PTC
ÜRÜN TEST VE BELGELENDİRME SAN. TİC. LTD. ŞTİ

DENEY RAPORU
TEST REPORT

Müşteri Adı / Adresi: *Customer name / address*	HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş. *Güllübağlar Mah. Kahramanlar Cad. No:3-1 34906 Pendik / İstanbul / TURKEY*
Rapor ve İstek No: *Report and order no:*	171801-864-21
Numunenin Adı ve Tarifi: *Name and identity of test item:*	Procolor DC 60DW Floodlight Narrow Beam 10° P03002121
Numune Kabul Tarihi: *The date of receipt of test item:*	03.01.2020
Deneyin Yapıldığı Tarih: *Date of test:*	08.01.2020
Rapor Sayfa Sayısı: *Number of pages of the report:*	20
Uygulanan Standart / Metod: *Applied Standart / Method*	IES-LM-79-08 (with TS EN13032-1)
Açıklamalar: *Remarks:*	**Test sonuçları için raporu inceleyiniz.** / *Review the report for test results.*

Mühür / Tarih *Seal / Date*	**Deneyi Yapan Personel** *Person in Performing the Test*	**Laboratuvar Teknik Yöneticisi** *Laboratory Technical Manager*
ÜRÜN TEST VE BELGELENDİRME LTD. ŞTİ. PRODUCT TESTING AND CERTIFICATION 15.01.2020 ONAY APPROVED Vergi No Task Number 733 043 5931 ACCREDITED TEST LABORATORY	Emine Nur ÇİDEM	Murat ÇİTİL

Bu rapor, Laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.
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FOTOMETRİK ÖLÇÜM SONUÇLARI / *PHOTOMETRIC MEAUSEREMENT RESULTS*

Kullanılan Cihaz/EquipmentUsed.....:	Goniophotometer System (LSG-1700B) Sphere System (LMS-7000)
Uygulanan Standart-Metot/Applied Standard-Method.....:	IES-LM-79-08 Electrical and Photometric Measurements of Solid-State Lighting Products TS EN13032-1:2004 +A1:2012LightandLighting – Measurementand Presentation of Photometric Data of Lampsand Luminaires-Part1: Measurementand File.
Deney Ortam Şartları/ExperimentalAmbientConditions.....:	25°C ±1°C,60%RH±5%RH
Armatüre Uygulanan Gerilim / AppliedVoltage.....:	48 V dc
ArmatürMarkası-Üretici/LuminaireBrand-Producer.....:	HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş.
ArmatürKodu-Modeli/LuminaireCode-Model.....:	Procolor DC 60DW Floodlight Narrow Beam 10° P03002121

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Armatürde Ölçülen Toplam Güç/Measured Total Power of Luminaire.....:	40.32 W ;
Armatürün Ölçülen Işık Akısı /MeasuredLuminousFlux of Luminaire.....:	2160.1 lm(Effective Value)
Armatür verimliliği (lm/Watt) / Luminous efficiancy.....:	53.57 lm/Watt
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315):	21.3, 21.1,21.3,20.9

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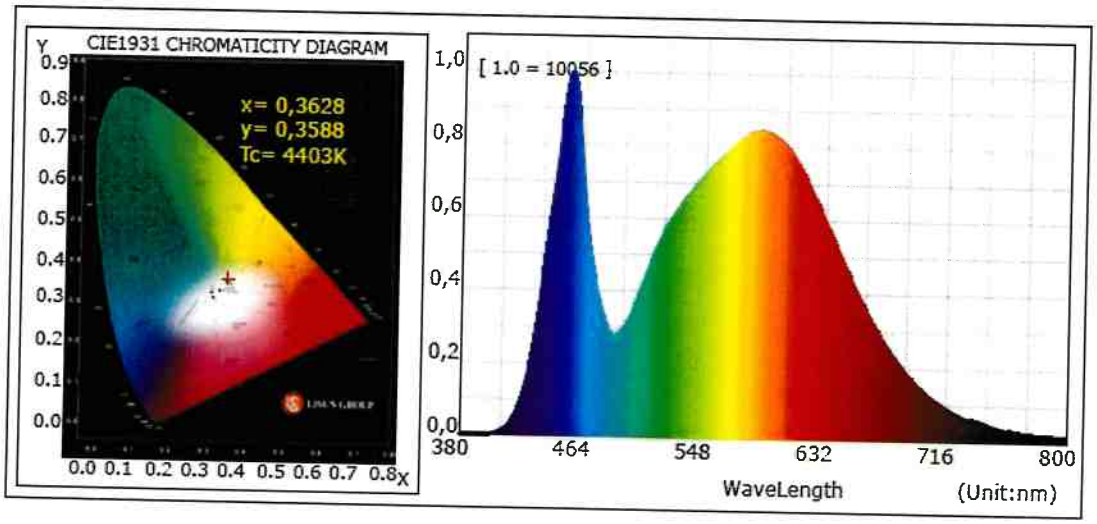

