



**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:*

171801-864-8

**Numunenin Adı ve Tarif:**  
*Name and identity of test item:*

Procolor AC 10 Single Color Floodlight Narrow Beam 19° P03001051

**Numune Kabul Tarihi:**  
*The date of receipt of test item:*

03.01.2020

**Deneyin Yapıldığı Tarih:**  
*Date of test:*

06.01.2020

**Rapor Sayfa Sayısı:**  
*Number of pages of the report:*

20

**Uygulanan Standart / Metod:** IES-LM-79-08 (with TS EN13032-1)  
*Applied Standart / Method*

**Açıklamalar:**  
*Remarks:*

Test sonuçları için raporu inceleyiniz. / Review the report for test results.



**Deneyi Yapan Personel**  
*Person in Performing the Test*

Emine Nur ÇİDEM

**Laboratuvar Teknik Yöneticisi**  
*Laboratory Technical Manager*

Murat ÇİTİL

**ONAY**  
**APPROVED**



Vergi No  
Task Number  
733 043 5931

Bu rapor, Laboratuvarımızın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz raporlar geçersizdir.  
*This report may not be copied or reproduced in part without the written permission of the Laboratory. Signed and unsealed reports are invalid*

**DENEY RAPORU / TEST REPORT**

Deney Rapor No / Test Report No: 171801-864-8

**PTC Ürün Test ve Belgelendirme San. Tic. Ltd. Şti.**

Aydınlı Mah. Patlayıcı Maddeler Yolu Cad. Beyoğlu Sanayi Sitesi. D1 Blok No:26 Tuzla/İstanbul-Turkey  
Tel: +90 216 393 3232 e-mail: info@ptctesting.com web: www.ptctesting.com

## FOTOMETRİK ÖLÇÜM SONUÇLARI / PHOTOMETRIC MEASUREMENT 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 Measurement and Presentation of Photometric Data of Lampsand Luminaires-Part 1: Measurementand File.
Deney Ortam Şartları/Experimental Ambient Conditions.....:	25°C ±1°C, 60%RH±5%RH
Armatüre Uygulanan Gerilim / Applied Voltage.....:	220 V ac
Armatür Markası-Üretici/Luminaire Brand-Producer.....:	HERA EĞLENCE VE MİMARİ AYDINLATMA SİSTEMLERİ A.Ş.
Armatür Kodu-Modeli/Luminaire Code-Model.....:	Procolor AC 10 Single Color Floodlight Narrow Beam 19° P03001051

Armatürde Ölçülen Toplam Güç / Measured Total Power of Luminaire.....:	9.22 W ; 0.537 pf
Armatürün Ölçülen Işık Akısı / Measured Luminous Flux of Luminaire.....:	735.3 lm (Effective Value)
Armatür verimliliği (lm/Watt) / Luminous efficiency.....:	79.80 lm/Watt
Beam Angle(C0/C180,C90/C270,C45/C225,C135/315):	20.4, 20.3,20.7,20.6

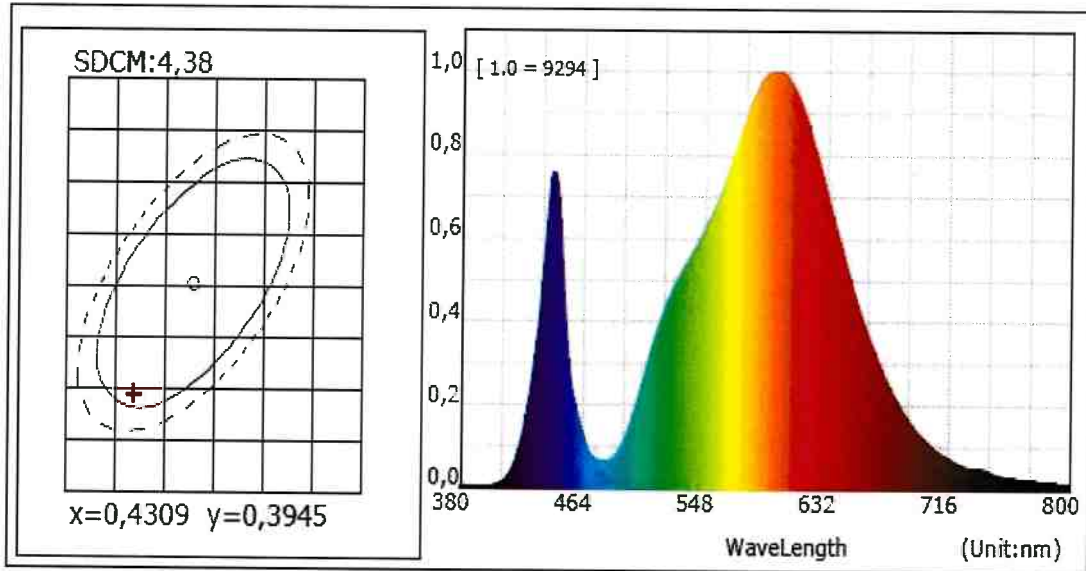
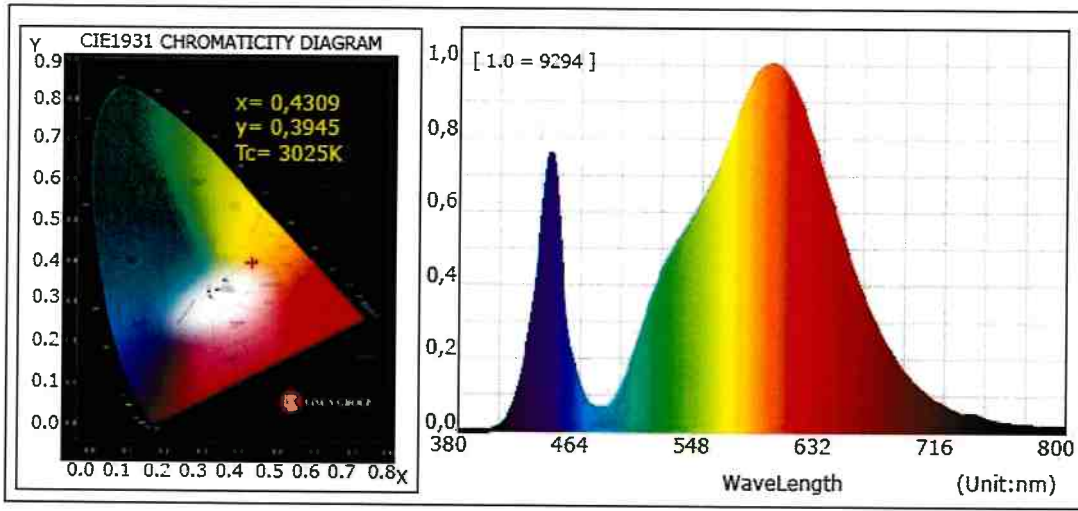
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Date/Time	06.01.2020 14:00
Chromaticity x coord	0,4309
Chromaticity y coord	0,3945
Chromaticity u coord	0,2508
Chromaticity v coord	0,3444
Chromaticity u' coord	0,2508
Chromaticity v' coord	0,5167
Peak Wavelength (nm)	597,6
Half Wavelength (nm)	100,0
Dominant Wavelength (nm)	583,9
Color Purity (%)	47,793
Correlated Color Temperature (deg. K)	3025
SDCM	4,38
Color Rendering Index Average (RA)	71,7
Color Rendering Index (R1)	69
Color Rendering Index (R2)	80
Color Rendering Index (R3)	90
Color Rendering Index (R4)	70
Color Rendering Index (R5)	68
Color Rendering Index (R6)	73
Color Rendering Index (R7)	77
Color Rendering Index (R8)	46
Color Rendering Index (R9)	-29
Color Rendering Index (R10)	55
Color Rendering Index (R11)	66
Color Rendering Index (R12)	50
Color Rendering Index (R13)	71
Color Rendering Index (R14)	94
Color Rendering Index (R15)	62

