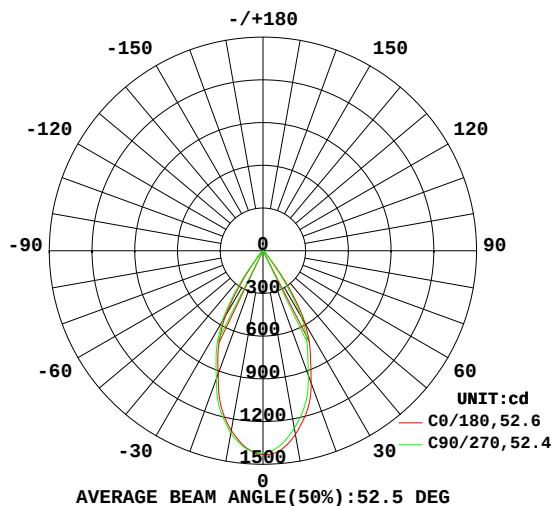


LUMINAIRE PHOTOMETRIC TEST REPORT

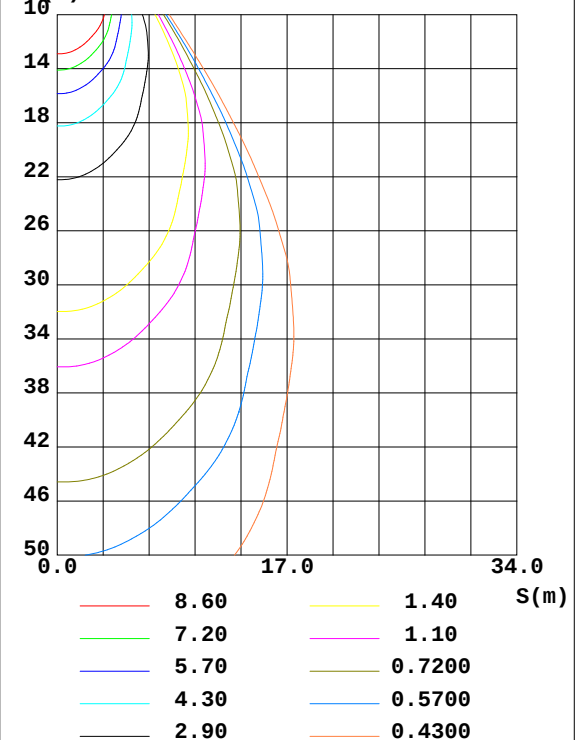
Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 92.98 lm/W			
MODEL	ML13111202 3000K	I _{max} (cd)	1431	S/MH(C0/180)	0.77
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	0.80
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	1007.6	η UP, DN(C0-180)	0.0, 49.8
NOMINAL FLUX(lm)	1007.61	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	0.85

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: 2024-03-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

