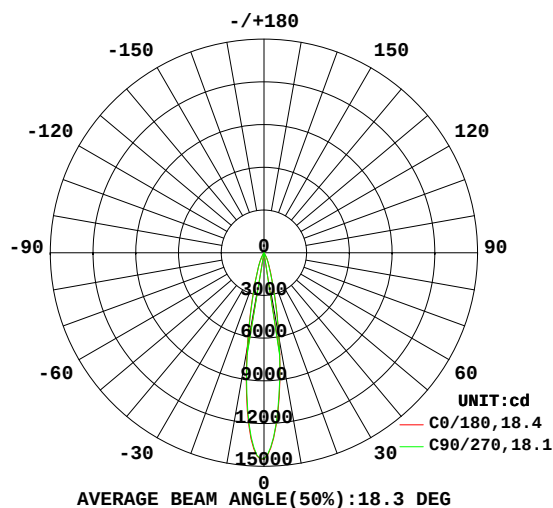


LUMINAIRE PHOTOMETRIC TEST REPORT

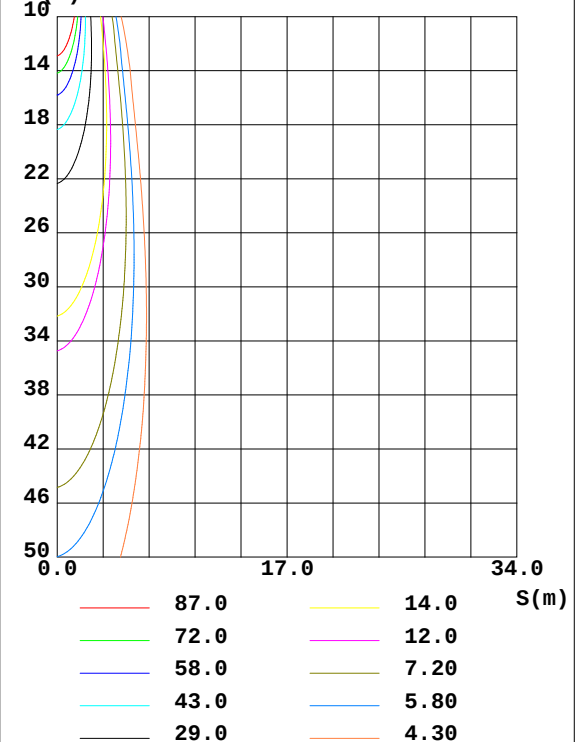
Test:U:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4KBK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 74.76 lm/W			
MODEL	4000K	I _{max} (cd)	14529	S/MH(C0/180)	0.33
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.32
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	2117.2	η UP, DN(C0-180)	0.0, 47.9
NOMINAL FLUX(lm)	2117.23	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 52.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	220	η down(%)	100.0	CIBSE SHR MAX	1.00

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:2023-11-07

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:

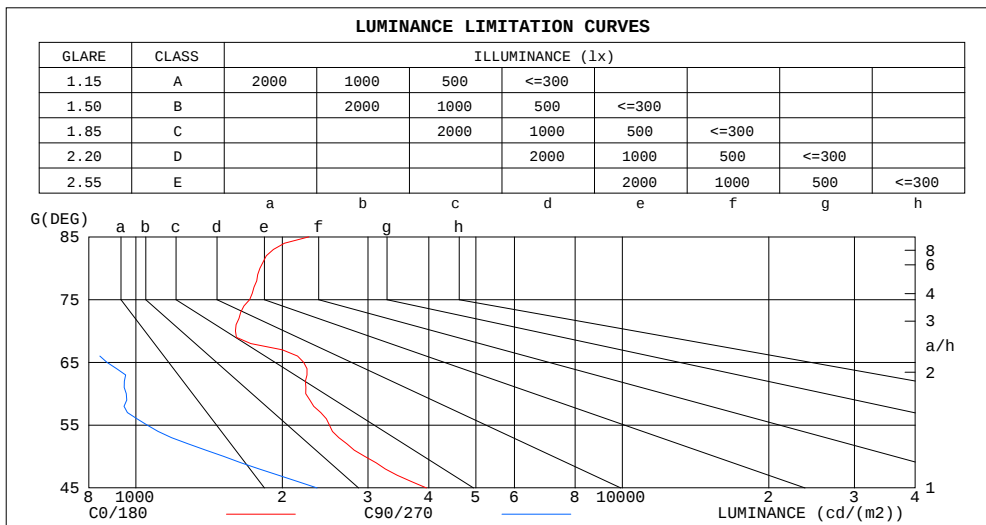
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	610.7	589.4	603.6	634.0	682.6	669.3	661.9	659.4	0- 10	935.0	935.0	44.2, 44.2
20	118.1	108.8	107.4	115.7	130.6	128.3	130.1	132.1	10- 20	799.0	1734	81.9, 81.9
30	24.05	18.98	20.20	24.47	27.31	23.39	24.52	26.57	20- 30	288.9	2023	95.5, 95.5
40	4.515	3.312	2.963	3.645	4.637	3.512	3.349	4.743	30- 40	55.95	2079	98.2, 98.2
50	1.926	1.281	0.9877	1.464	2.119	1.426	1.081	1.882	40- 50	18.91	2098	99.1, 99.1
60	1.133	0.7518	0.4846	0.7515	1.348	0.8330	0.6344	0.9676	50- 60	10.18	2108	99.6, 99.6
70	0.5558	0.3103	0.0502	0.3096	0.7515	0.2784	0.0606	0.3093	60- 70	6.019	2114	99.8, 99.8
80	0.3168	0.0606	0.0274	0.0738	0.5085	0.0717	0.0281	0.0571	70- 80	2.176	2116	99.9, 99.9
90	0.0764	0.0239	0.0116	0.0313	0.0251	0.0120	0.0058	0.0116	80- 90	1.148	2117	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: ×10cd									UNIT: lm		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4KBK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2269	214
80	1799	156
75	1714	144
70	1603	145
65	2213	872
60	2235	956
55	2499	1054
50	2955	1515
45	3955	2357

