.182	.105	.105	.105	.034	.034	.034	
1.0	.311	.278	.249	.266	.239	.215	.182	.164	.148	.105	.095	.086	.034	.031	.028	
2.0	.305	.256	.215	.261	.220	.186	.179	.152	.129	.103	.089	.076	.033	.029	.025	
3.0	.297	.239	.193	.255	.206	.167	.175	.143	.117	.101	.084	.069	.032	.027	.023	
4.0	.289	.227	.179	.248	.196	.156	.171	.137	.110	.099	.080	.065	.032	.026	.021	
5.0	.282	.217	.170	.242	.188	.148	.167	.131	.104	.096	.077	.062	.031	.025	.020	
6.0	.274	.209	.163	.235	.181	.142	.162	.127	.100	.094	.075	.060	.030	.024	.020	
7.0	.267	.203	.158	.229	.176	.138	.158	.123	.097	.092	.073	.058	.030	.024	.019	
8.0	.260	.197	.154	.224	.171	.134	.155	.120	.095	.090	.071	.057	.029	.023	.019	
9.0	.253	.192	.151	.218	.167	.132	.151	.117	.094	.088	.069	.056	.029	.023	.018	
10.0	.247	.188	.149	.213	.163	.130	.148	.115	.092	.086	.068	.055	.028	.022	.018	



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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	8.0	9.5	8.5	10.0	10.5	8.4	9.9	8.9	10.4	10.9
3H	9.8	11.1	10.3	11.7	12.2	11.2	12.5	11.7	13.0	13.6
4H	10.5	11.8	11.0	12.3	12.9	12.7	14.0	13.2	14.5	15.1
6H	11.0	12.2	11.5	12.8	13.4	14.4	15.6	15.0	16.2	16.8
8H	11.2	12.3	11.7	12.9	13.5	15.3	16.5	15.9	17.1	17.7
12H	11.3	12.4	11.9	13.0	13.7	16.4	17.5	17.0	18.1	18.8
4H 2H	9.1	10.4	9.6	10.9	11.5	9.4	10.7	9.9	11.2	11.8
3H	11.3	12.4	11.9	13.0	13.6	12.3	13.4	12.9	14.0	14.7
4H	12.2	13.3	12.8	13.9	14.6	14.0	15.0	14.6	15.6	16.3
6H	13.0	13.9	13.6	14.6	15.3	15.8	16.8	16.5	17.4	18.1
8H	13.3	14.1	13.9	14.8	15.5	16.9	17.8	17.5	18.4	19.1
12H	13.4	14.3	14.1	14.9	15.7	18.1	18.9	18.7	19.5	20.3
8H 4H	13.3	14.2	13.9	14.8	15.5	14.6	15.5	15.2	16.1	16.8
6H	14.5	15.3	15.2	16.0	16.7	16.8	17.5	17.4	18.2	18.9
8H	15.1	15.7	15.8	16.4	17.2	18.0	18.7	18.7	19.3	20.1
12H	15.5	16.1	16.2	16.8	17.6	19.4	20.0	20.1	20.7	21.5
12H 4H	13.6	14.4	14.2	15.0	15.8	14.7	15.5	15.3	16.2	16.9
6H	15.1	15.8	15.8	16.4	17.2	17.0	17.7	17.7	18.4	19.1
8H	15.9	16.4	16.6	17.1	18.0	18.4	18.9	19.1	19.6	20.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 131.5 lm Total Lamp Luminous Flux. ( $\theta \log(F/F_0) = -7.0$ )



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**ÖLÇÜM RAPORU**  
**MEASUREMENT REPORT****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	32	25	43	32	25	18
0.80	55	41	33	53	41	32	51	39	32	24
1.00	63	49	40	61	48	40	58	49	39	30
1.25	70	56	47	67	55	47	63	53	45	36
1.50	75	62	53	72	60	52	68	58	50	40
2.00	82	71	62	79	69	60	74	65	58	47
2.50	87	76	68	84	74	66	78	70	63	51
3.00	91	81	73	88	79	71	81	74	68	55
4.00	96	87	80	92	85	78	85	79	74	60
5.00	99	92	85	95	89	83	88	83	78	63
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										