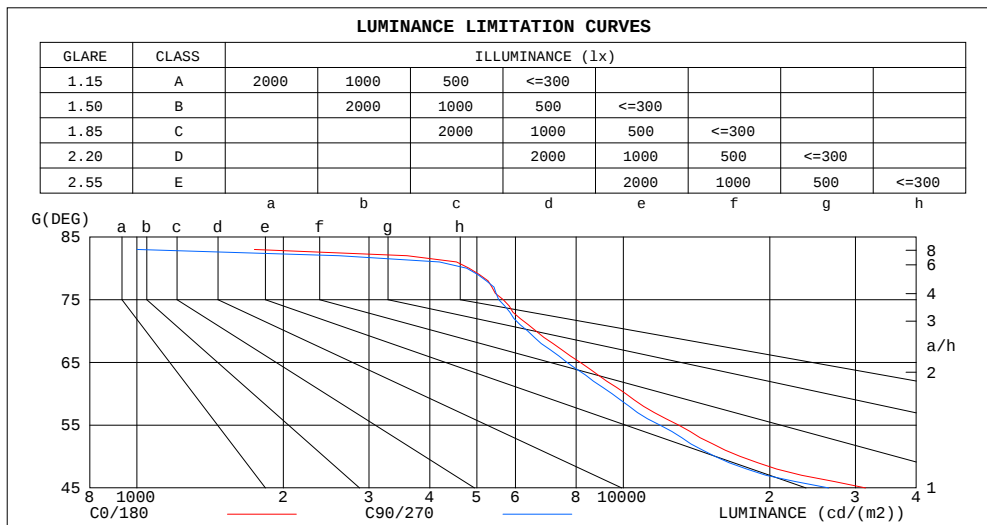
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1310	1290	1268	1258	1282	1288	1299	1308	0- 10	129.1	129.1	12.8,12.8
20	989.4	974.6	932.3	901.7	922.7	936.8	958.4	982.5	10- 20	317.3	446.3	44.3,44.3
30	591.6	583.8	545.5	511.7	526.6	543.5	573.6	595.2	20- 30	344.2	790.6	78.5,78.5
40	84.60	79.74	65.55	58.00	58.78	62.25	72.80	83.52	30- 40	173.6	964.2	95.7,95.7
50	17.77	17.14	15.78	14.78	14.56	14.97	16.02	17.13	40- 50	26.10	990.3	98.3,98.3
60	8.039	7.935	7.533	7.020	6.807	6.811	7.239	7.718	50- 60	9.894	1000	99.3,99.3
70	3.597	3.647	3.458	3.145	2.838	2.776	2.973	3.301	60- 70	5.012	1005	99.8,99.8
80	1.330	1.400	1.315	1.079	0.8571	0.7499	0.8818	1.148	70- 80	2.191	1007	100,100
90	0.0154	0.0116	0.0116	0.0154	0	0	0	0	80- 90	0.2277	1008	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:2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	113	84
80	4818	4762
75	5663	5541
70	6615	6359
65	8149	7654
60	10112	9476
55	12990	11885
50	17388	15440
45	31481	26434