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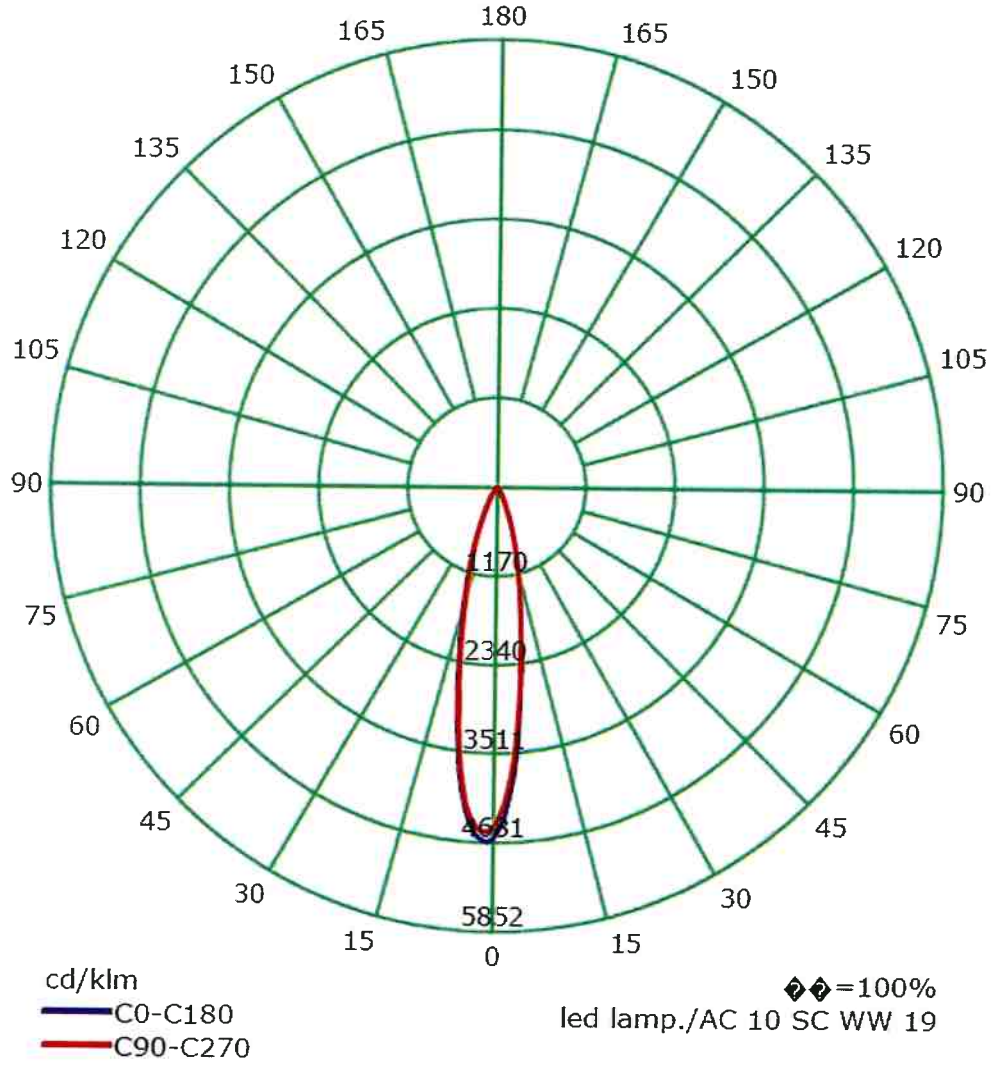
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## Luminous Intensity Distribution Curve(cd/klm)