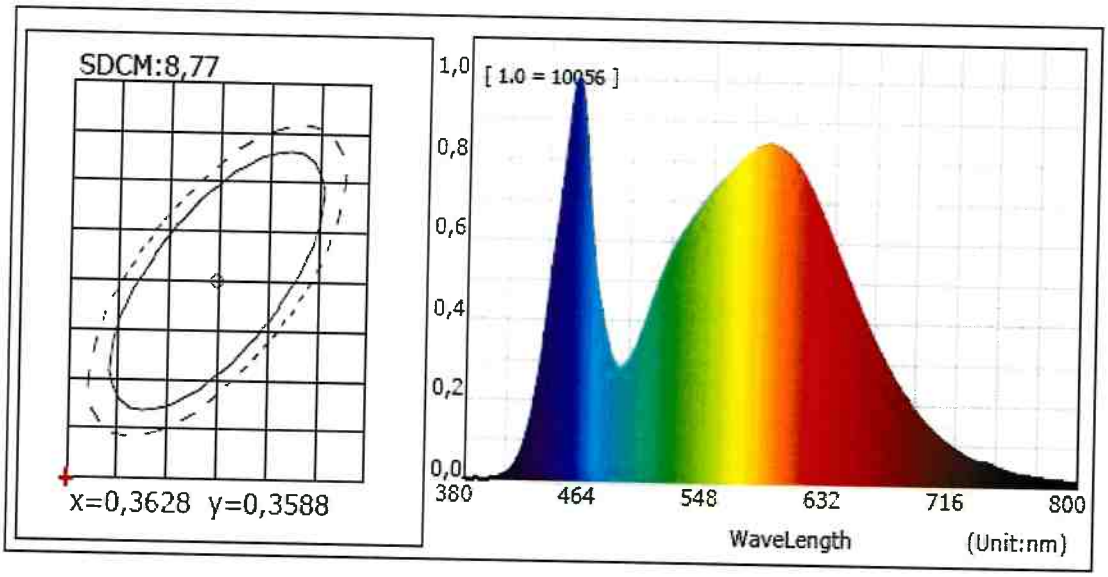

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Date/Time	08.01.2020 12:00
Chromaticity x coord	0,3628
Chromaticity y coord	0,3588
Chromaticity u coord	0,2206
Chromaticity v coord	0,3272
Chromaticity u' coord	0,2206
Chromaticity v' coord	0,4907
Peak Wavelength (nm)	454,7
Half Wavelength (nm)	31,0
Dominant Wavelength (nm)	579,9
Color Purity (%)	16,523
Correlated Color Temperature (deg. K)	4403
SDCM	8,77
Color Rendering Index Average (RA)	82,1
Color Rendering Index (R1)	81
Color Rendering Index (R2)	88
Color Rendering Index (R3)	92
Color Rendering Index (R4)	80
Color Rendering Index (R5)	80
Color Rendering Index (R6)	82
Color Rendering Index (R7)	86
Color Rendering Index (R8)	67
Color Rendering Index (R9)	12
Color Rendering Index (R10)	70
Color Rendering Index (R11)	77
Color Rendering Index (R12)	59
Color Rendering Index (R13)	83
Color Rendering Index (R14)	95
Color Rendering Index (R15)	77

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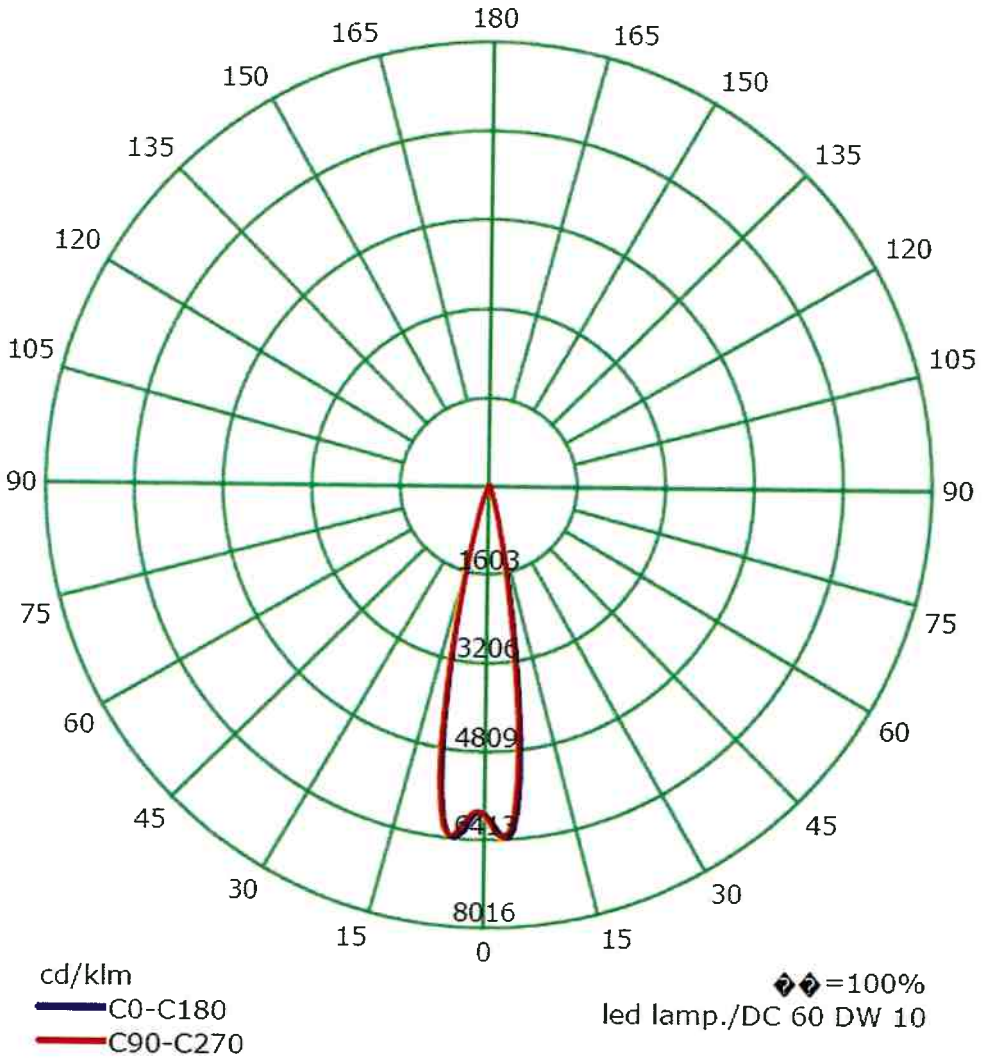
Luminous Intensity Distribution Curve(cd/klm)



