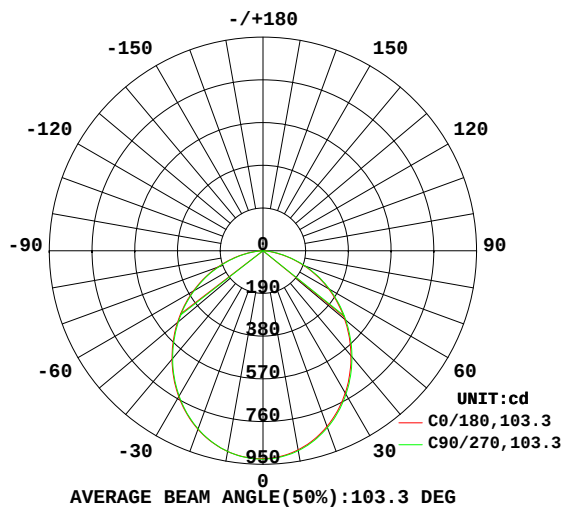


LUMINAIRE PHOTOMETRIC TEST REPORT

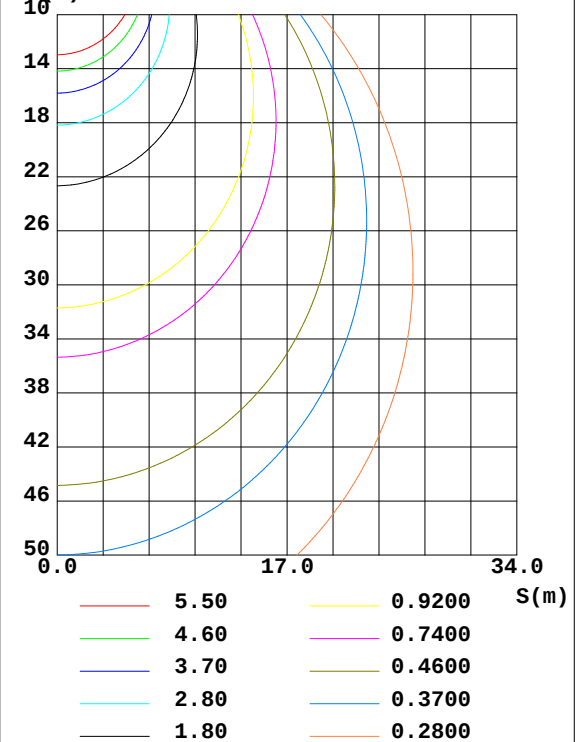
Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.19 lm/W			
MODEL	2835 120 4000K	I _{max} (cd)	927.8	S/MH(C0/180)	1.21
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.20
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	2373.1	η UP, DN(C0-180)	0.0, 49.5
NOMINAL FLUX(lm)	2373.13	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 50.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2025-04-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.880m [K=0.9454]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