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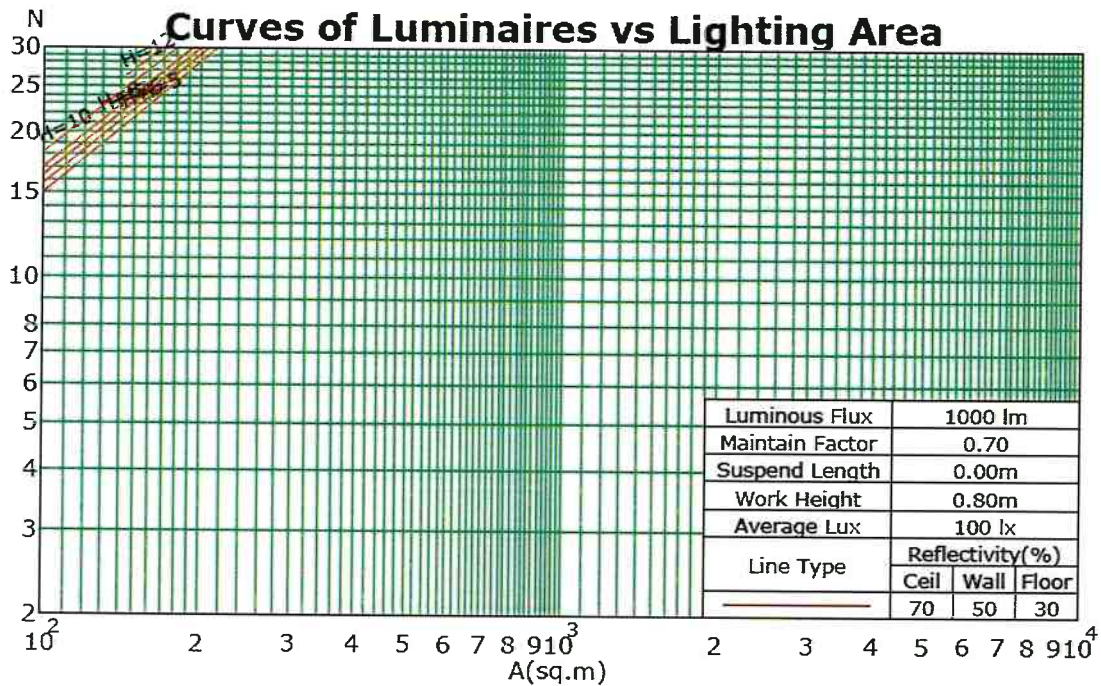
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## Coefficients Of Utilization - Zonal Cavity Method

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	101	101	101	99
1	114	112	110	108	112	110	108	107	106	104	103	102	101	100	99	98	97	95
2	110	106	103	100	108	105	102	99	101	99	97	98	96	95	96	94	93	91
3	106	101	97	94	104	100	96	93	97	94	92	95	92	90	93	91	89	87
4	102	97	92	89	101	95	91	88	93	90	87	91	89	86	90	87	85	84
5	99	92	88	85	97	92	87	84	90	86	83	88	85	83	87	84	82	81
6	96	89	84	81	94	88	84	81	87	83	80	85	82	79	84	81	79	78
7	93	85	81	78	91	85	80	77	84	80	77	82	79	77	81	78	76	75
8	90	82	78	75	89	82	78	74	81	77	74	80	76	74	79	76	74	72
9	87	80	75	72	86	79	75	72	78	74	72	77	74	71	77	73	71	70
10	84	77	73	70	83	77	72	70	76	72	69	75	72	69	74	71	69	68

Spacing Criteria (0-180): 0.35  
 Spacing Criteria (90-270): 0.35  
 Spacing Criteria (Diagonal): 0.39