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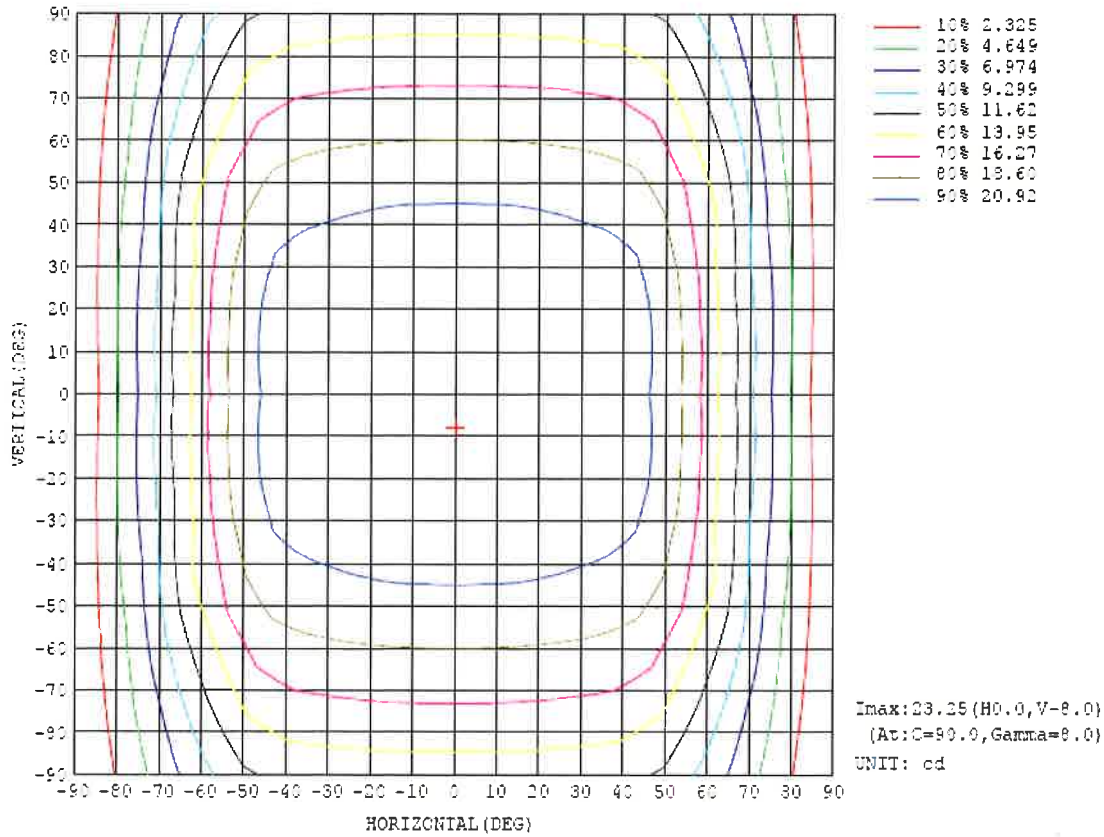
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**ÖLÇÜM RAPORU**  
**MEASUREMENT REPORT**

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

**ISOCANDELA DIAGRAM**



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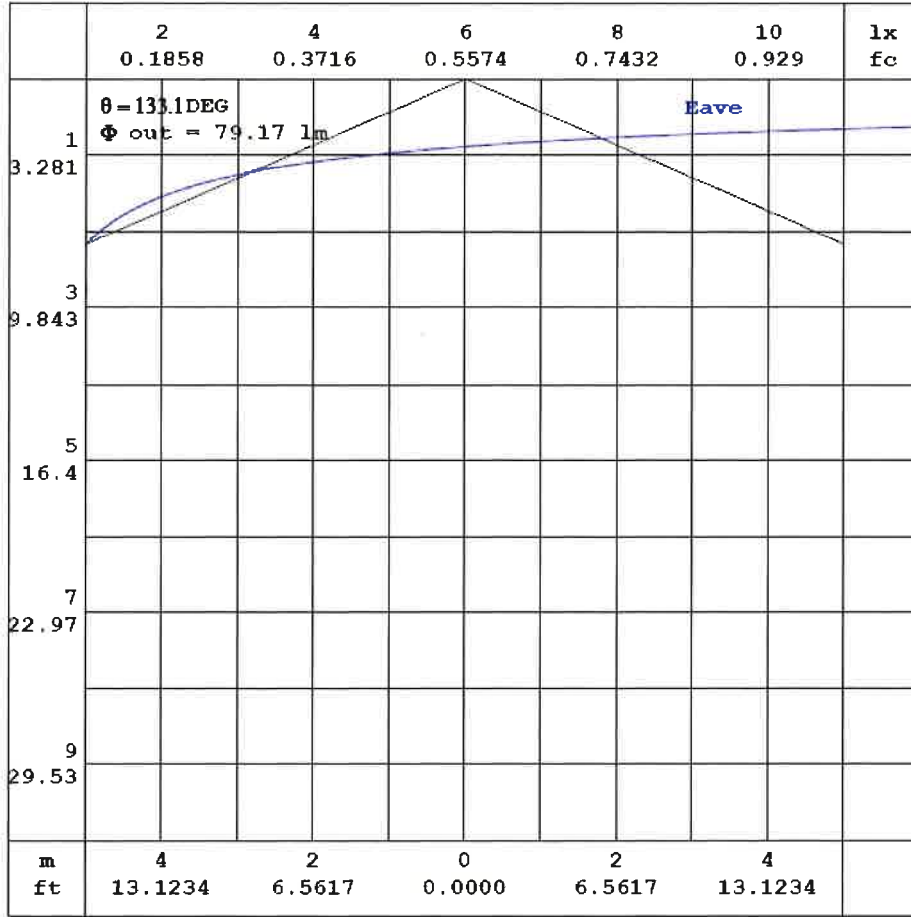
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**2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)****AAI CURVES**