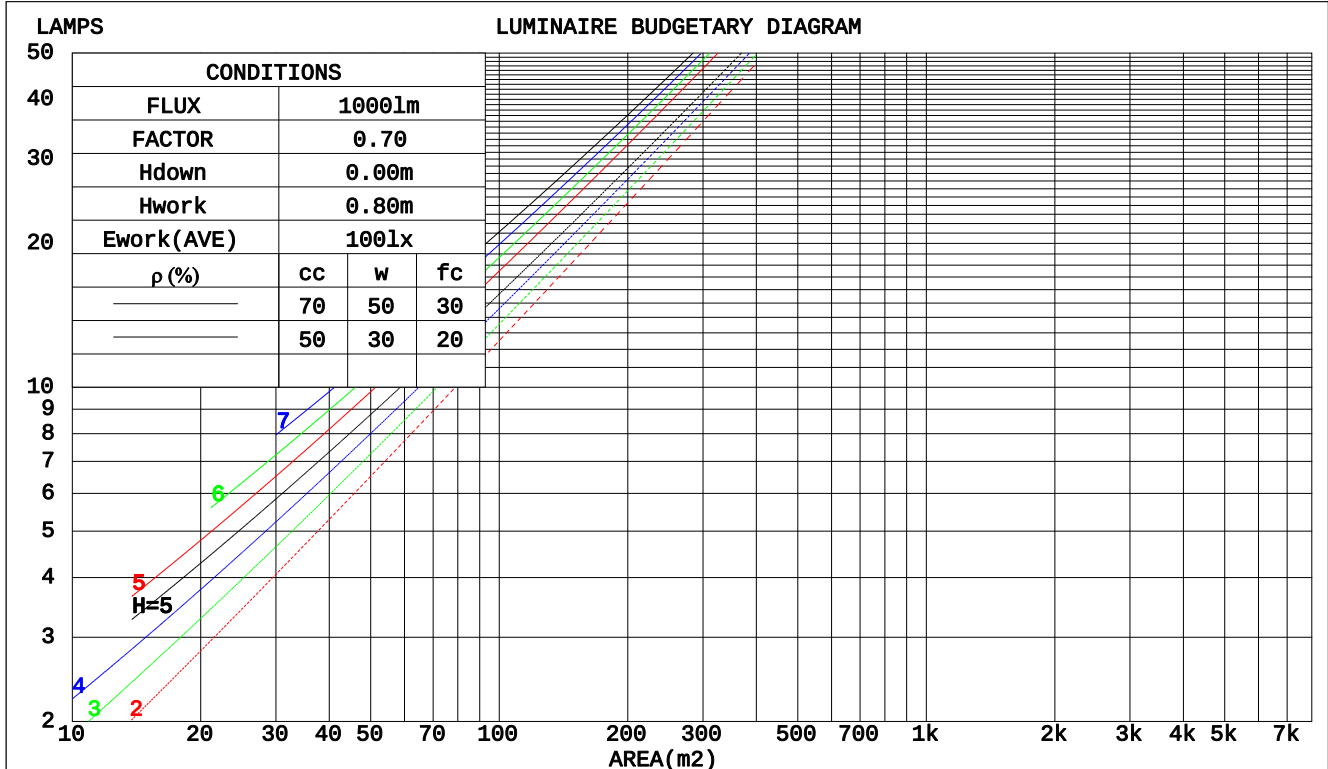
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2024-03-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	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	1.11	1.09	1.07	1.09	1.07	1.05	1.05	1.03	1.02	1.01	.99	.99	.98	.97	.96	.94
2.0	1.04	1.00	.97	1.02	.99	.96	.99	.96	.94	.96	.94	.92	.93	.91	.90	.88
3.0	.97	.93	.89	.96	.92	.88	.93	.90	.87	.91	.88	.85	.89	.86	.84	.83
4.0	.91	.86	.82	.90	.85	.82	.88	.84	.81	.86	.83	.80	.84	.81	.79	.77
5.0	.86	.81	.76	.85	.80	.76	.83	.79	.75	.82	.78	.75	.80	.77	.74	.73
6.0	.81	.76	.72	.80	.75	.71	.79	.74	.71	.78	.73	.70	.76	.73	.70	.68
7.0	.77	.71	.67	.76	.71	.67	.75	.70	.67	.74	.69	.66	.73	.69	.66	.65
8.0	.73	.67	.63	.72	.67	.63	.71	.66	.63	.70	.66	.63	.69	.65	.62	.61
9.0	.69	.63	.60	.69	.63	.60	.68	.63	.59	.67	.62	.59	.66	.62	.59	.58
10.0	.66	.60	.56	.65	.60	.56	.64	.60	.56	.64	.59	.56	.63	.59	.56	.55



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm					
NAME: DL9411-BK3K10C01			TYPE:		WEIGHT:
SPEC.: black RA90			DIM.:		SERIAL No.:
MFR.:			SUR.: 45mm		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	.171	.097	.031	.164	.094	.030	.152	.087	.028	.140	.081	.026	.130	.075	.024	
2.0	.163	.089	.027	.157	.087	.027	.147	.082	.025	.137	.077	.024	.128	.073	.023	
3.0	.155	.082	.025	.150	.080	.024	.141	.077	.023	.133	.073	.022	.125	.069	.021	
4.0	.147	.077	.023	.143	.075	.022	.136	.072	.021	.128	.069	.021	.122	.066	.020	
5.0	.140	.072	.021	.137	.070	.020	.130	.068	.020	.124	.065	.019	.118	.063	.019	
6.0	.134	.067	.019	.131	.066	.019	.125	.064	.019	.119	.062	.018	.114	.060	.018	
7.0	.128	.063	.018	.125	.062	.018	.120	.061	.017	.115	.059	.017	.111	.058	.017	
8.0	.123	.060	.017	.120	.059	.017	.116	.058	.016	.111	.056	.016	.107	.055	.016	
9.0	.118	.057	.016	.115	.056	.016	.111	.055	.016	.107	.054	.015	.104	.053	.015	
10.0	.113	.054	.015	.111	.054	.015	.107	.053	.015	.104	.052	.015	.100	.051	.014	