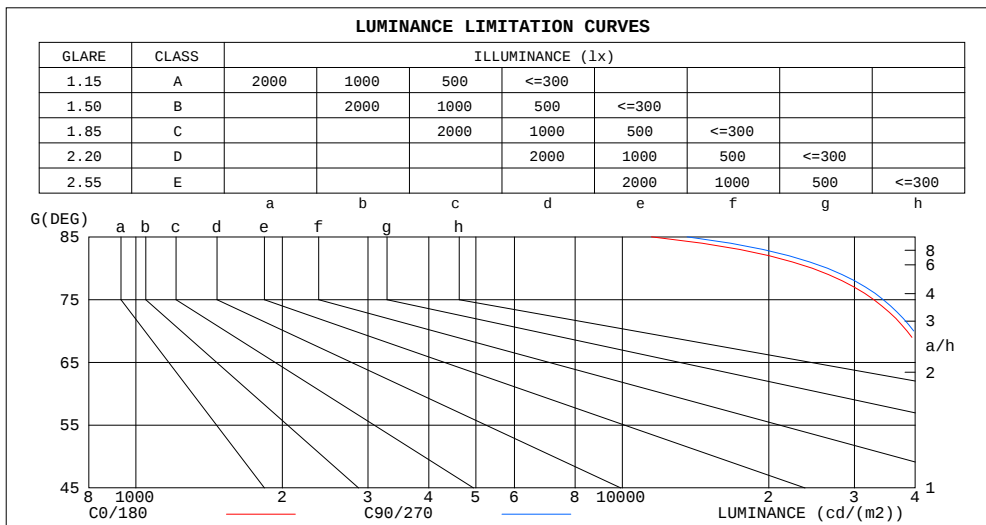
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	899.3	900.5	903.0	905.9	906.4	907.3	906.1	904.7	0- 10	87.39	87.39	3.68, 3.68
20	832.2	833.6	837.2	842.4	845.5	846.3	843.6	839.9	10- 20	247.2	334.6	14.1, 14.1
30	731.3	732.9	737.7	744.2	749.8	750.4	746.4	741.1	20- 30	365.9	700.5	29.5, 29.5
40	608.8	610.3	615.7	622.8	629.6	630.2	625.4	619.2	30- 40	427.2	1128	47.5, 47.5
50	474.7	475.9	481.4	489.0	496.5	496.9	491.7	484.9	40- 50	427.6	1555	65.5, 65.5
60	335.5	336.4	342.1	349.7	357.5	357.7	352.3	345.1	50- 60	372.9	1928	81.3, 81.3
70	194.0	194.7	200.2	207.6	215.7	215.7	210.2	203.0	60- 70	273.3	2202	92.8, 92.8
80	62.86	63.09	67.55	73.77	79.97	79.59	75.13	69.45	70- 80	144.0	2346	98.8, 98.8
90	1.316	1.332	1.309	1.289	0.6987	0.6987	0.7065	0.7335	80- 90	27.57	2373	100, 100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.880m [K=0.9454]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	11483	13595
80	24558	26393
75	32868	34365
70	38473	39705
65	42477	43495
60	45518	46412
55	47965	48730
50	50098	50807
45	52050	52714