## DENEY RAPORU / TEST REPORT

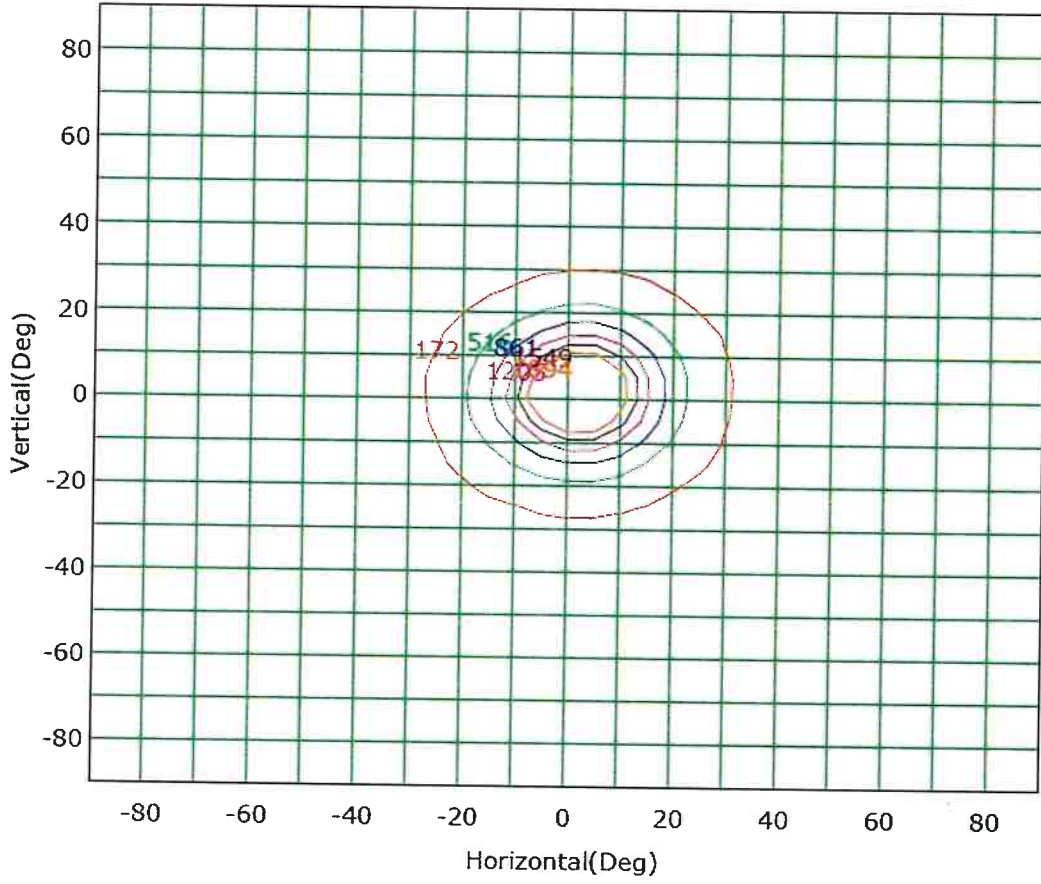
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## Isocandela (rectangle)

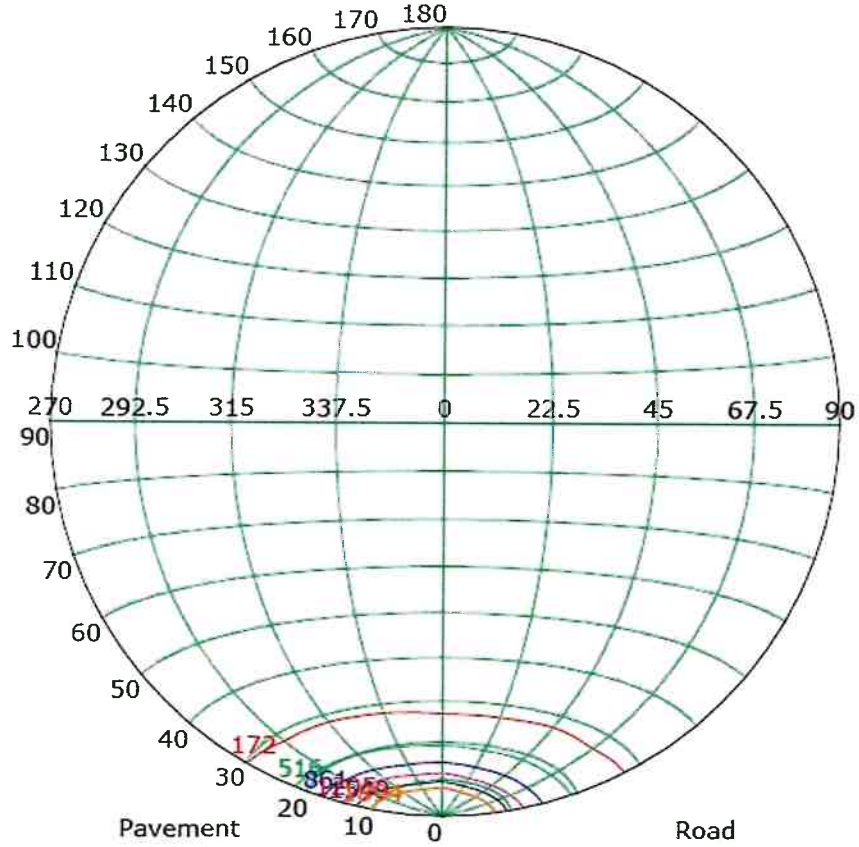


Imax (100%): 3443 cd

— ( 5%): 172 cd	— ( 15%): 516 cd
— ( 25%): 861 cd	— ( 35%): 1205 cd
— ( 45%): 1549 cd	— ( 55%): 1894 cd



