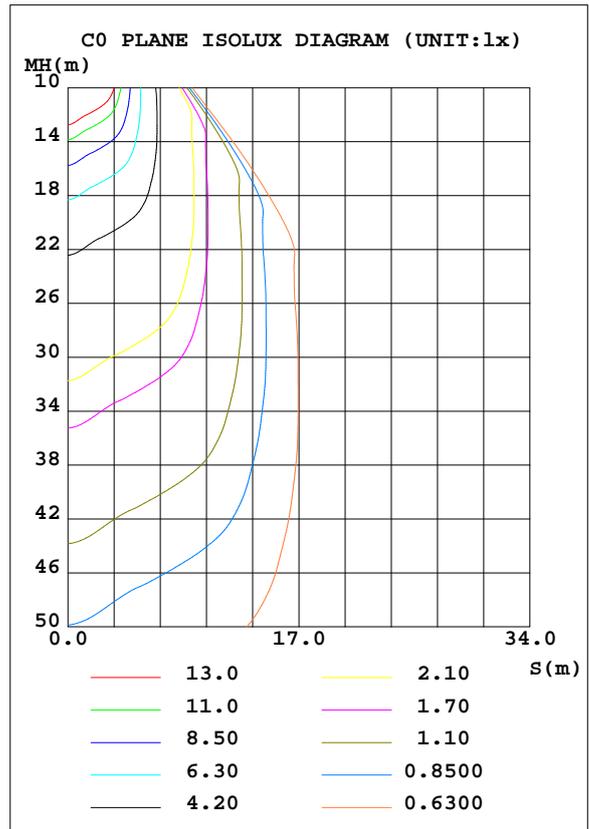
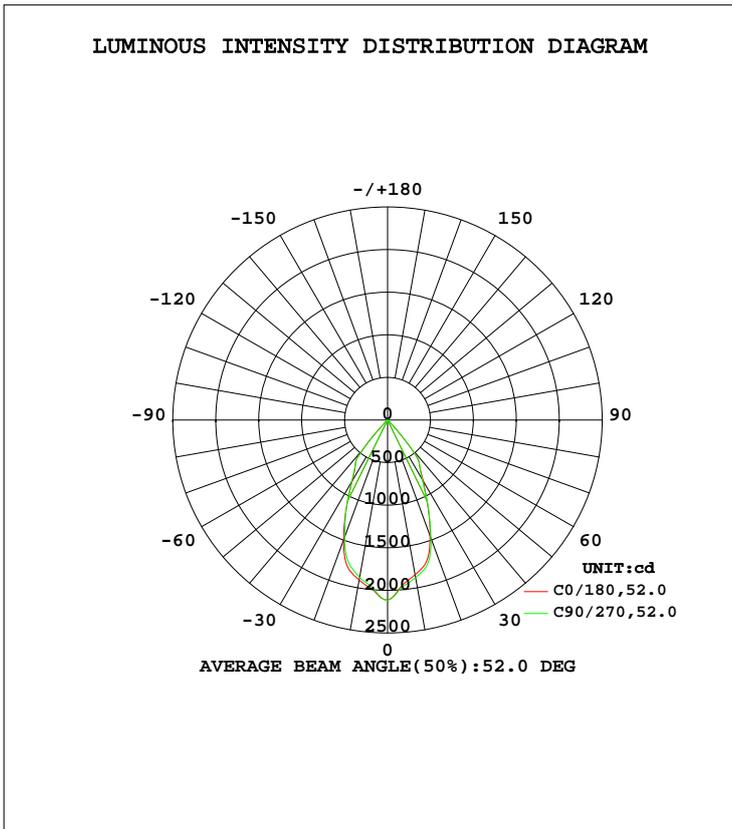


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 83.71 lm/W			
MODEL	TB15111204 4000K	I _{max} (cd)	2115	S/MH(C0/180)	0.82
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	0.81
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	1723.3	η UP, DN(C0-180)	0.0,49.8
NOMINAL FLUX(lm)	1723.34	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,50.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	0.90