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



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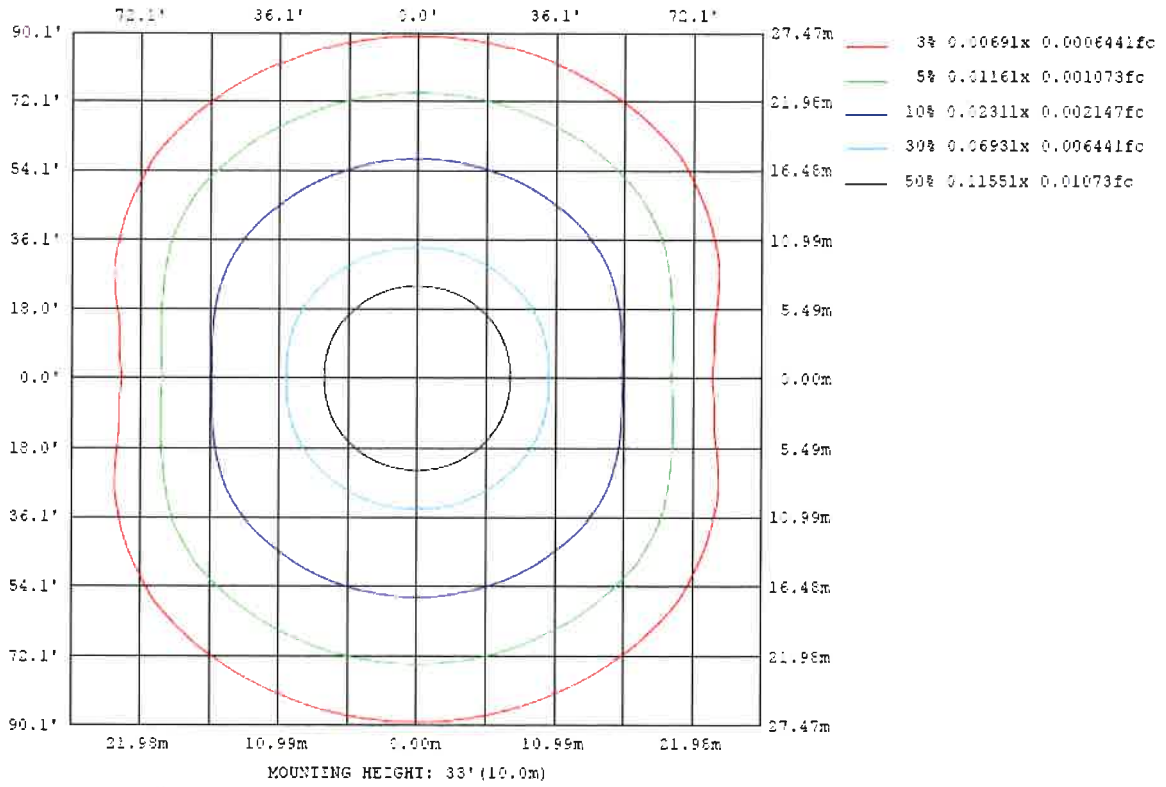
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**2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)**