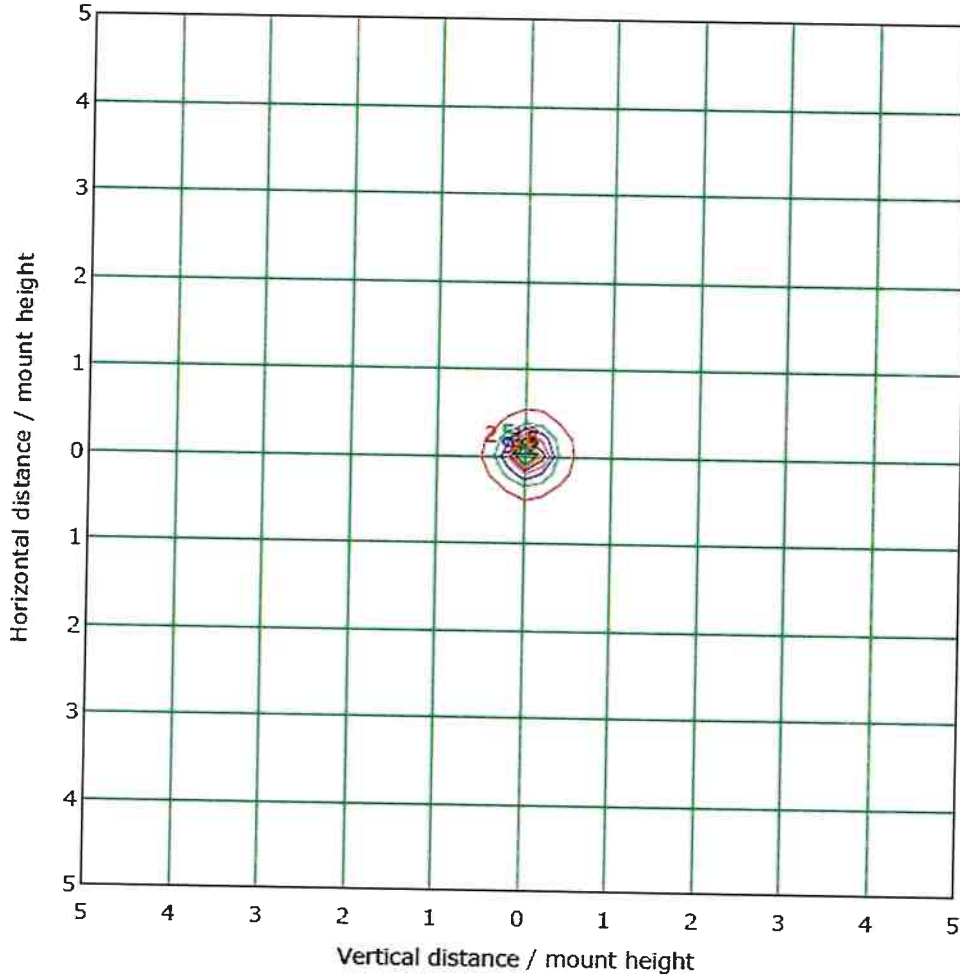
## Isocandela (sphere)



Imax (100%): 3443 cd

— ( 5%): 172 cd	— ( 15%): 516 cd
— ( 25%): 861 cd	— ( 35%): 1205 cd
— ( 45%): 1549 cd	— ( 55%): 1894 cd

## IsoLux Plot



Mounting Height: 10.0m	Max Lux(100%): 34.4 lx
( 5%): 1.7 lx	( 15%): 5.2 lx
( 25%): 8.6 lx	( 35%): 12.0 lx
( 45%): 15.5 lx	( 55%): 18.9 lx
( 65%): 22.3 lx	

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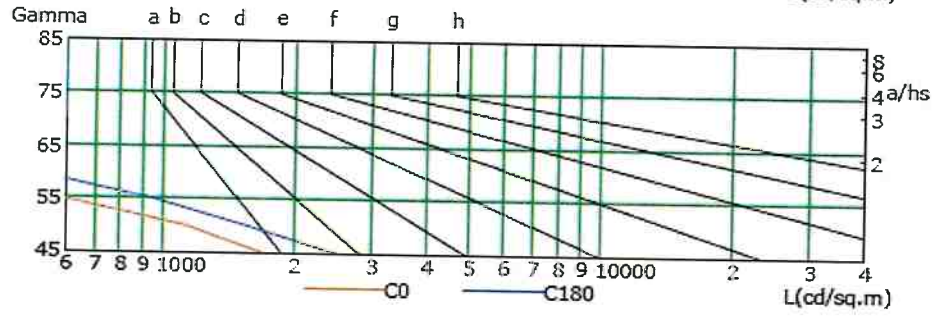
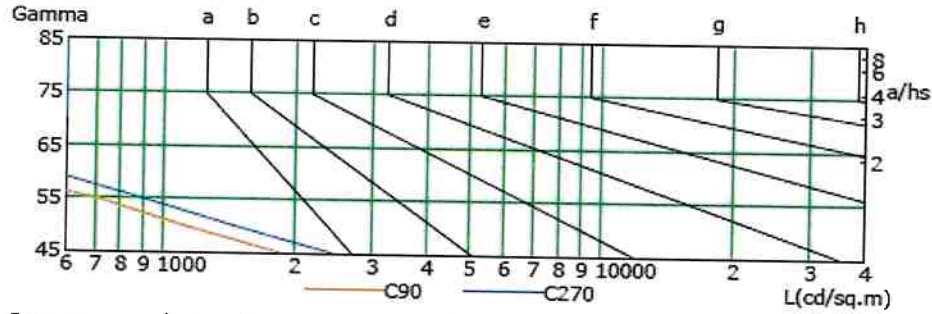
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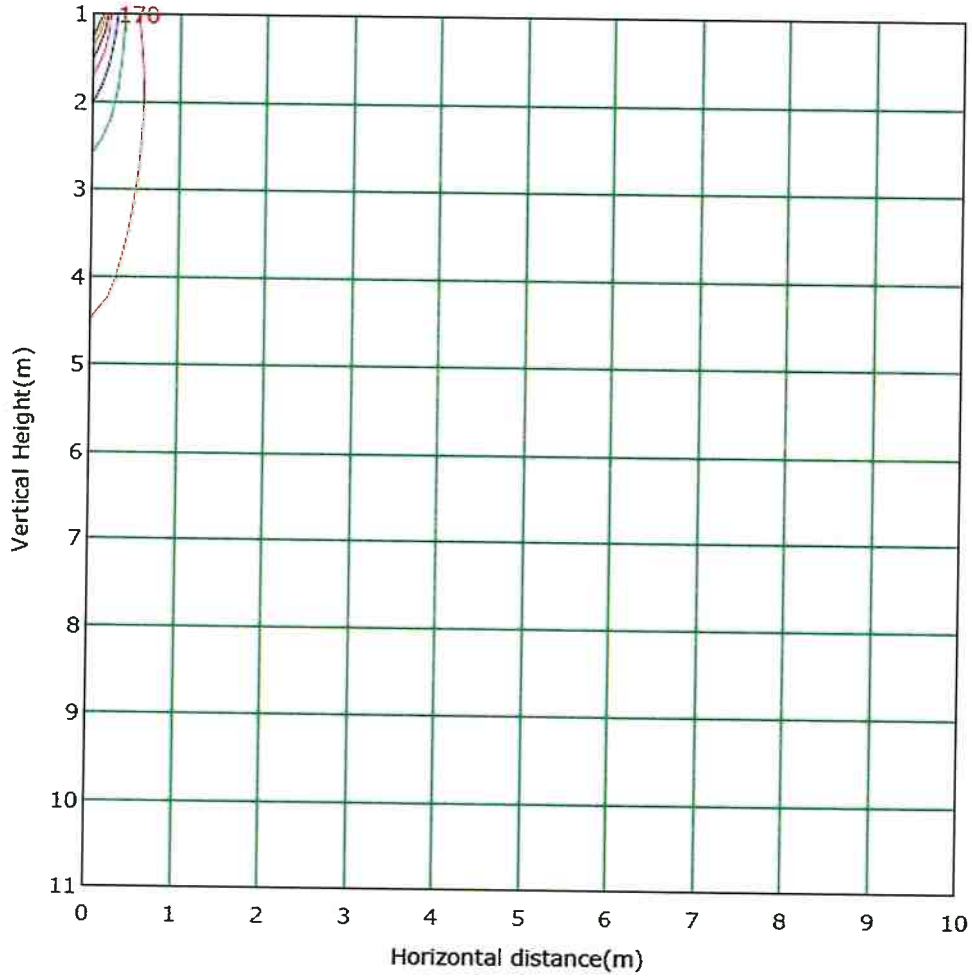
## Lum Limit Curve