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	.171	.157	.145	.146	.135	.125	.100	.093	.087	.058	.054	.050	.018	.017	.016	
2.0	.155	.133	.114	.133	.114	.098	.091	.079	.068	.052	.046	.040	.017	.015	.013	
3.0	.142	.114	.091	.122	.098	.079	.084	.068	.055	.048	.040	.032	.016	.013	.011	
4.0	.132	.099	.073	.113	.085	.064	.078	.059	.045	.045	.035	.027	.014	.011	.009	
5.0	.123	.087	.061	.106	.075	.053	.073	.053	.037	.042	.031	.022	.014	.010	.007	
6.0	.115	.078	.051	.099	.067	.044	.068	.047	.031	.040	.028	.019	.013	.009	.006	
7.0	.109	.070	.043	.094	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005	
8.0	.103	.064	.037	.089	.055	.032	.061	.039	.023	.036	.023	.014	.012	.008	.004	
9.0	.098	.058	.032	.084	.051	.028	.058	.036	.020	.034	.021	.012	.011	.007	.004	
10.0	.093	.054	.028	.080	.047	.024	.056	.033	.017	.033	.020	.010	.011	.006	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm											
NAME: DL9411-BK3K10C01					TYPE:			WEIGHT:			
SPEC.: black RA90					DIM.:			SERIAL No.:			
MFR.:					SUR.: 45mm			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	22.3	23.3	22.6	23.4	23.6	21.6	22.5	21.8	22.6	22.8	
	3H	22.2	23.1	22.5	23.3	23.5	21.5	22.3	21.7	22.5	22.7
	4H	22.2	22.9	22.4	23.2	23.4	21.4	22.2	21.7	22.4	22.6
	6H	22.1	22.8	22.4	23.1	23.3	21.3	22.1	21.6	22.3	22.5
	8H	22.1	22.8	22.4	23.0	23.3	21.3	22.0	21.6	22.2	22.5
	12H	22.0	22.7	22.3	23.0	23.2	21.2	21.9	21.6	22.2	22.5
4H	2H	22.1	22.9	22.4	23.1	23.3	21.4	22.1	21.6	22.4	22.6
	3H	22.0	22.7	22.3	23.0	23.2	21.2	21.9	21.6	22.2	22.5
	4H	22.0	22.6	22.3	22.9	23.2	21.2	21.8	21.5	22.1	22.4
	6H	21.9	22.4	22.3	22.8	23.1	21.1	21.7	21.5	22.0	22.4
	8H	21.8	22.3	22.2	22.7	23.1	21.1	21.6	21.5	21.9	22.3
	12H	21.8	22.3	22.2	22.6	23.0	21.0	21.5	21.5	21.9	22.3
8H	4H	21.8	22.3	22.2	22.7	23.0	21.1	21.6	21.5	21.9	22.3
	6H	21.8	22.2	22.2	22.6	23.0	21.0	21.4	21.5	21.8	22.2
	8H	21.7	22.1	22.2	22.5	22.9	21.0	21.3	21.4	21.8	22.2
	12H	21.7	22.0	22.1	22.4	22.9	20.9	21.2	21.4	21.7	22.1
12H	4H	21.8	22.2	22.2	22.6	23.0	21.0	21.5	21.4	21.9	22.2
	6H	21.7	22.1	22.2	22.5	22.9	21.0	21.3	21.4	21.8	22.2
	8H	21.7	22.0	22.1	22.4	22.9	20.9	21.2	21.4	21.7	22.2
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 4.1 / - 6.2					+ 3.6 / - 5.0					
1.5H	+ 6.5 / - 5.3					+ 5.8 / - 4.2					
2.0H	+ 3.5 / - 1.7					+ 2.8 / - 1.5					

CIE Pub.117, 1008 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.0)
Area: 0.00159 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-03-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:

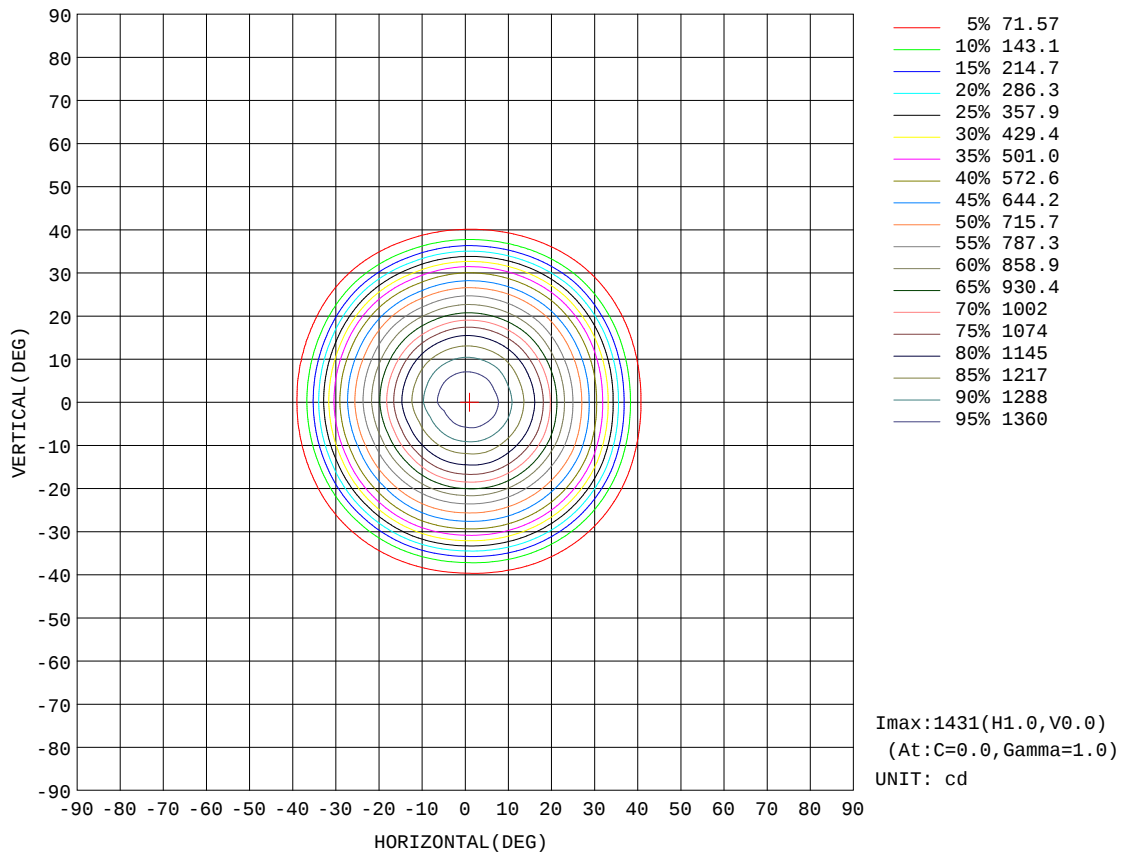
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	79	88	83	79	88	82	79	76
0.80	96	91	87	95	90	87	94	90	86	83
1.00	100	95	91	99	94	91	98	94	91	87
1.25	104	99	96	103	99	95	101	97	95	91
1.50	107	102	99	105	101	98	103	100	97	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	96
3.00	112	109	106	110	107	105	107	105	103	97
4.00	114	111	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	110	109	108	107	99
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: 2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity: 65.0%
 Test Distance: 7.450m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:

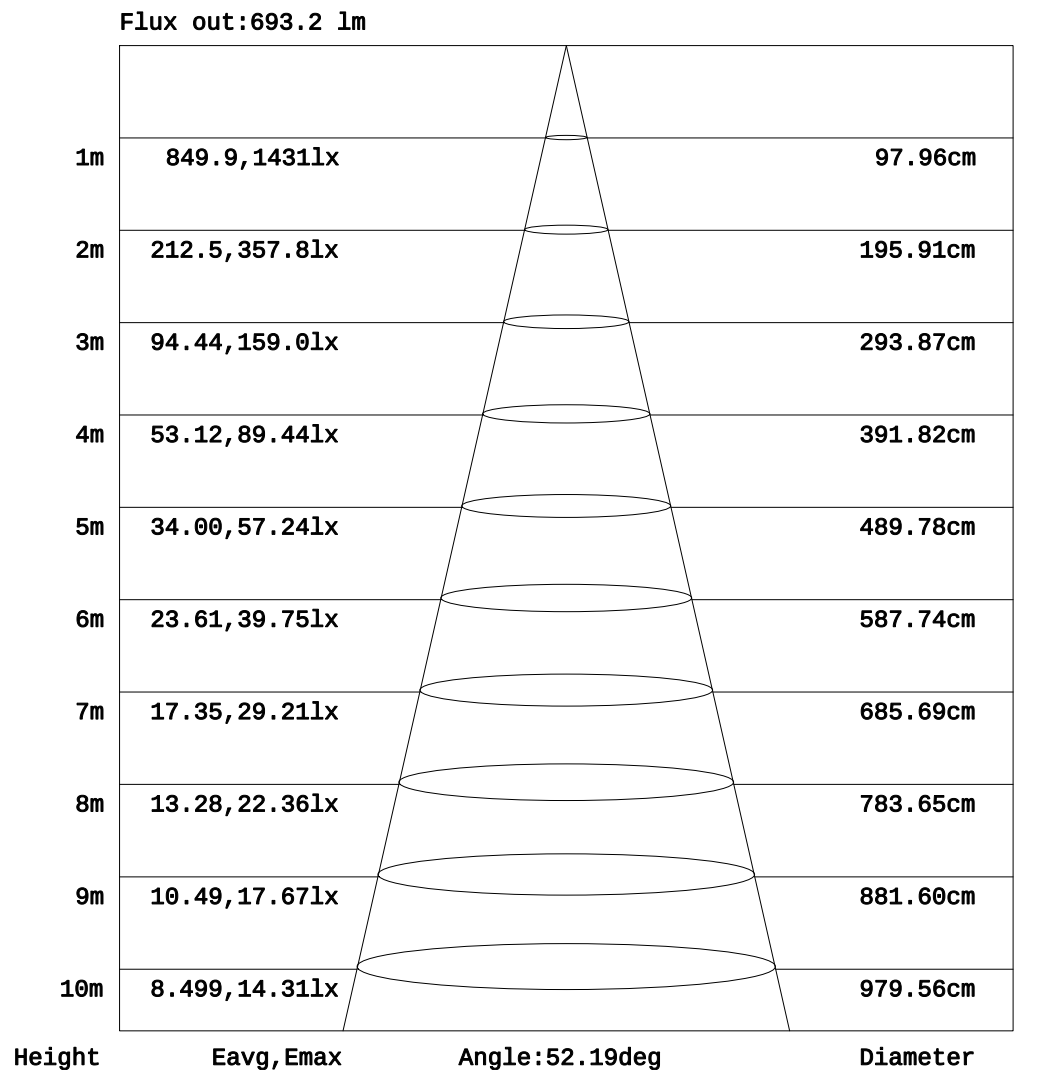


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

AAI Figure

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:



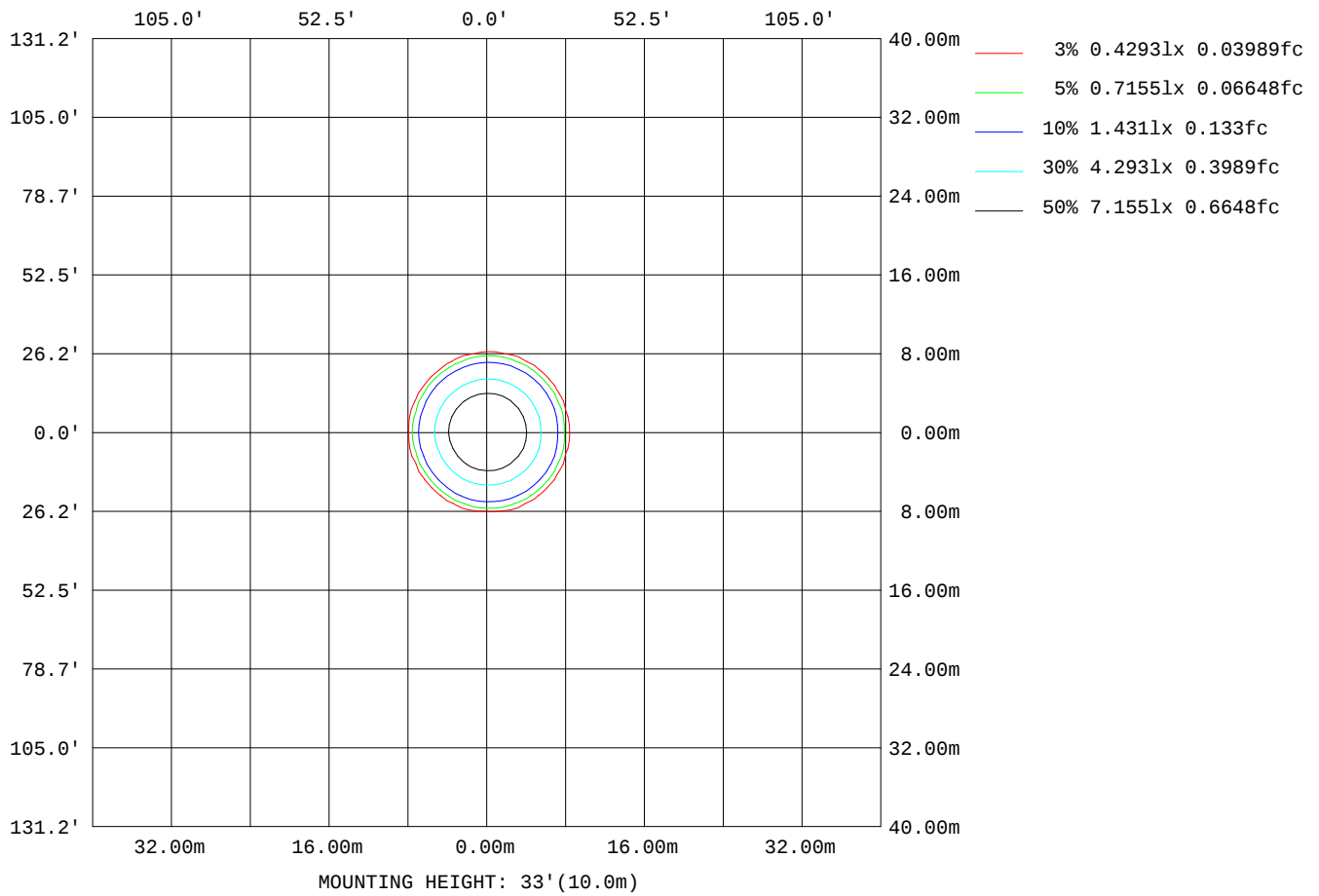
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
 Humidity:65.0%
 Test Distance:7.450m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-03-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity:65.0%
Test Distance:7.450m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:231.54V I:0.0482A P:10.837W PF:0.9711 Freq:49.99Hz Lamp Flux:1007.61x1 lm		
NAME: DL9411-BK3K10C01	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 45mm	Shielding Angle:

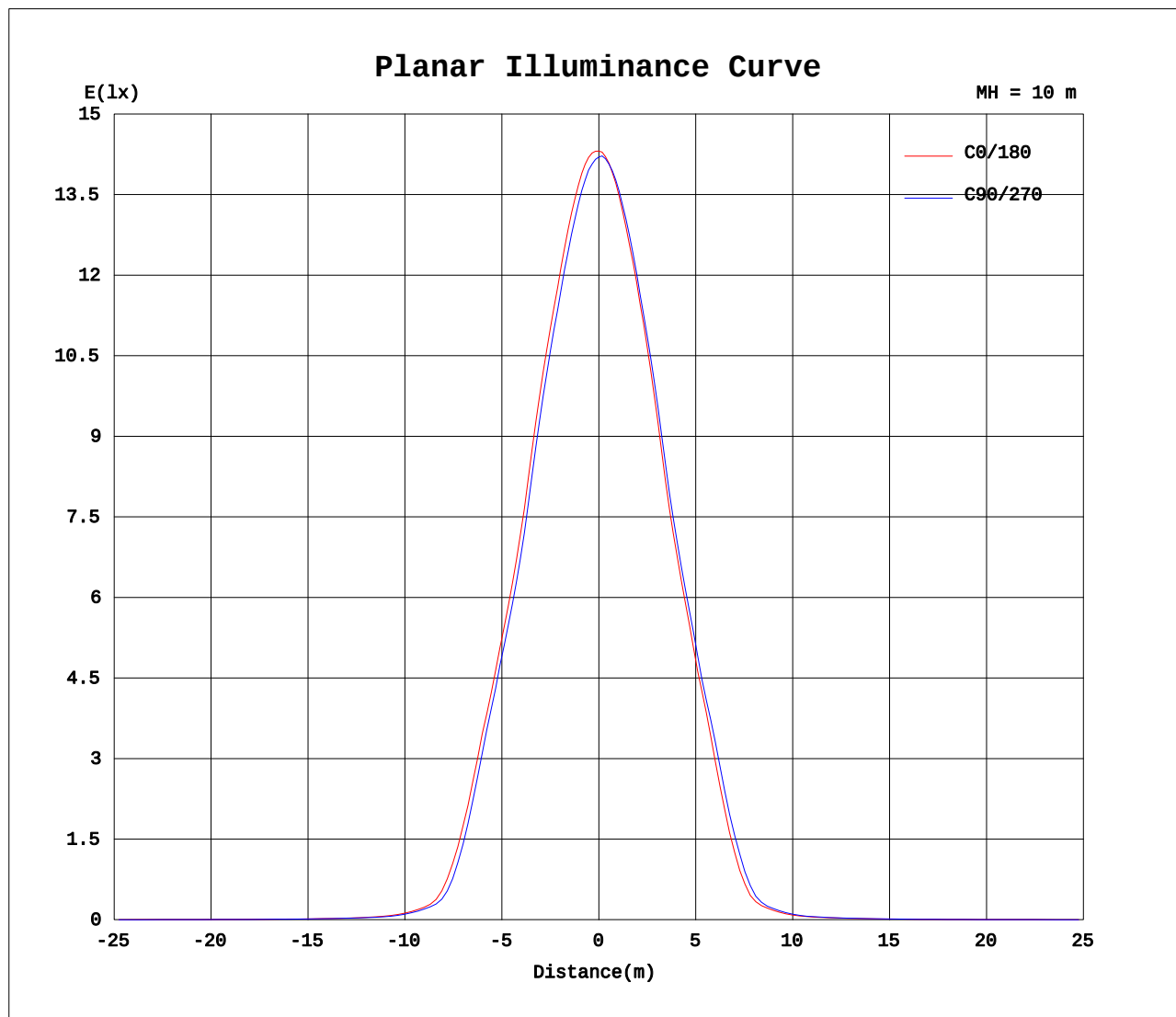
AvgL	cd/m2
L_0~180(65)av	7412
L_0~180(75)av	4936
L_0~180(85)av	57
L_90~270(65)av	7345
L_90~270(75)av	4898
L_90~270(85)av	42
L_45(65)av	7377
L_45(75)av	4940
L_45(85)av	56

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2024-03-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_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: 2024-03-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.428
Humidity: 65.0%
Test Distance: 7.450m [K=1.0000]
Remarks:

```

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

```