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

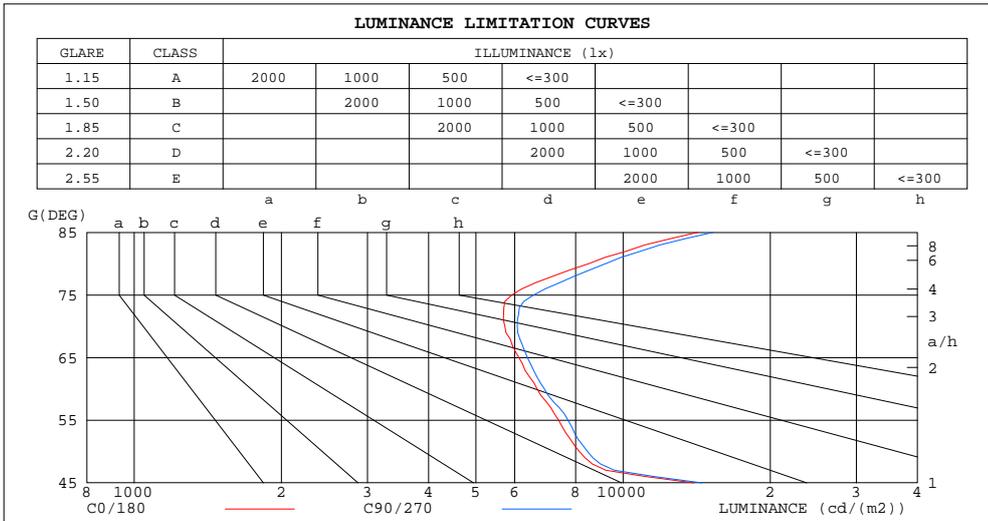
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum,lamp
10	1844	1854	1877	1896	1908	1912	1878	1856	0- 10	185.9	185.9	10.8,10.8
20	1447	1462	1478	1478	1496	1454	1463	1441	10- 20	483.7	669.6	38.9,38.9
30	832.0	823.4	810.2	810.6	826.7	794.6	837.7	824.2	20- 30	513.9	1183	68.7,68.7
40	383.3	390.0	398.5	418.6	439.8	434.4	411.6	412.7	30- 40	405.5	1589	92.2,92.2
50	28.28	29.49	29.39	28.95	28.52	28.91	27.90	27.68	40- 50	83.54	1672	97,97
60	18.04	18.47	18.66	18.65	18.48	18.37	18.11	18.05	50- 60	20.89	1693	98.3,98.3
70	10.60	11.06	11.24	11.14	10.98	10.87	10.60	10.59	60- 70	14.25	1708	99.1,99.1
80	7.988	8.479	8.641	8.438	8.102	7.882	7.577	7.637	70- 80	9.432	1717	99.6,99.6
90	0.1390	0.1351	0.1274	0.1235	0.0232	0.0270	0.0270	0.0270	80- 90	6.282	1723	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:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	14190	15262
80	8502	9199
75	5919	6563
70	5728	6076
65	6123	6371
60	6669	6899
55	7380	7711
50	8132	8453
45	13932	14480