Dazzle	Quality	Illuminance (lx)							
		2000	1000	500	<=300				
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



L(cd/sq.m)	G45	G50	G55	G60	G65	G70	G75	G80	G85
C0	1692	1132	592	280	85	0	0	0	0
C90	1874	1113	705	353	33	0	0	0	0
C180	2508	1558	952	489	176	0	0	0	0
C270	2464	1453	897	545	137	0	0	0	0

## Vertical IsoLux Plot



Lowest(m): 1.0m Highest(m): 11.0m Max Lux: 3404.3 lx  
— ( 5%): 170.2 lx — ( 15%): 510.6 lx  
— ( 25%): 851.1 lx — ( 35%): 1191.5 lx  
— ( 45%): 1531.9 lx — ( 55%): 1872.4 lx  
— ( 65%): 2212.8 lx



## 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	5.5	6.1	5.7	6.3	6.6	6.3	7.0	6.6	7.2	7.4
3H	5.3	5.9	5.6	6.2	6.4	6.2	6.8	6.5	7.0	7.3
4H	5.3	5.8	5.6	6.1	6.4	6.1	6.7	6.4	6.9	7.2
6H	5.2	5.7	5.5	6.0	6.3	6.0	6.6	6.4	6.8	7.1
8H	5.2	5.7	5.5	6.0	6.3	6.0	6.5	6.3	6.8	7.1
12H	5.1	5.6	5.5	5.9	6.2	6.0	6.4	6.3	6.8	7.1
X=4H Y=2H	5.3	5.9	5.6	6.2	6.4	6.1	6.7	6.5	7.0	7.2
3H	5.2	5.7	5.5	6.0	6.3	6.0	6.5	6.3	6.8	7.1
4H	5.1	5.5	5.5	5.9	6.2	5.9	6.3	6.3	6.7	7.0
6H	5.0	5.4	5.4	5.8	6.2	5.8	6.2	6.2	6.6	7.0
8H	4.9	5.3	5.4	5.7	6.1	5.8	6.1	6.2	6.5	6.9
12H	4.9	5.2	5.3	5.6	6.1	5.7	6.0	6.2	6.5	6.9
X=8H Y=4H	4.9	5.3	5.4	5.7	6.1	5.8	6.1	6.2	6.5	6.9
6H	4.8	5.1	5.3	5.6	6.0	5.7	5.9	6.1	6.4	6.9
8H	4.8	5.0	5.3	5.5	6.0	5.6	5.9	6.1	6.3	6.8
12H	4.7	5.0	5.2	5.4	6.0	5.6	5.8	6.1	6.3	6.8
X=12H Y=4H	4.9	5.2	5.3	5.6	6.1	5.7	6.0	6.2	6.5	6.9
6H	4.8	5.0	5.3	5.5	6.0	5.6	5.9	6.1	6.3	6.8
8H	4.7	5.0	5.2	5.4	6.0	5.6	5.8	6.1	6.3	6.8
Variations with the observer position at spacings:										
S=1.0H	+3.9/-5.6					+4.5/-5.8				
S=1.5H	+6.6/-15.5					+7.1/-12.2				
S=2.0H	+8.6/-1.5					+9.1/-39.3				

Calculate in accordance with CIE Pub.117. The table is revised with 735lm ( $8 \log(F/F_0) = -1.1$ ).