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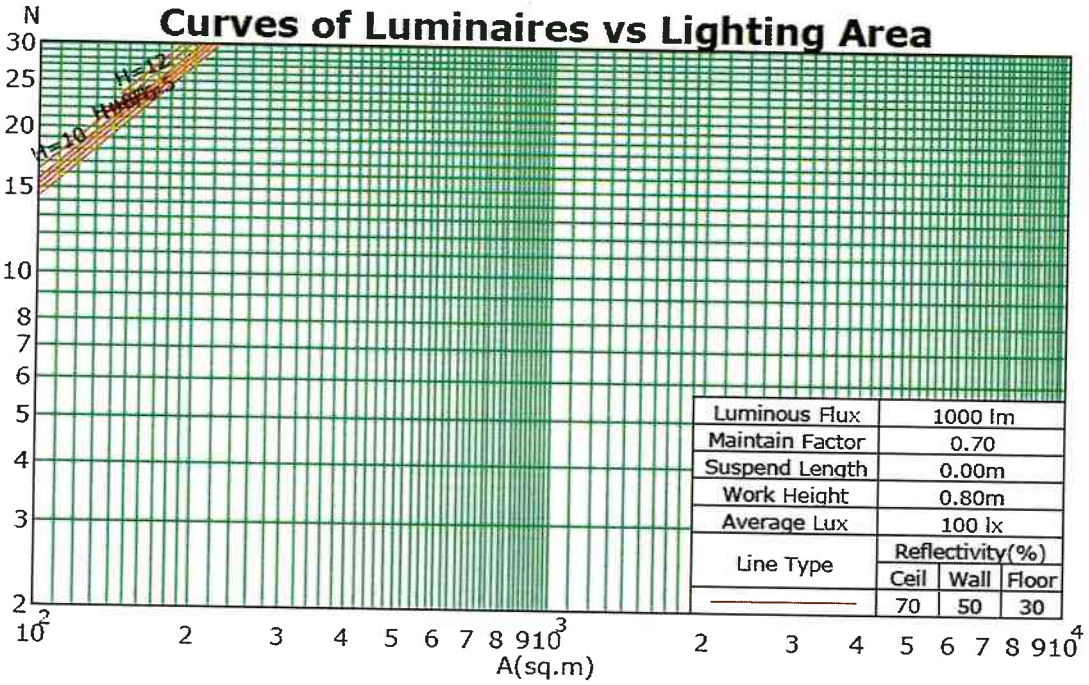
Coefficients Of Utilization - Zonal Cavity Method

RC	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.1	0.1	0.1	0
RW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
RCR	RF = 0.2																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	115	113	111	110	113	111	110	108	107	106	105	103	102	102	100	99	99	97
2	112	108	106	103	110	107	104	102	104	102	100	101	99	98	98	97	96	94
3	109	104	101	98	107	103	100	97	100	98	96	98	96	94	96	94	93	92
4	106	101	97	94	104	100	96	94	98	95	93	96	94	92	94	92	91	89
5	103	98	94	91	102	97	93	91	95	92	90	94	91	89	92	90	88	87
6	100	95	91	88	99	94	91	88	93	90	87	92	89	87	90	88	86	85
7	98	92	89	86	97	92	88	86	91	88	85	90	87	85	89	86	85	84
8	96	90	86	84	95	90	86	84	89	86	83	88	85	83	87	85	83	82
9	94	88	85	82	93	88	84	82	87	84	82	86	83	81	86	83	81	80
10	92	86	83	80	91	86	83	80	85	82	80	85	82	80	84	82	80	79

Spacing Criteria (0-180): 0.38
Spacing Criteria (90-270): 0.38
Spacing Criteria (Diagonal): 0.34

Curves of Luminaires vs Lighting Area



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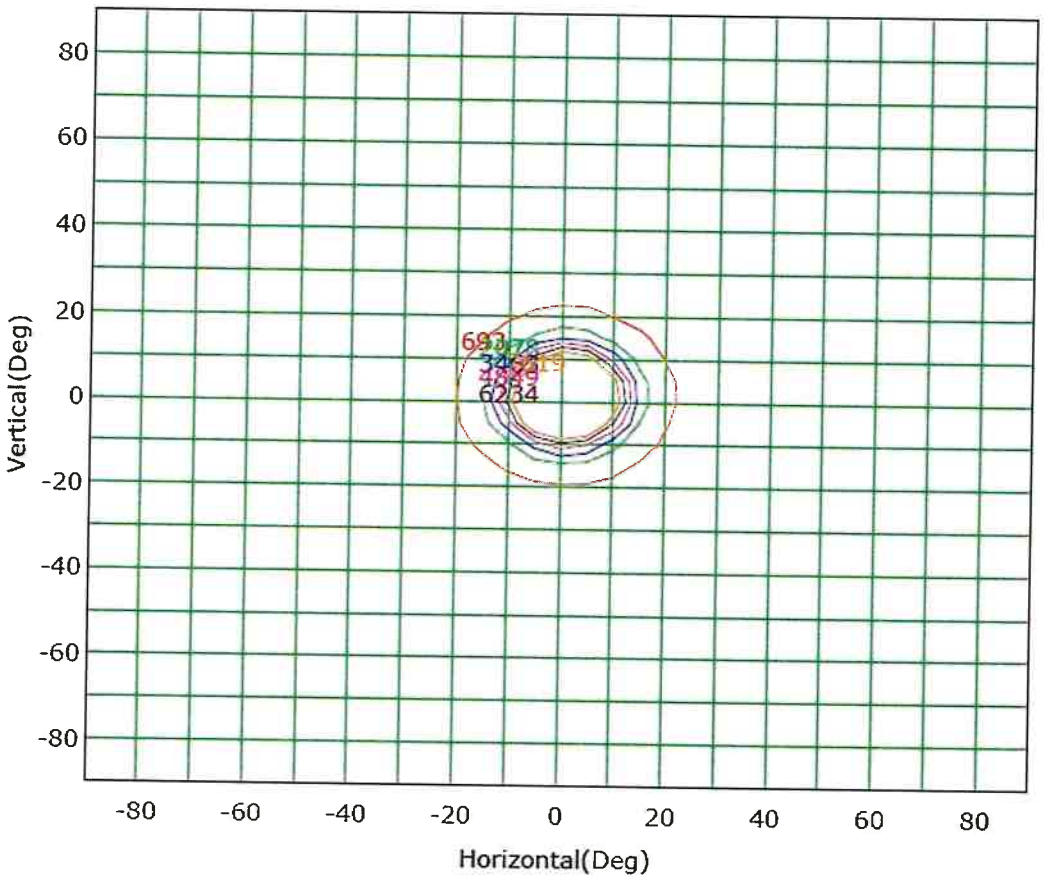
Isocandela (rectangle)