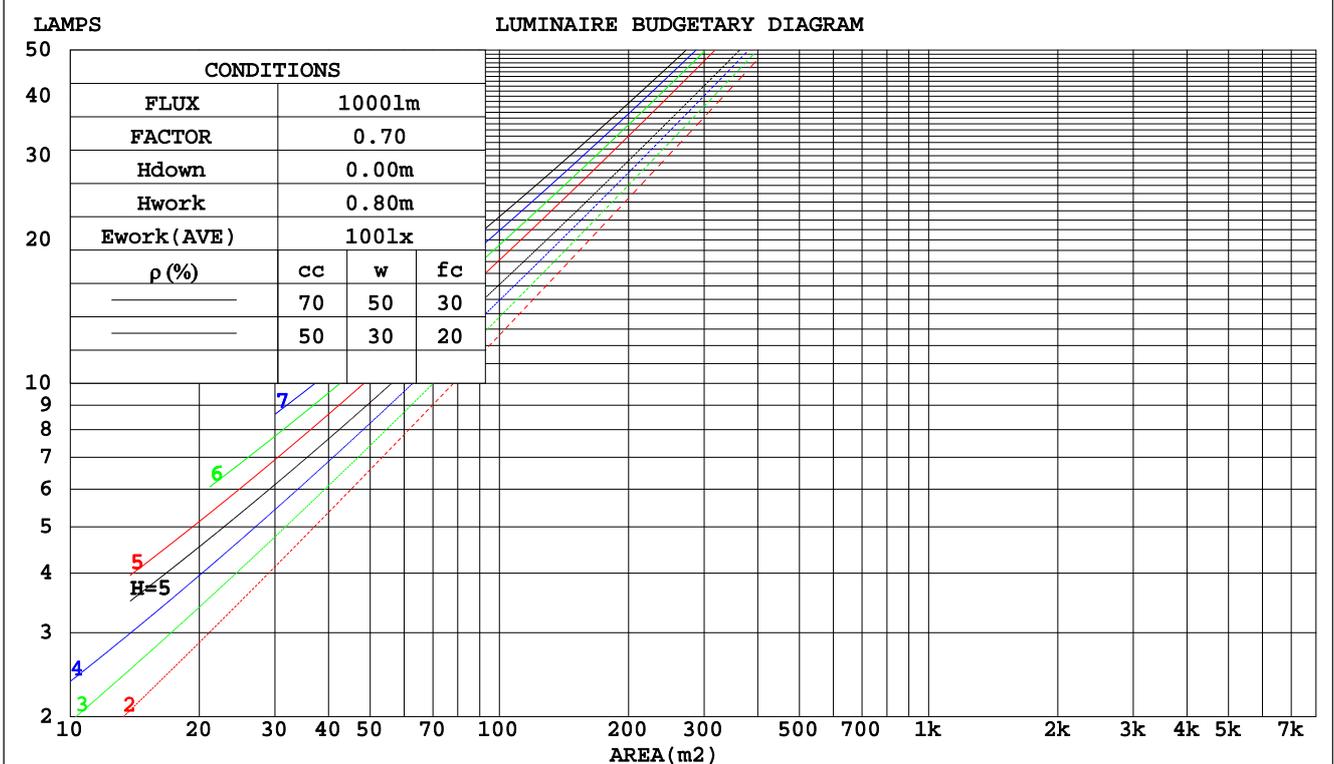
C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																
pfc	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	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.01	1.00	.99	.98	.97	.96	.95	.93
2.0	1.03	.98	.95	1.01	.97	.94	.98	.94	.92	.95	.92	.90	.92	.90	.88	.86
3.0	.95	.90	.86	.94	.89	.86	.91	.88	.84	.89	.86	.83	.87	.84	.82	.80
4.0	.89	.84	.79	.88	.83	.79	.86	.81	.78	.84	.80	.77	.82	.79	.76	.75
5.0	.83	.78	.73	.82	.77	.73	.81	.76	.72	.79	.75	.72	.77	.74	.71	.69
6.0	.78	.72	.68	.77	.72	.68	.76	.71	.67	.75	.70	.67	.73	.69	.66	.65
7.0	.74	.68	.63	.73	.67	.63	.72	.66	.63	.70	.66	.62	.69	.65	.62	.61
8.0	.69	.63	.59	.69	.63	.59	.68	.62	.59	.67	.62	.59	.66	.61	.58	.57
9.0	.65	.60	.55	.65	.59	.55	.64	.59	.55	.63	.58	.55	.62	.58	.55	.53
10.0	.62	.56	.52	.61	.56	.52	.61	.56	.52	.60	.55	.52	.59	.55	.52	.50



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:

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	.185	.105	.033	.178	.102	.032	.166	.095	.030	.154	.089	.029	.143	.083	.027	
2.0	.176	.096	.030	.170	.094	.029	.159	.089	.028	.150	.084	.026	.140	.079	.025	
3.0	.167	.089	.027	.162	.087	.026	.153	.083	.025	.144	.079	.024	.136	.076	.023	
4.0	.158	.082	.024	.154	.081	.024	.146	.078	.023	.139	.075	.022	.132	.072	.022	
5.0	.150	.077	.022	.147	.075	.022	.140	.073	.021	.134	.070	.021	.128	.068	.020	
6.0	.143	.072	.021	.140	.071	.020	.134	.069	.020	.129	.067	.020	.123	.065	.019	
7.0	.137	.068	.019	.134	.067	.019	.129	.065	.019	.124	.063	.018	.119	.062	.018	
8.0	.131	.064	.018	.128	.063	.018	.124	.062	.018	.119	.060	.017	.115	.059	.017	
9.0	.125	.061	.017	.123	.060	.017	.119	.059	.017	.115	.058	.016	.111	.056	.016	
10.0	.120	.058	.016	.118	.057	.016	.114	.056	.016	.111	.055	.016	.107	.054	.015	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.157	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.134	.099	.072	.115	.086	.062	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.108	.076	.051	.074	.053	.036	.043	.031	.022	.014	.010	.007	
6.0	.118	.078	.049	.102	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.096	.061	.036	.067	.043	.026	.039	.025	.015	.012	.008	.005	
8.0	.106	.064	.036	.092	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.097	.055	.027	.083	.048	.024	.058	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	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	19.0	20.0	19.2	20.1	20.3	19.0	20.0	19.2	20.1	20.3
3H	18.9	19.8	19.2	20.0	20.2	18.9	19.8	19.2	20.0	20.2
4H	18.9	19.7	19.2	20.0	20.2	18.9	19.8	19.2	20.0	20.2
6H	18.9	19.7	19.2	19.9	20.2	18.9	19.7	19.2	20.0	20.2
8H	19.0	19.7	19.3	20.0	20.2	19.0	19.8	19.3	20.0	20.3
12H	19.0	19.8	19.3	20.0	20.3	19.1	19.8	19.4	20.1	20.4
4H 2H	18.8	19.6	19.1	19.8	20.1	18.8	19.6	19.1	19.8	20.1
3H	18.7	19.5	19.1	19.7	20.0	18.8	19.5	19.1	19.8	20.0
4H	18.8	19.4	19.1	19.7	20.0	18.8	19.4	19.1	19.7	20.1
6H	18.9	19.4	19.2	19.8	20.1	18.9	19.5	19.3	19.8	20.2
8H	19.0	19.5	19.4	19.8	20.2	19.0	19.6	19.4	19.9	20.3
12H	19.1	19.6	19.5	20.0	20.4	19.2	19.7	19.6	20.1	20.5
8H 4H	18.7	19.2	19.1	19.6	20.0	18.7	19.3	19.1	19.6	20.0
6H	18.9	19.3	19.3	19.7	20.1	18.9	19.4	19.4	19.8	20.2
8H	19.1	19.5	19.5	19.9	20.3	19.1	19.5	19.6	20.0	20.4
12H	19.4	19.7	19.8	20.1	20.6	19.5	19.8	19.9	20.2	20.7
12H 4H	18.7	19.2	19.1	19.5	19.9	18.7	19.2	19.1	19.6	19.9
6H	18.9	19.3	19.3	19.7	20.1	18.9	19.3	19.4	19.8	20.2
8H	19.1	19.5	19.6	19.9	20.4	19.2	19.5	19.7	20.0	20.4
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.8 / - 5.6					+ 2.7 / - 5.4				
1.5H	+ 5.4 / - 5.4					+ 5.3 / - 5.3				
2.0H	+ 0.8 / - 0.3					+ 0.8 / - 0.3				