## 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	0.93	0.98	1.02	1.05	1.08	1.10	1.12	1.14	1.15
		0.30	0.89	0.95	0.98	1.01	1.05	1.08	1.09	1.12	1.13
		0.20	0.86	0.92	0.95	0.98	1.03	1.05	1.07	1.10	1.12
0.50	0.50	0.20	0.92	0.97	1.00	1.02	1.05	1.07	1.08	1.10	1.11
		0.30	0.88	0.93	0.97	0.99	1.03	1.05	1.06	1.08	1.10
		0.20	0.85	0.91	0.94	0.97	1.01	1.03	1.05	1.07	1.08
0.30	0.50	0.20	0.90	0.95	0.98	1.00	1.02	1.04	1.05	1.06	1.07
		0.30	0.87	0.92	0.95	0.97	1.00	1.02	1.03	1.05	1.06
		0.20	0.85	0.90	0.93	0.96	0.99	1.01	1.02	1.04	1.05
0.00	0.00	0.00	0.83	0.88	0.91	0.93	0.95	0.97	0.98	0.99	1.00

Rating:9W Photometrically tested without ceiling board.  
 Multiply UF values by service correction factors  
 Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

## 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	0.52	0.42	0.35	0.30	0.24	0.20	0.17	0.13	0.11
		0.30	0.43	0.36	0.31	0.27	0.22	0.18	0.16	0.12	0.10
		0.20	0.37	0.31	0.27	0.24	0.20	0.17	0.14	0.12	0.10
0.50	0.50	0.20	0.49	0.39	0.33	0.28	0.22	0.22	0.15	0.12	0.09
		0.30	0.41	0.34	0.29	0.25	0.20	0.17	0.14	0.11	0.09
		0.20	0.36	0.30	0.26	0.23	0.18	0.15	0.13	0.11	0.09
0.30	0.50	0.20	0.46	0.36	0.30	0.26	0.20	0.16	0.14	0.11	0.09
		0.30	0.40	0.32	0.27	0.23	0.18	0.15	0.13	0.10	0.08
		0.20	0.35	0.29	0.25	0.21	0.17	0.14	0.12	0.10	0.08
0.00	0.00	0.00	0.20	0.15	0.12	0.10	0.08	0.06	0.05	0.04	0.03

Rating:9W Photometrically tested without ceiling board.  
Multiply UF values by service correction factors  
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980

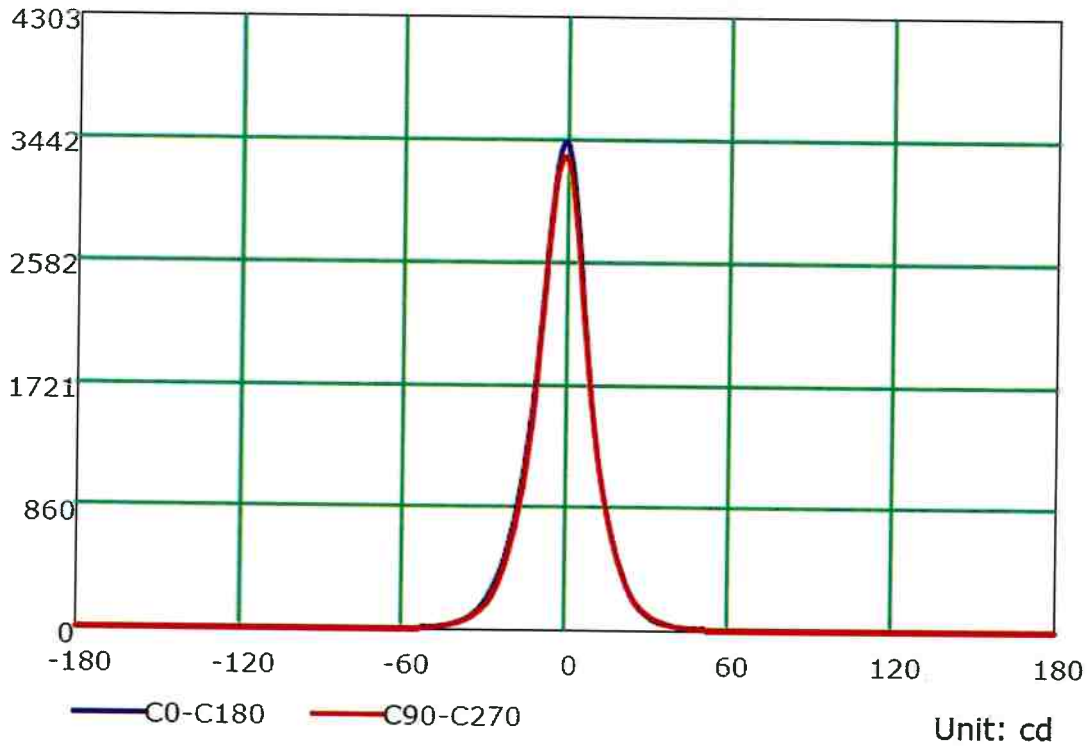
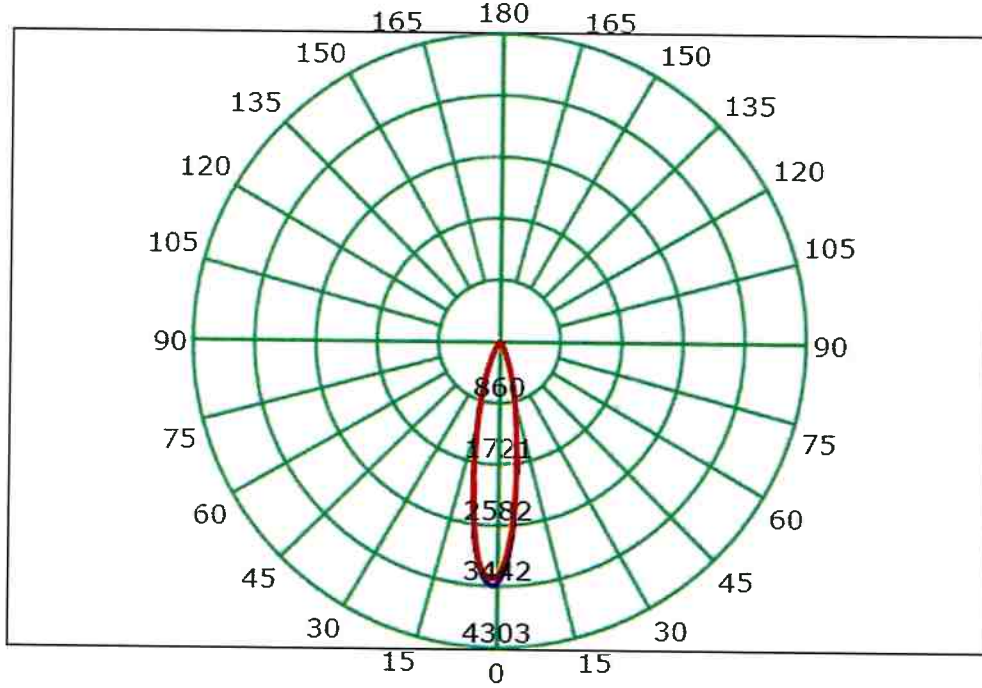
## Utilisation Factor Table(Ceiling cavity)