Imax (100%): 13853 cd

(5%): 693 cd	(15%): 2078 cd
(25%): 3463 cd	(35%): 4849 cd
(45%): 6234 cd	(55%): 7619 cd

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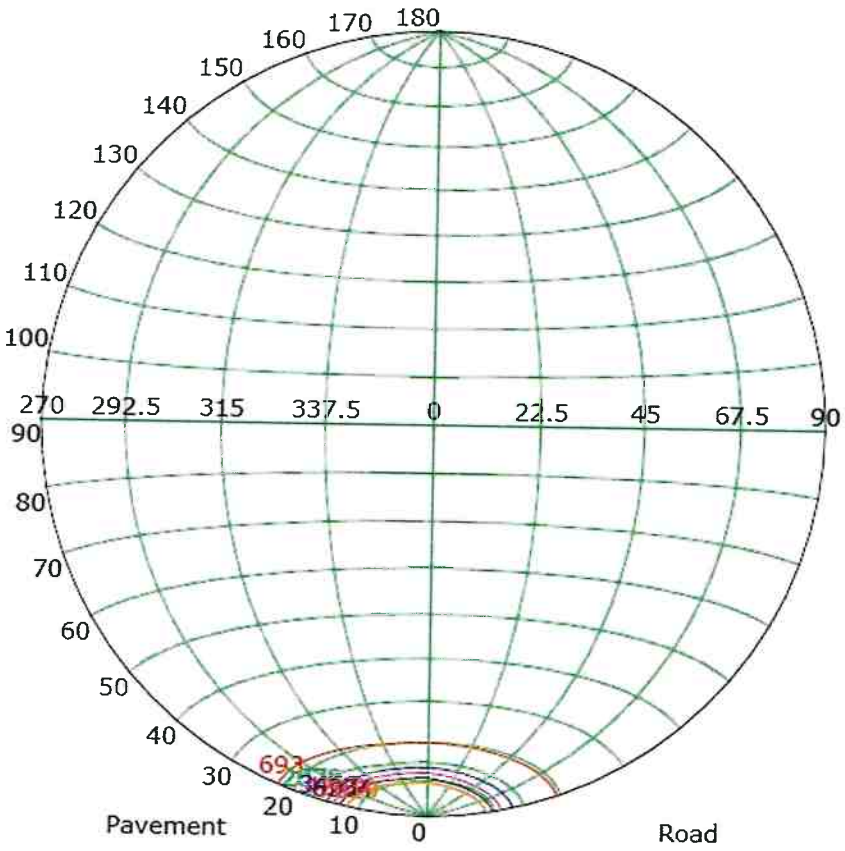
Isocandela (sphere)



Imax (100%): 13853 cd

(5%): 693 cd	(15%): 2078 cd
(25%): 3463 cd	(35%): 4849 cd
(45%): 6234 cd	(55%): 7619 cd

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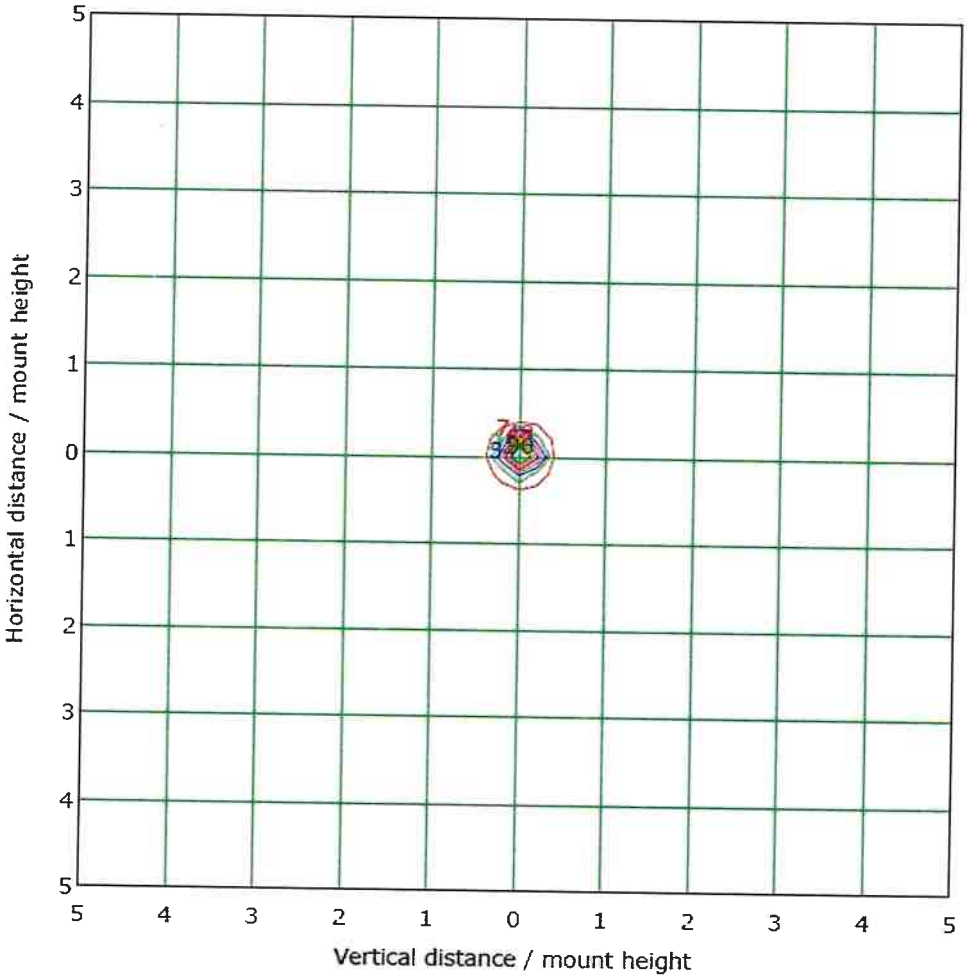
IsoLux Plot