**ISOLUX DIAGRAM**



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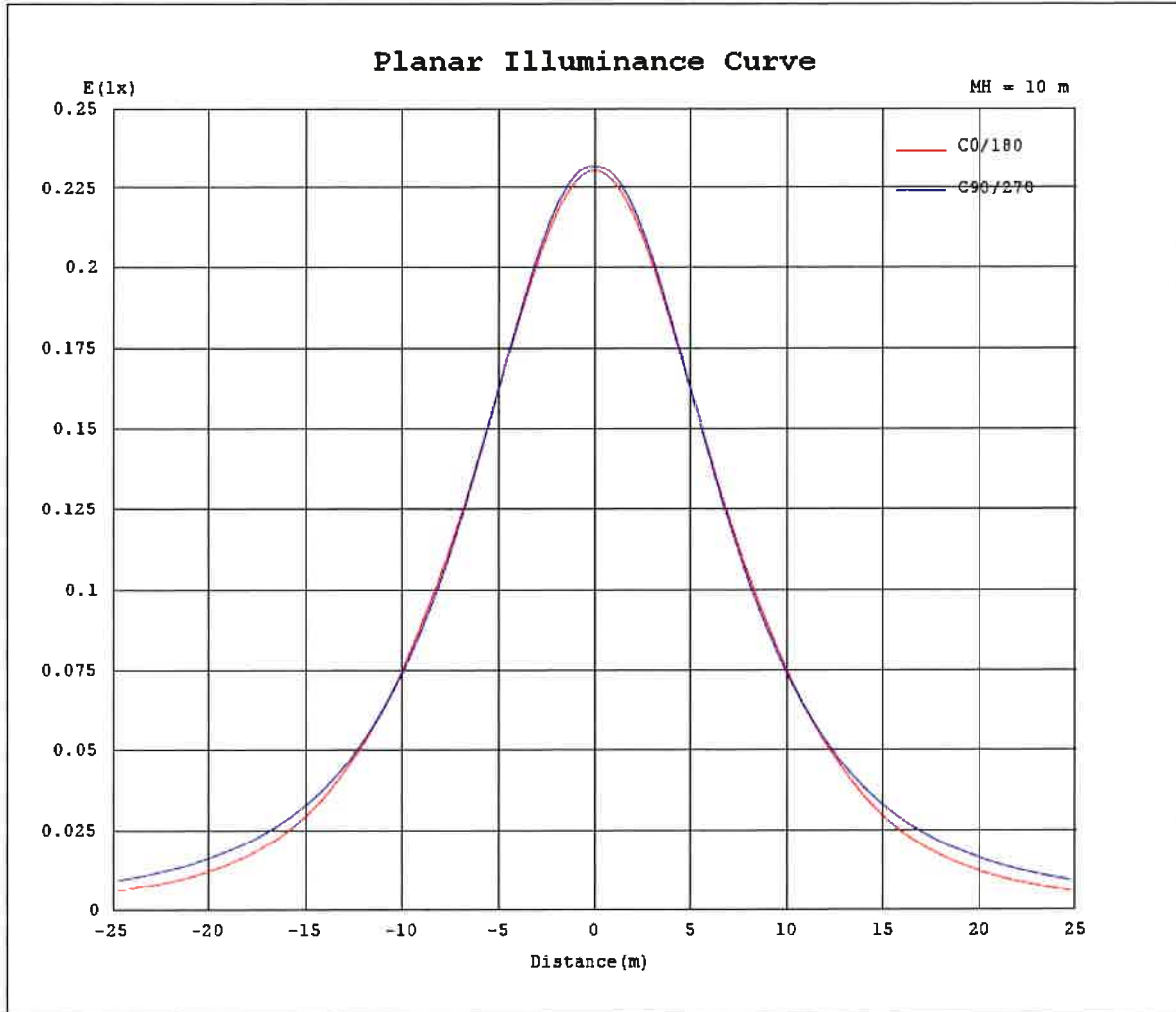
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**2.5 6500K renk Fotometrik Deney Sonuçları (Photometric Test Results of the 6500K color)**



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

(Electrical Measurements)

<b>Ölçülen Güç (W)</b> (Input Power)	7,286
<b>Ölçülen Gerilim (V)</b> (Input Voltage)	48 VDC
<b>Ölçülen Akım (A)</b> (Input Current)	0,1518
<b>Güç Faktörü (PF)</b> (Power Factor)	-
<b>Ölçülen Frekans (Hz)</b> (Input Frequency)	-
<b>Ortam Sıcaklığı / Bağıl Nem</b> (Ambient Temperature / Relative Humidity)	25,1 °C 48% Rh
<b>Stabilizasyon Süresi</b> (Stabilization Time)	60 dk ±5dk

**Spektrokolorimetrik Ölçüm Sonuçları**

(Spectrocolorimetric Measurement Results)