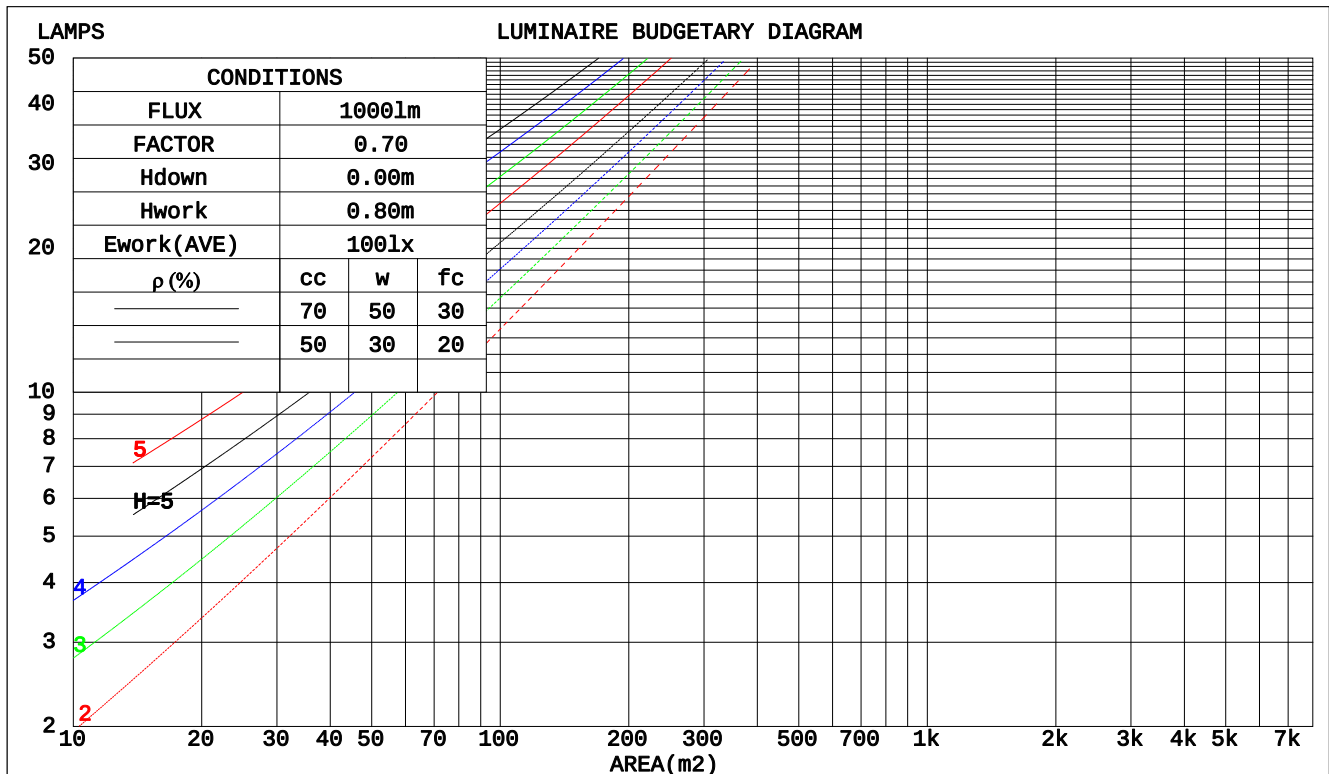
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.880m [K=0.9454]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.05	1.01	.97	1.02	.99	.95	.98	.95	.92	.94	.92	.90	.91	.89	.87	.85
2.0	.92	.85	.80	.90	.84	.79	.86	.81	.77	.83	.79	.75	.80	.76	.73	.71
3.0	.81	.73	.66	.79	.72	.66	.76	.70	.65	.74	.68	.64	.71	.66	.63	.60
4.0	.72	.63	.57	.70	.62	.56	.68	.61	.55	.66	.60	.55	.63	.58	.54	.52
5.0	.64	.55	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.54	.47	.42	.52	.46	.42	.40
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.38	.49	.42	.37	.48	.42	.37	.35
8.0	.48	.40	.34	.47	.39	.34	.46	.39	.34	.45	.38	.33	.44	.38	.33	.31
9.0	.44	.36	.31	.44	.36	.31	.42	.35	.30	.41	.35	.30	.40	.34	.30	.28
10.0	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.38	.32	.27	.26



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.880m [K=0.9454]
Remarks:

WEC AND CCEC

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm					
NAME: DL20096-BKTC20S01S			TYPE:		WEIGHT:
SPEC.: black RA80 3000K+5700K			DIM.:		SERIAL No.:
MFR.:			SUR.: 137mm		Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.294	.167	.053	.287	.164	.052	.274	.157	.050	.261	.151	.048	.250	.145	.047		
2.0	.280	.153	.047	.274	.151	.046	.262	.146	.045	.252	.141	.044	.242	.137	.043		
3.0	.261	.139	.042	.255	.137	.041	.245	.133	.040	.236	.129	.040	.227	.126	.039		
4.0	.242	.126	.037	.237	.124	.037	.228	.121	.036	.220	.118	.036	.212	.115	.035		
5.0	.224	.114	.033	.220	.113	.033	.212	.110	.033	.205	.108	.032	.198	.106	.032		
6.0	.209	.105	.030	.205	.104	.030	.198	.101	.029	.191	.099	.029	.185	.097	.029		
7.0	.195	.096	.027	.191	.095	.027	.185	.094	.027	.179	.092	.027	.173	.090	.026		
8.0	.182	.089	.025	.179	.088	.025	.173	.087	.025	.168	.085	.025	.163	.084	.024		
9.0	.171	.083	.023	.168	.082	.023	.163	.081	.023	.158	.079	.023	.154	.078	.023		
10.0	.161	.077	.021	.159	.077	.021	.154	.075	.021	.150	.074	.021	.145	.073	.021		