Mounting Height: 10.0m Max Lux(100%): 137.7 lx

(5%): 6.9 lx
(15%): 20.7 lx
(25%): 34.4 lx
(35%): 48.2 lx
(45%): 62.0 lx
(55%): 75.8 lx
(65%): 89.5 lx

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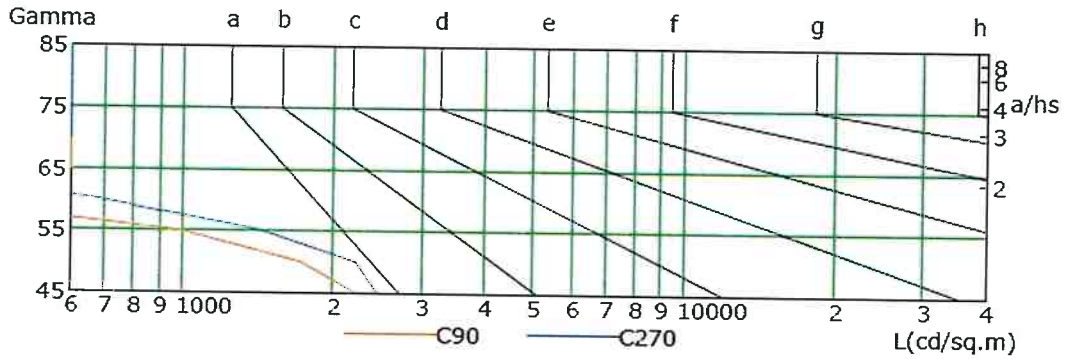
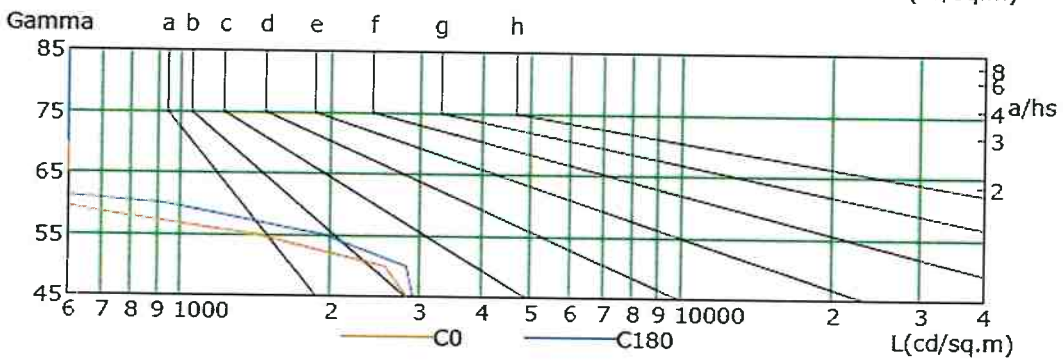
Lum Limit Curve

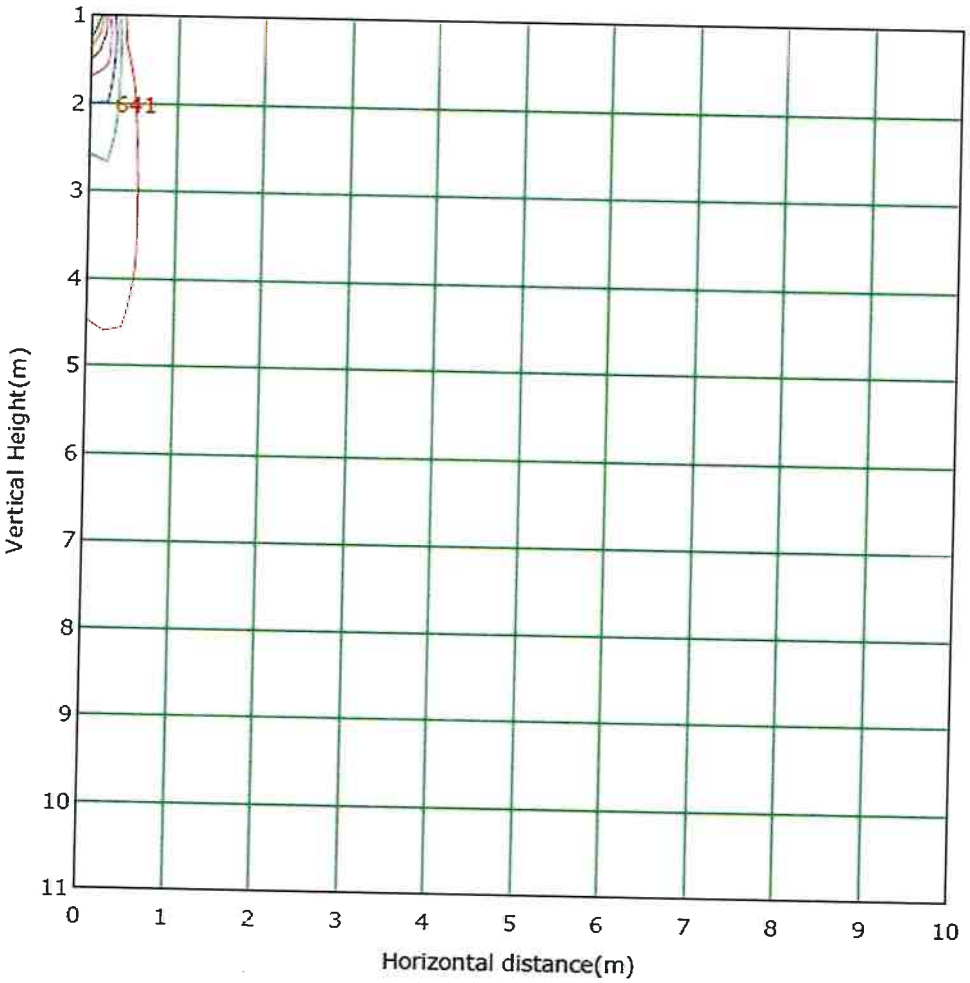
Dazzle	Quality	Illuminance (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h