<b>Chrom x</b>	0,3148
<b>Chrom y</b>	0,3286
<b>Duv</b>	0,0019
<b>Chrom u'</b>	0,1995
<b>Chrom v'</b>	0,4684
<b>Peak</b>	450 nm
<b>Dominant</b>	488 nm
<b>CCT</b>	6393 K
<b>Nominal CCT</b>	6000 K
<b>Ra(CRI)</b>	76
<b>R9</b>	-7
<b>S/P Ratio</b>	2,1
<b>Preburning time</b>	1 hr
<b>Test Configuration</b>	4π



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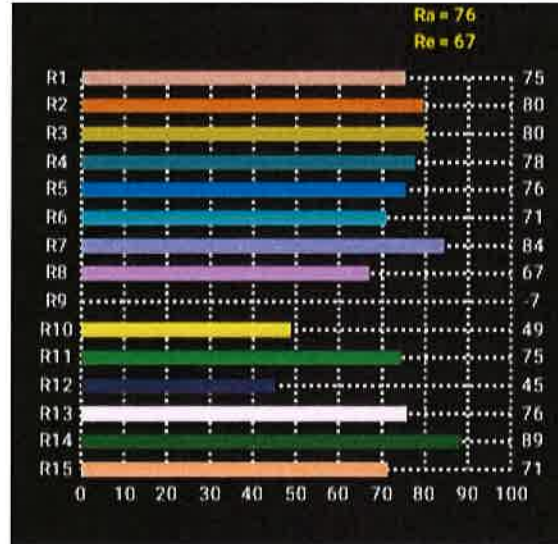
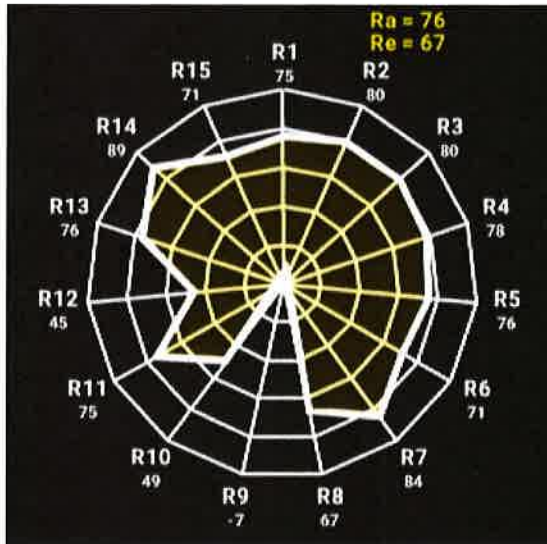
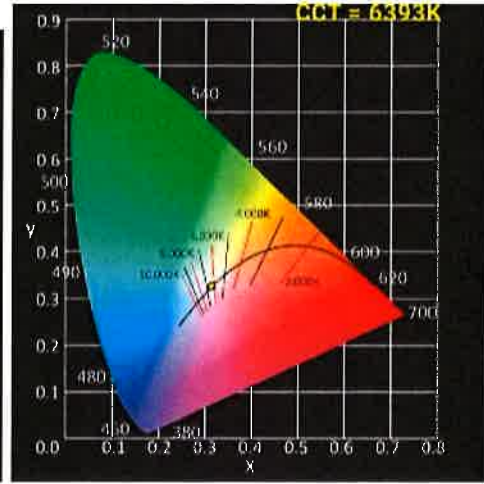
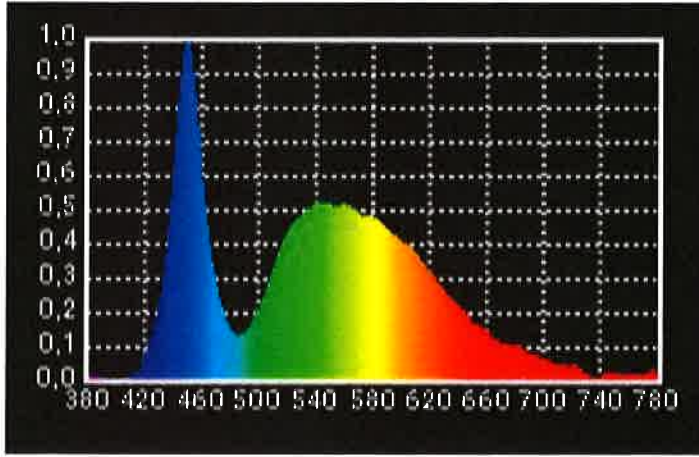
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3.1 DGC'nin Fotoğrafları (Photos of EUT)