CIE Pub.117, 1723 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.9)
 Area: 0.00541 m2

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:

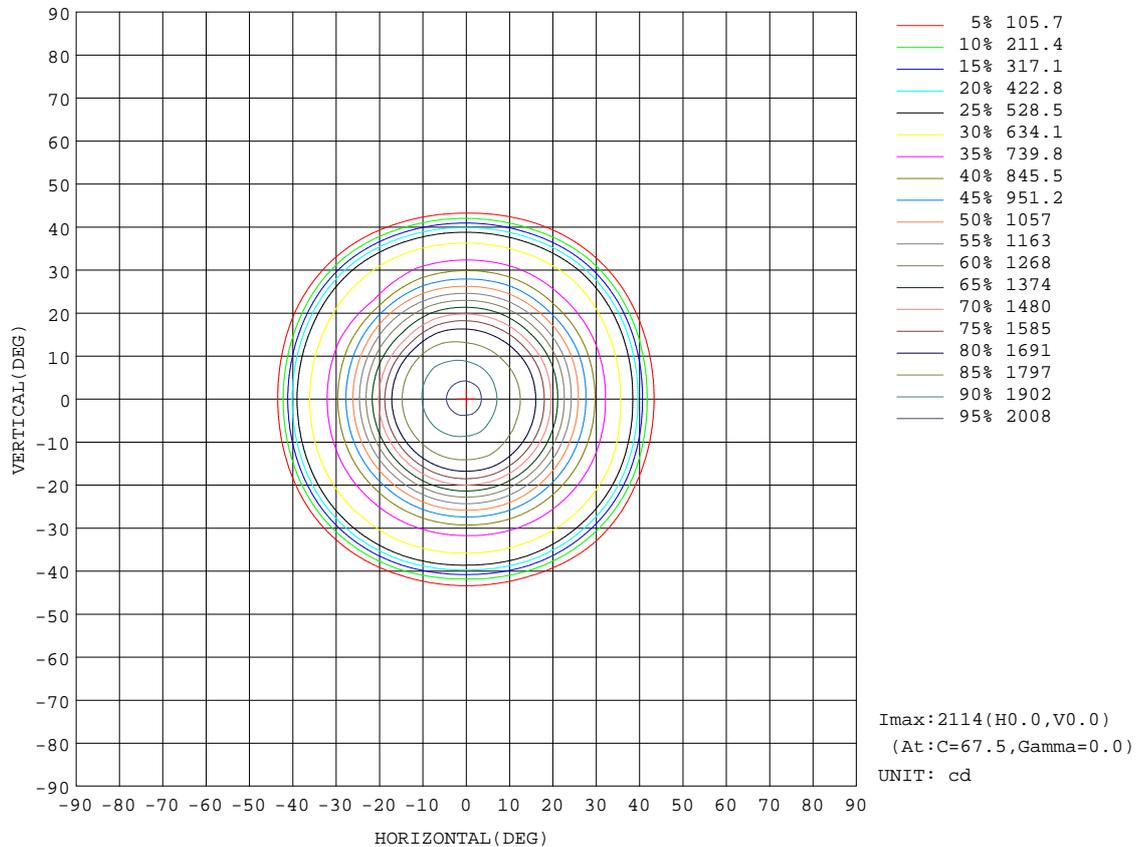
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	87	80	76	86	80	76	85	80	76	73
0.80	94	88	84	94	88	84	92	87	84	80
1.00	99	93	89	98	93	89	96	92	88	84
1.25	103	97	94	102	97	93	100	96	93	88
1.50	105	101	97	104	100	97	102	98	96	91
2.00	108	104	101	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	107	104	106	104	102	95
4.00	114	111	108	111	109	107	108	106	104	97
5.00	115	112	111	113	111	109	109	107	106	98
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:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:

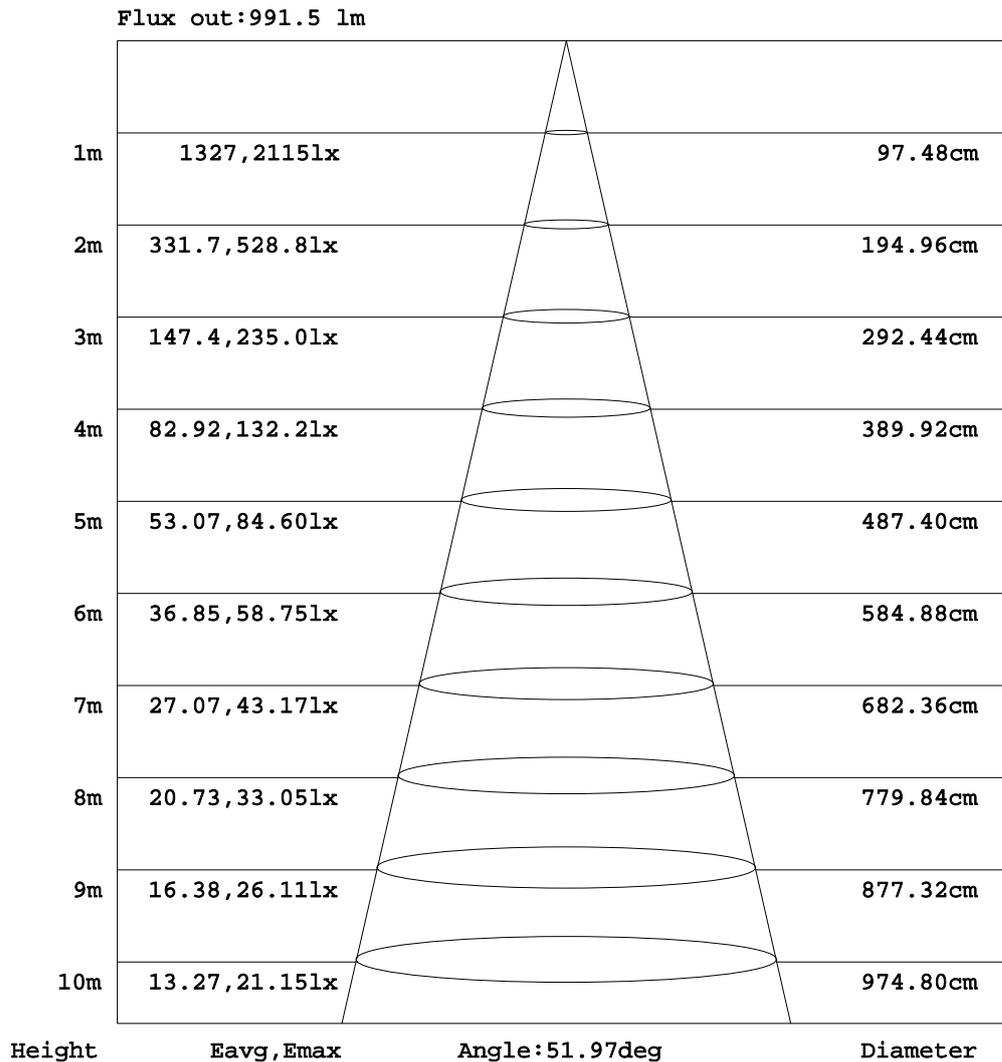


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

AAI Figure

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:



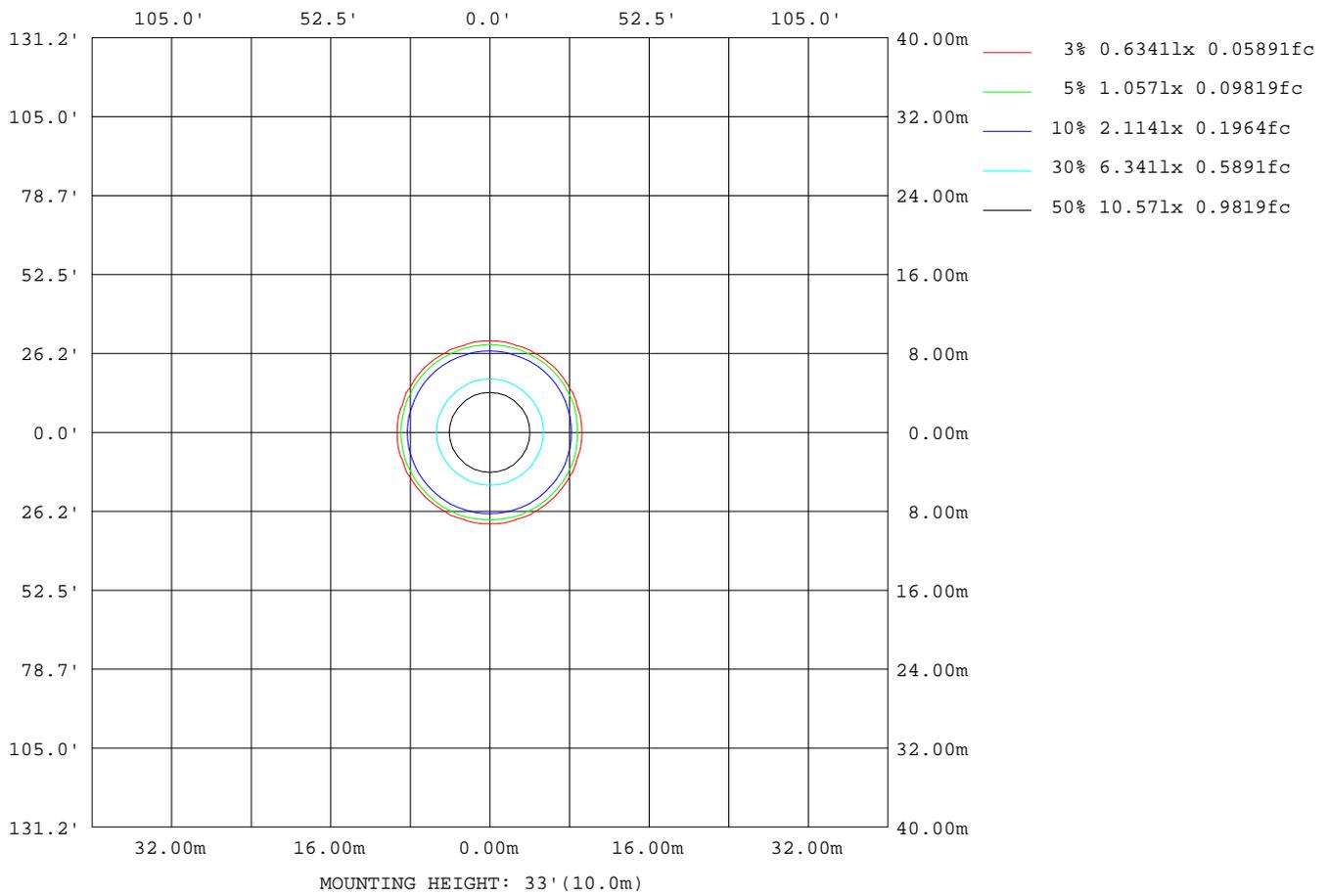
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:220.46V I:0.0958A P:20.588W PF:0.9747 Freq:50.01Hz Lamp Flux:1723.34x1 lm		
NAME: DL2092-WHTC20C01P	TYPE:	WEIGHT:
SPEC.: black R80 3000K+5700K	DIM.:	SERIAL No.:
MFR.:	SUR.: 83mm	Shielding Angle:

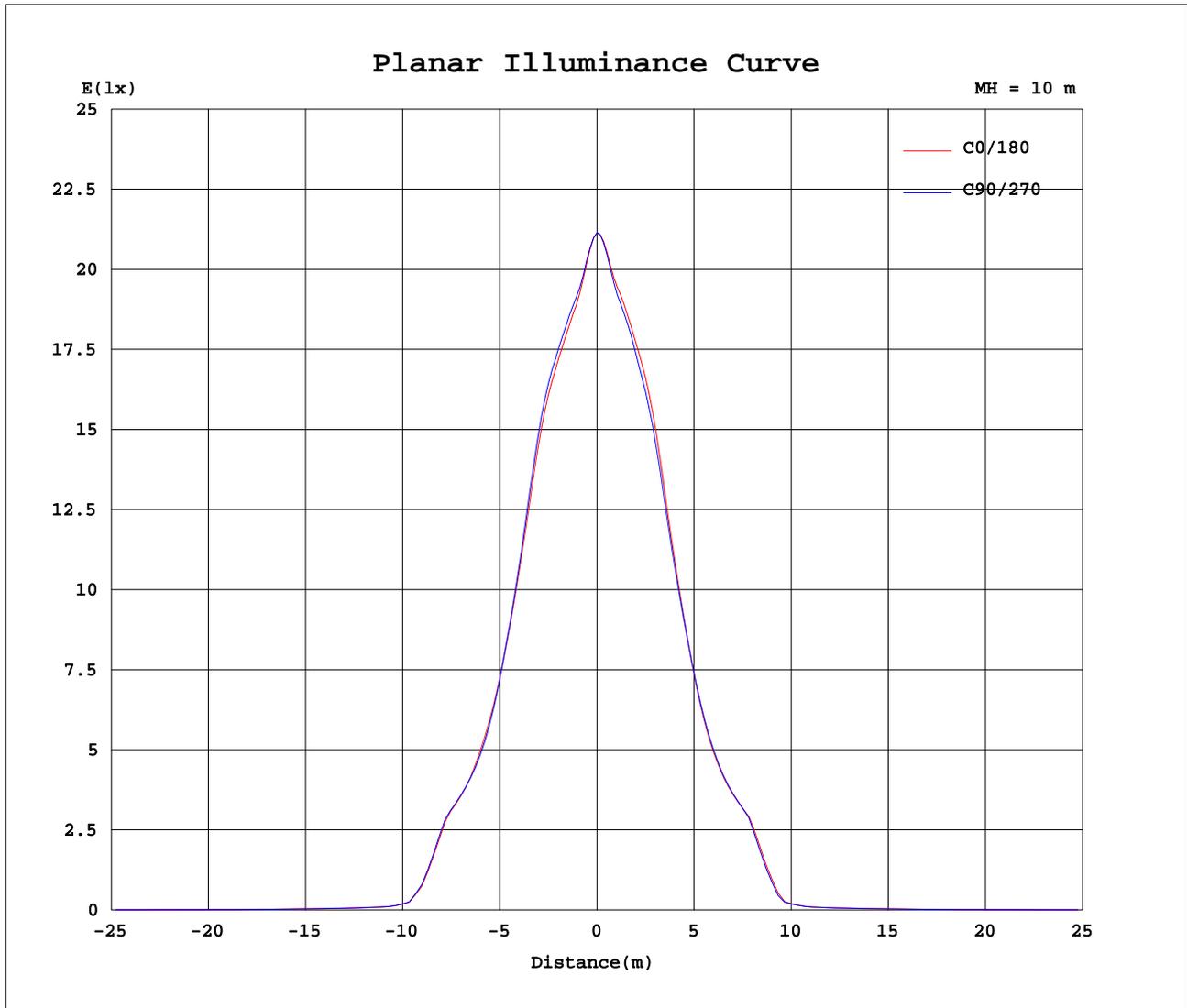
AvgL	cd/m2
L_0~180(65)av	6228
L_0~180(75)av	6059
L_0~180(85)av	14516
L_90~270(65)av	6253
L_90~270(75)av	6136
L_90~270(85)av	14442
L_45(65)av	6270
L_45(75)av	6126
L_45(85)av	14489

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-10-20

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