L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	2838	2564	1423	532	0	0	0	0	0
C90	2217	1721	993	282	0	0	0	0	0
C180	2927	2831	1945	936	170	0	0	0	0
C270	2451	2217	1444	673	239	0	0	0	0

Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 12821.0 lx

(5%): 641.0 lx
(15%):1923.1 lx
(25%):3205.2 lx
(35%):4487.3 lx
(45%):5769.4 lx
(55%):7051.5 lx
(65%):8333.6 lx

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UGR Table

Reflectance: Ceiling (cavity)	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference 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	5.2	5.7	5.4	5.9	6.1	5.5	6.1	5.8	6.3	6.5
3H	5.0	5.5	5.3	5.8	6.0	5.4	5.9	5.7	6.1	6.4
4H	4.9	5.4	5.2	5.7	5.9	5.3	5.8	5.6	6.1	6.3
6H	4.9	5.3	5.2	5.6	5.9	5.3	5.7	5.6	6.0	6.3
8H	4.8	5.3	5.2	5.6	5.9	5.2	5.6	5.5	5.9	6.2
12H	4.8	5.2	5.1	5.5	5.8	5.2	5.6	5.5	5.9	6.2
X=4H Y=2H	5.1	5.6	5.4	5.8	6.1	5.4	5.9	5.7	6.2	6.4
3H	5.0	5.4	5.3	5.7	6.0	5.3	5.7	5.6	6.0	6.3
4H	4.9	5.2	5.2	5.6	5.9	5.2	5.6	5.6	5.9	6.3
6H	4.8	5.1	5.2	5.5	5.9	5.1	5.4	5.5	5.8	6.2
8H	4.7	5.0	5.1	5.4	5.8	5.1	5.4	5.5	5.8	6.2
12H	4.7	4.9	5.1	5.4	5.8	5.0	5.3	5.5	5.7	6.1
X=8H Y=4H	4.7	5.0	5.1	5.4	5.8	5.1	5.4	5.5	5.8	6.2
6H	4.6	4.9	5.1	5.3	5.7	5.0	5.2	5.4	5.6	6.1
8H	4.6	4.8	5.0	5.2	5.7	4.9	5.1	5.4	5.6	6.1
12H	4.5	4.7	5.0	5.2	5.7	4.9	5.0	5.3	5.5	6.0
X=12H Y=4H	4.7	4.9	5.1	5.4	5.8	5.0	5.3	5.5	5.7	6.1
6H	4.6	4.8	5.0	5.2	5.7	4.9	5.1	5.4	5.6	6.1
8H	4.5	4.7	5.0	5.2	5.7	4.9	5.0	5.3	5.5	6.0
Variations with the observer position at spacings:										
S=1.0H	+1.2/-2.2					+1.5/-1.6				
S=1.5H	+3.3/-15.9					+2.9/-7.3				
S=2.0H	+5.2/-1.$					+4.8/-23.5				

Calculate in accordance with CIE Pub.117. The table is revised with 2160lm (8log(F/F0) = 2.7).

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Utilisation Factor Table(Floor cavity)

Utilisation Factors UF(F)			SHR NOM = 0.50								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.99	1.02	1.05	1.07	1.09	1.11	1.12	1.14	1.15
	0.30		0.95	0.99	1.02	1.04	1.07	1.09	1.10	1.12	1.14
	0.20		0.93	0.97	1.00	1.02	1.05	1.07	1.09	1.11	1.12
0.50	0.50	0.20	0.97	1.01	1.03	1.05	1.07	1.08	1.09	1.10	1.11
	0.30		0.95	0.98	1.00	1.02	1.05	1.06	1.07	1.09	1.10
	0.20		0.92	0.96	0.98	1.00	1.03	1.05	1.06	1.08	1.09
0.30	0.50	0.20	0.96	0.99	1.01	1.02	1.04	1.05	1.06	1.07	1.07
	0.30		0.94	0.97	0.99	1.00	1.02	1.04	1.04	1.06	1.06
	0.20		0.92	0.95	0.97	0.99	1.01	1.02	1.03	1.05	1.05
0.00	0.00	0.00	0.91	0.93	0.95	0.96	0.98	0.99	0.99	1.00	1.01

Rating:50W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

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Utilisation Factor Table(Wall)