ρ _{cc}	80%			70%			50%			30%			10%			0
ρ _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.179	.156	.136	.153	.134	.117	.105	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.171	.132	.099	.146	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.076	.140	.099	.066	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.059	.133	.087	.052	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.087	.055	.030	.051	.032	.018	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.115	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.026	.105	.056	.022	.073	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.880m [K=0.9454]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm											
NAME: DL20096-BKTC20S01S					TYPE:			WEIGHT:			
SPEC.: black RA80 3000K+5700K					DIM.:			SERIAL No.:			
MFR.:					SUR.: 137mm			Shielding Angle:			
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		23.1	24.6	23.4	24.8	25.0	23.2	24.7	23.5	24.9	25.1
	3H	24.4	25.8	24.7	26.0	26.3	24.5	25.9	24.8	26.1	26.4
	4H	24.9	26.2	25.2	26.5	26.7	25.0	26.3	25.3	26.6	26.8
	6H	25.1	26.4	25.5	26.6	26.9	25.3	26.5	25.6	26.8	27.1
	8H	25.2	26.4	25.5	26.6	26.9	25.3	26.5	25.7	26.8	27.1
	12H	25.2	26.3	25.5	26.6	26.9	25.3	26.5	25.7	26.7	27.1
4H	2H	23.7	25.0	24.0	25.2	25.5	23.7	25.0	24.1	25.3	25.5
	3H	25.2	26.3	25.5	26.6	26.9	25.3	26.4	25.6	26.7	27.0
	4H	25.7	26.8	26.1	27.1	27.4	25.8	26.9	26.2	27.2	27.5
	6H	26.1	27.0	26.5	27.3	27.7	26.2	27.1	26.6	27.5	27.8
	8H	26.1	27.0	26.5	27.3	27.7	26.3	27.1	26.7	27.5	27.9
	12H	26.1	26.9	26.6	27.3	27.7	26.3	27.1	26.7	27.5	27.9
8H	4H	25.9	26.8	26.3	27.1	27.5	26.0	26.9	26.4	27.2	27.6
	6H	26.3	27.1	26.8	27.5	27.9	26.5	27.2	26.9	27.6	28.0
	8H	26.5	27.1	26.9	27.5	28.0	26.6	27.2	27.1	27.6	28.1
	12H	26.5	27.0	27.0	27.5	27.9	26.6	27.2	27.1	27.6	28.1
12H	4H	25.9	26.7	26.3	27.1	27.5	26.0	26.8	26.4	27.2	27.6
	6H	26.4	27.0	26.8	27.4	27.9	26.5	27.1	26.9	27.5	28.0
	8H	26.5	27.0	27.0	27.5	27.9	26.6	27.2	27.1	27.6	28.1
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3					

CIE Pub.117, 2373 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 3.0)
Area: 0.01474 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2025-04-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.880m [K=0.9454]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:

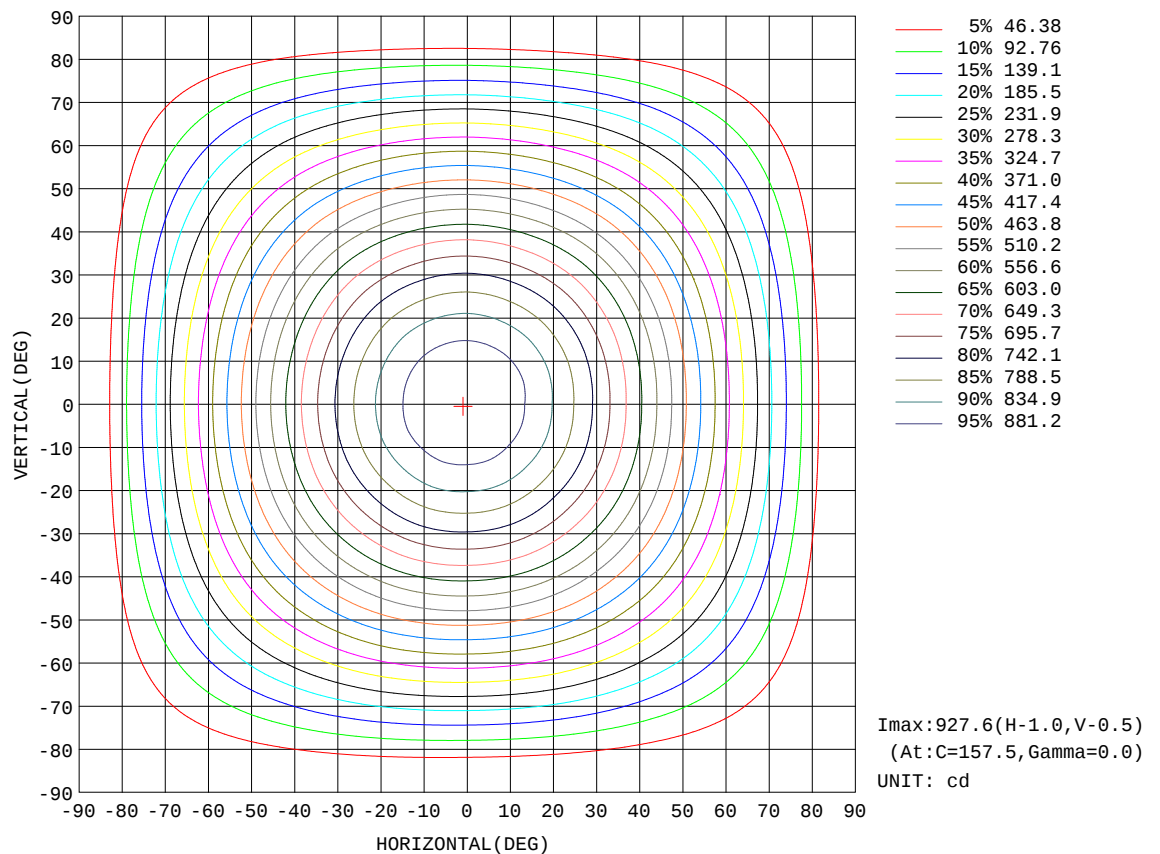
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	58	48	41	57	47	41	34
0.80	69	58	51	68	58	51	66	57	50	43
1.00	78	67	60	76	66	60	74	68	59	52
1.25	85	74	68	83	74	67	81	72	66	59
1.50	89	80	73	88	79	73	85	77	72	64
2.00	96	88	82	94	87	81	91	85	80	72
2.50	100	92	87	98	91	86	94	88	84	76
3.00	103	97	91	101	95	90	97	92	88	80
4.00	107	102	97	105	100	96	100	97	93	84
5.00	109	105	101	107	103	99	102	99	96	87
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2025-04-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.880m [K=0.9454]
Remarks:

ISOCANDELA DIAGRAM

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:

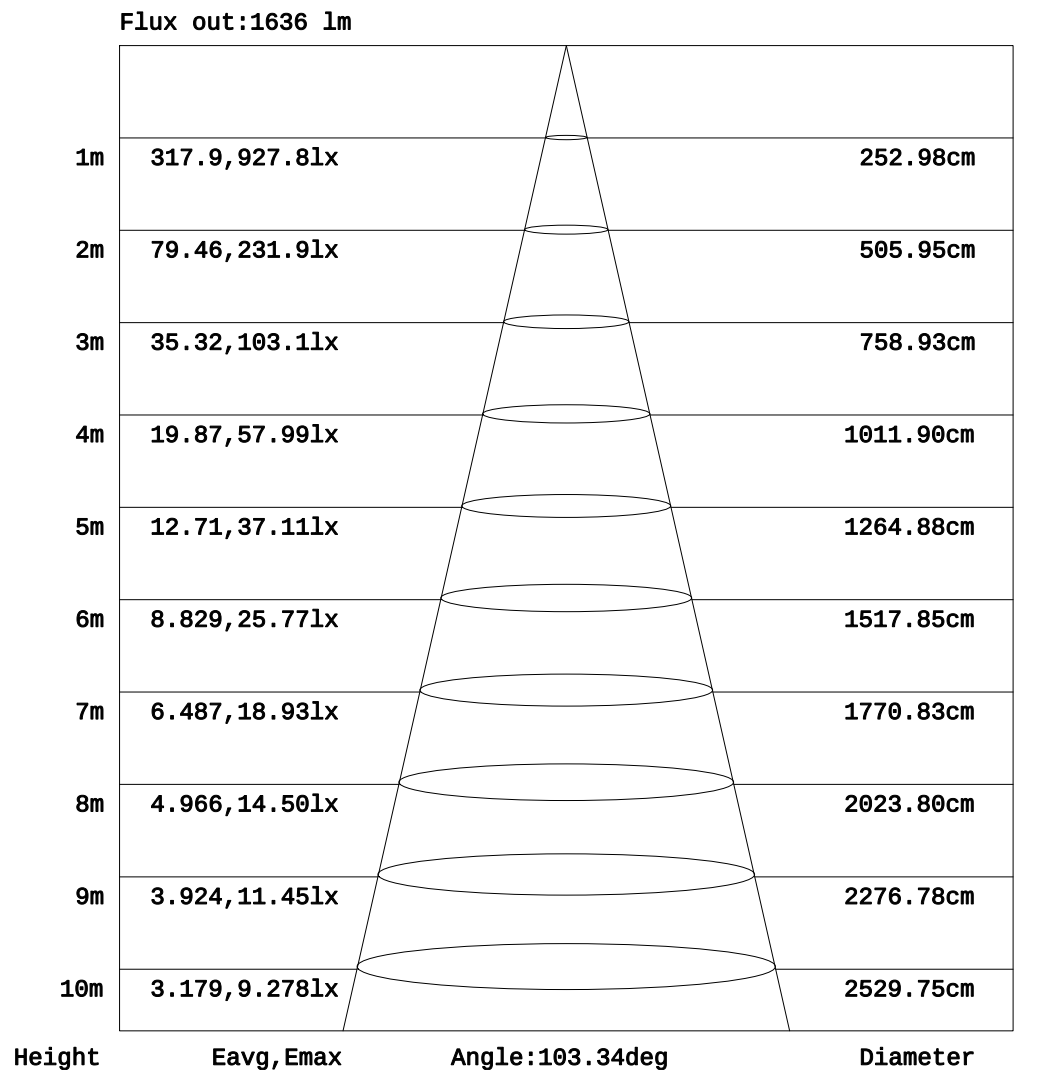


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.880m [K=0.9454]
Remarks:

AAI Figure

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:



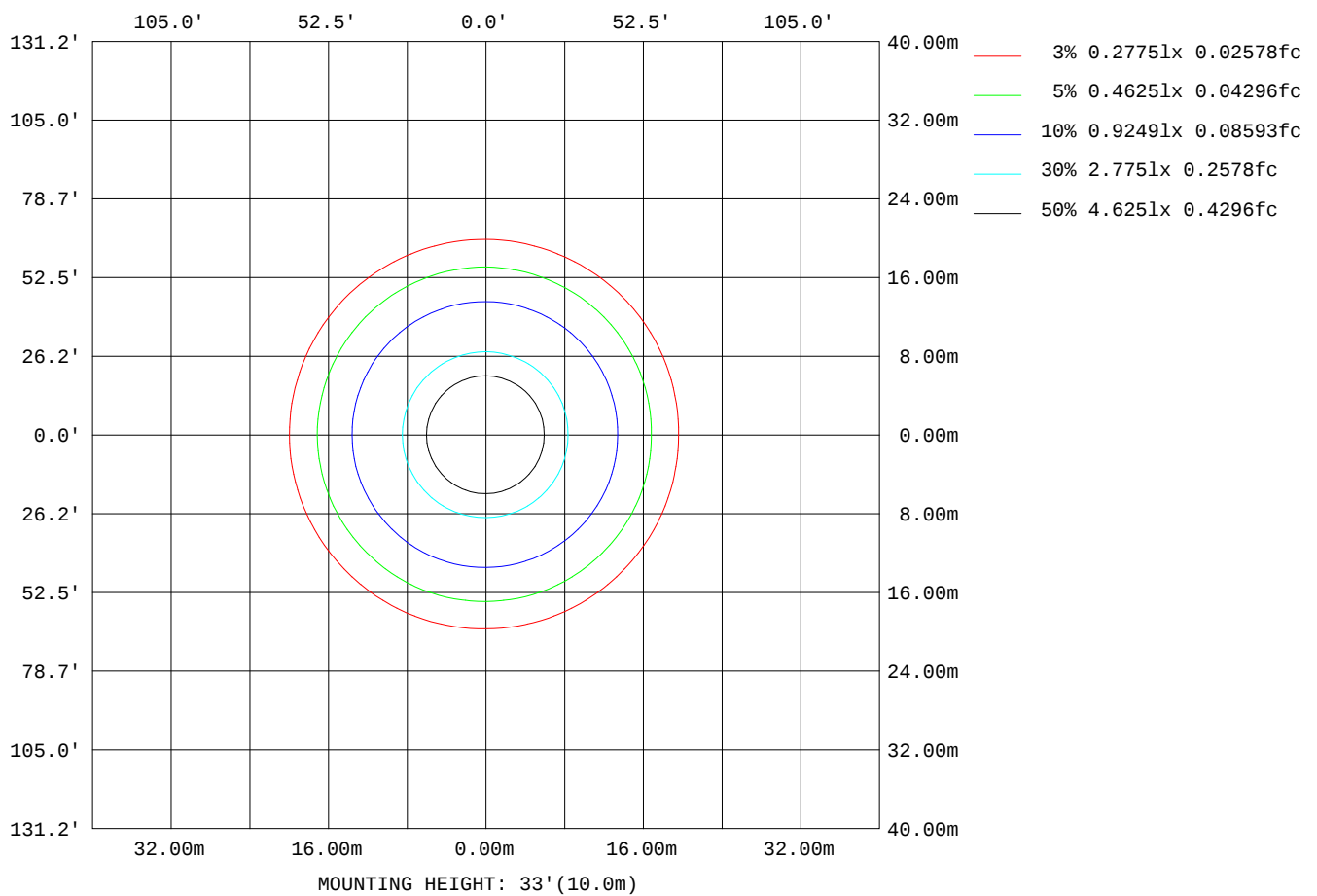
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.880m [K=0.9454]
 Remarks:

ISOLUX DIAGRAM

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2025-04-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.880m [K=0.9454]
Remarks:

LED Avg.L Report

Test:U:230.82V I:0.0939A P:19.582W PF:0.9036 Freq:49.99Hz Lamp Flux:2373.13x1 lm		
NAME: DL20096-BKTC20S01S	TYPE:	WEIGHT:
SPEC.: black RA80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 137mm	Shielding Angle:

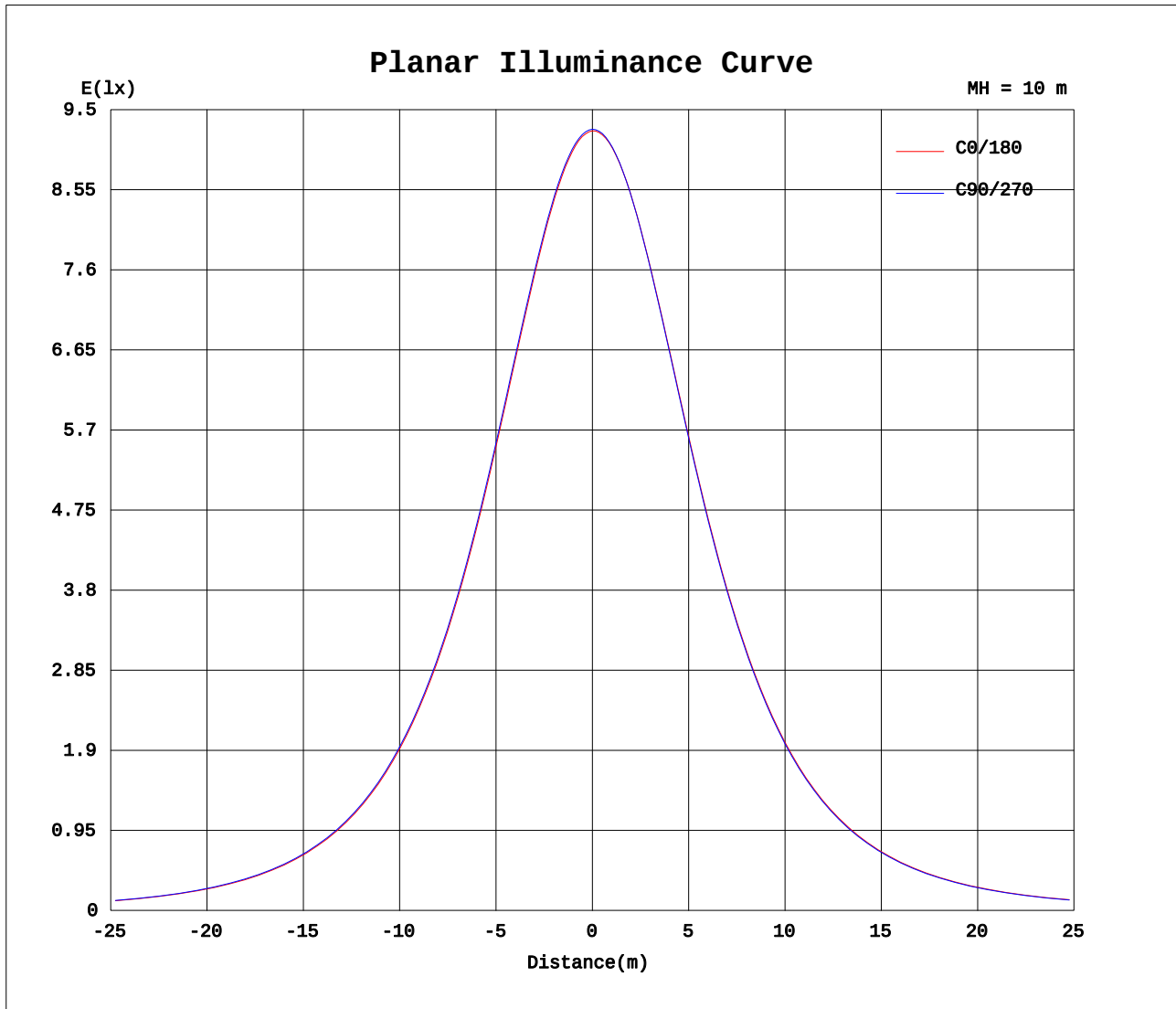
AvgL	cd/m2
L_0~180(65)av	44254
L_0~180(75)av	35543
L_0~180(85)av	15707
L_90~270(65)av	44315
L_90~270(75)av	35579
L_90~270(85)av	15311
L_45(65)av	44342
L_45(75)av	35615
L_45(85)av	15484

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.880m [K=0.9454]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2025-04-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.880m [K=0.9454]
 Remarks:

```

Range: 0 - 90DEG
Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.880m [K=0.9454]
Remarks:

```