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	0.13	0.15	0.16	0.17	0.19	0.20	0.20	0.21	0.22	
		0.30	0.10	0.12	0.13	0.14	0.16	0.18	0.19	0.20	0.21	
		0.20	0.07	0.09	0.11	0.12	0.14	0.16	0.17	0.19	0.20	
0.50	0.50	0.20	0.13	0.14	0.16	0.17	0.18	0.19	0.20	0.20	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	0.15	0.17	0.18	0.19	
0.30	0.50	0.20	0.12	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.20	
		0.30	0.09	0.11	0.13	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	0.17	0.18	
0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Rating:9W Photometrically tested without ceiling board.  
Multiply UF values by service correction factors  
Calculate in accordance with CIBSE Technical Memorandum NO.5 1980



## Luminous Intensity Distribution Curve



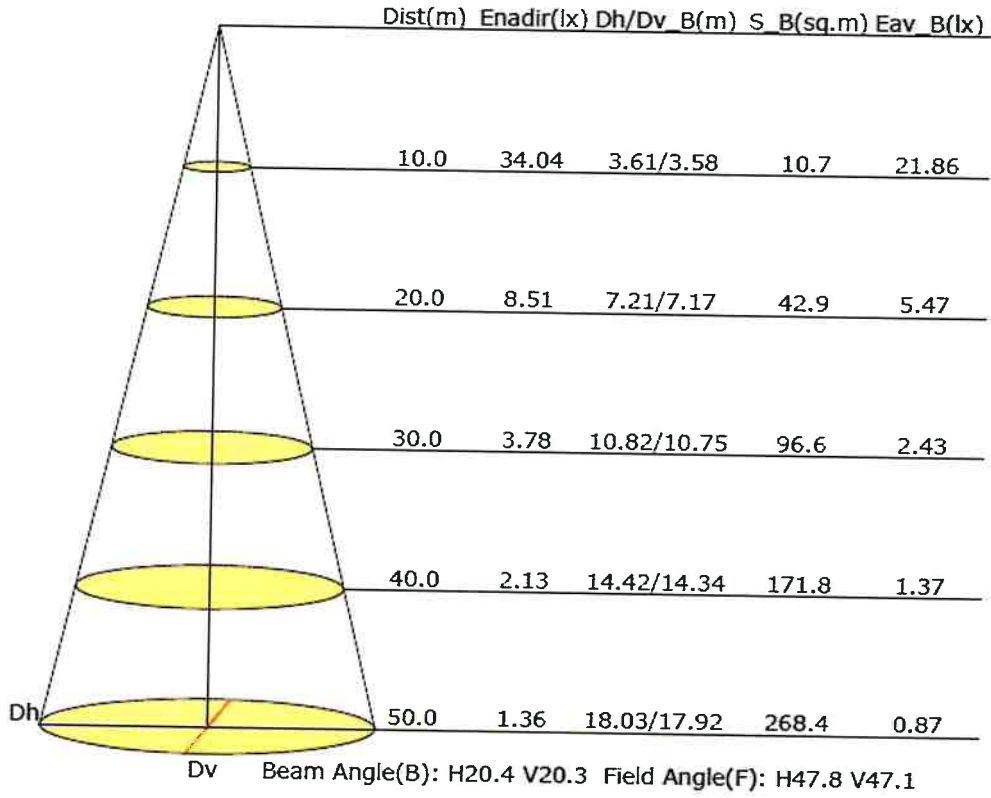
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## Illuminance at a Distance



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## Görsel Dökümanlar / Photo Documentation





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**PTC Ürün Test ve Belgelendirme San. Tic. Ltd. Şti.**

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