Utilisation Factors UF(W)			SHR NOM = 0.50								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.41	0.34	0.29	0.25	0.20	0.17	0.14	0.11	0.09
	0.30		0.34	0.29	0.25	0.22	0.18	0.15	0.13	0.11	0.09
	0.20		0.30	0.25	0.22	0.20	0.17	0.14	0.12	0.10	0.08
0.50	0.50	0.20	0.39	0.31	0.27	0.23	0.18	0.20	0.13	0.10	0.08
	0.30		0.33	0.27	0.24	0.21	0.17	0.14	0.12	0.09	0.08
	0.20		0.28	0.24	0.21	0.19	0.15	0.13	0.11	0.09	0.07
0.30	0.50	0.20	0.36	0.29	0.24	0.21	0.16	0.14	0.12	0.09	0.07
	0.30		0.31	0.26	0.22	0.19	0.15	0.13	0.11	0.08	0.07
	0.20		0.27	0.23	0.20	0.17	0.14	0.12	0.10	0.08	0.07
0.00	0.00	0.00	0.12	0.09	0.08	0.06	0.05	0.04	0.03	0.02	0.02

Rating:50W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

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Utilisation Factor Table(Ceiling cavity)

Utilisation Factors UF(C)			SHR NOM = 0.50								
Room Reflectance			Room Index(RI)								
Ceiling	Wall	Floor	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.12	0.14	0.15	0.16	0.18	0.19	0.20	0.21	0.21
	0.30		0.09	0.11	0.13	0.14	0.16	0.17	0.18	0.19	0.20
	0.20		0.07	0.09	0.11	0.12	0.14	0.16	0.17	0.18	0.19
0.50	0.50	0.20	0.11	0.13	0.15	0.16	0.17	0.18	0.19	0.20	0.20
	0.30		0.09	0.11	0.12	0.14	0.15	0.17	0.17	0.19	0.19
	0.20		0.07	0.09	0.11	0.12	0.14	0.15	0.16	0.18	0.19
0.30	0.50	0.20	0.11	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.19
	0.30		0.09	0.11	0.12	0.13	0.15	0.16	0.17	0.18	0.19
	0.20		0.07	0.09	0.10	0.12	0.14	0.15	0.16	0.17	0.18
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating:50W Photometrically tested without ceiling board.
Multiply UF values by service correction factors
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

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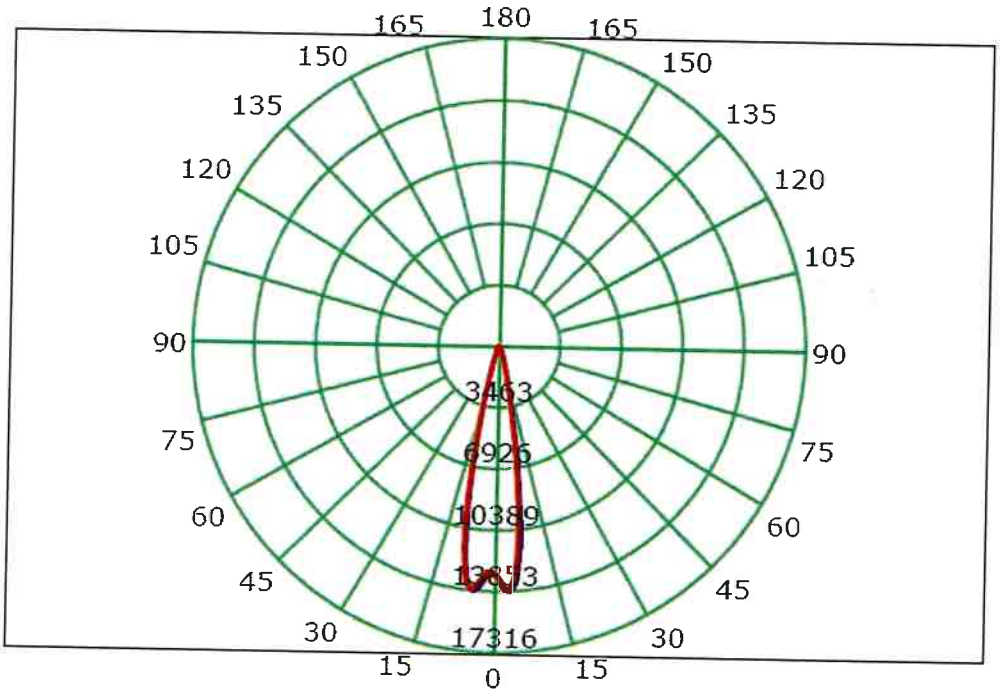
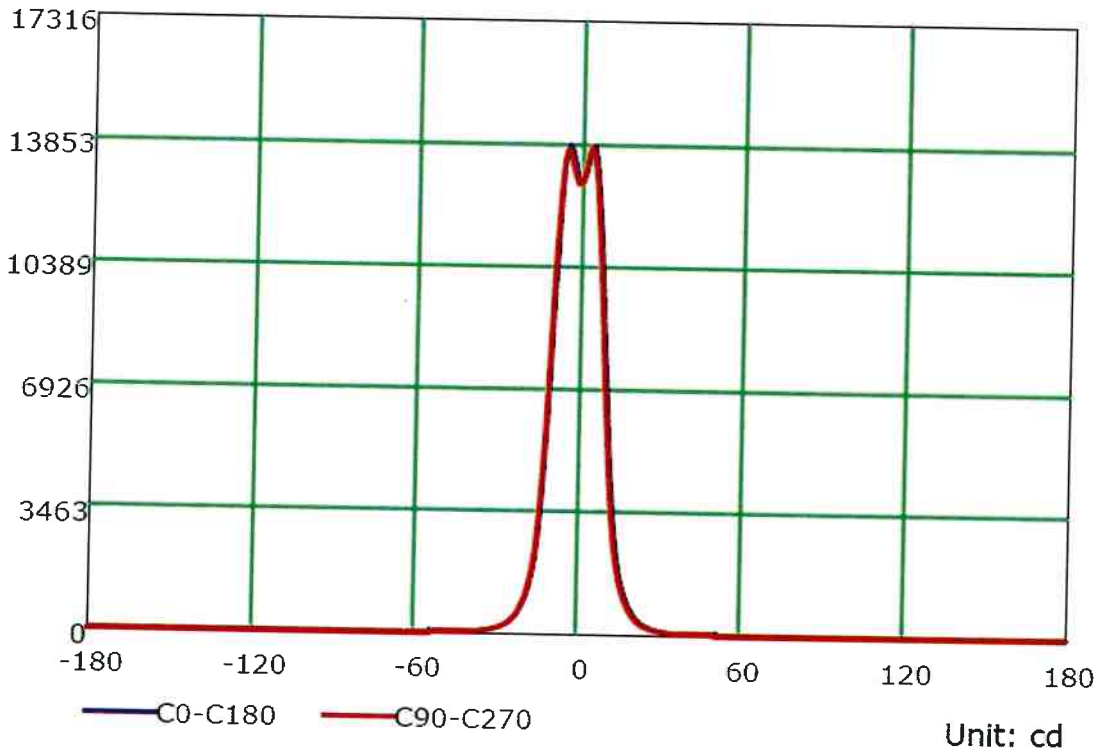
Luminous Intensity Distribution Curve





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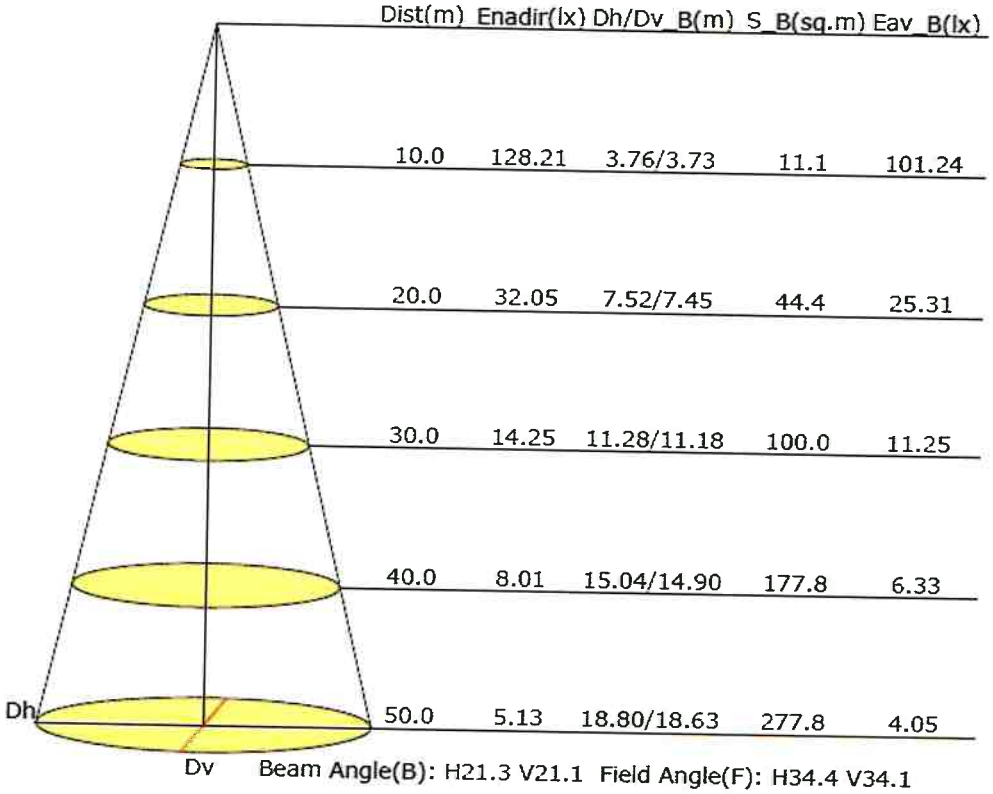
Illuminance at a Distance



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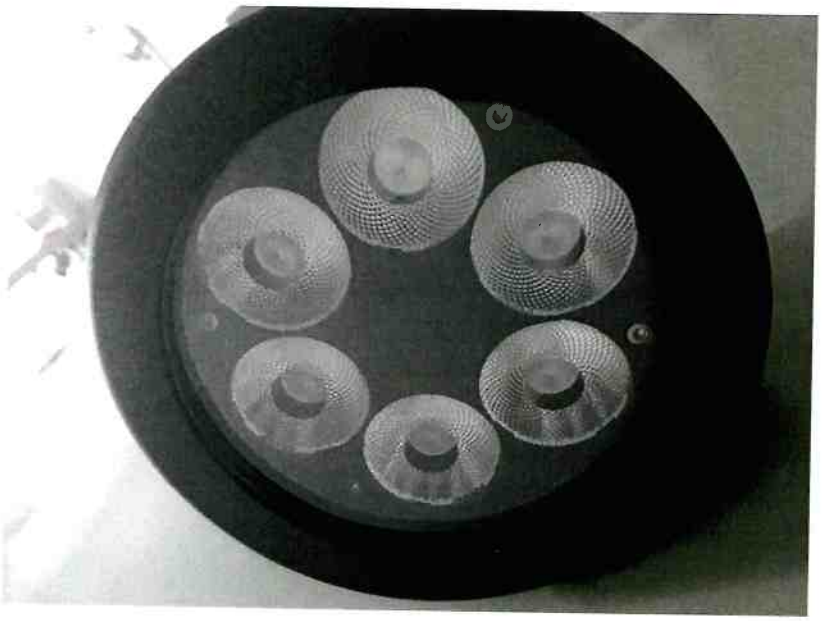
Görsel Dökümanlar / *Photo Documentation*



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