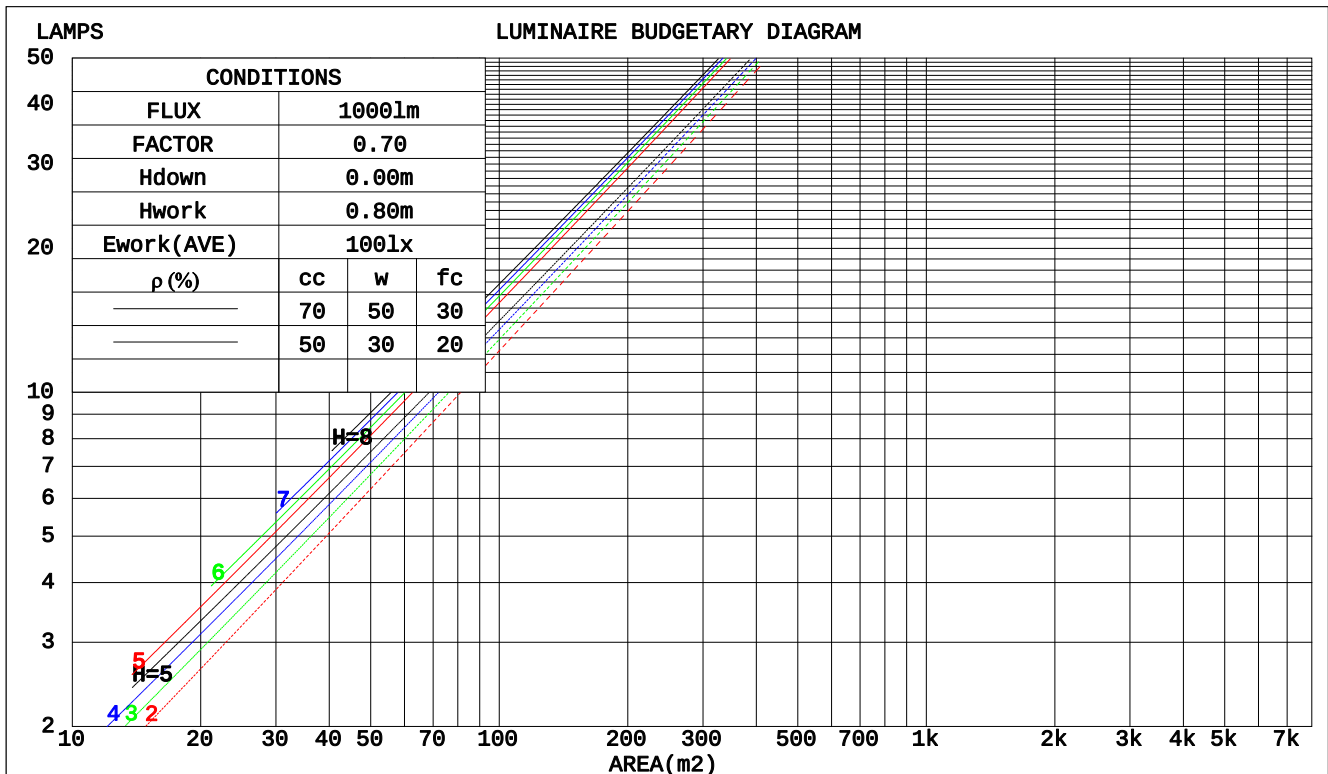
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25DEG
Operators:
Test Date: 2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4KBK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	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	.00
1.0	1.13	1.11	1.10	1.11	1.09	1.08	1.07	1.06	1.05	1.03	1.02	1.02	1.00	.99	.99	.97
2.0	1.08	1.05	1.03	1.06	1.04	1.02	1.03	1.01	.00	1.01	.99	.97	.98	.97	.95	.94
3.0	1.04	1.00	.98	1.03	.99	.97	1.00	.98	.95	.98	.96	.94	.96	.94	.93	.91
4.0	1.00	.96	.93	.99	.96	.93	.97	.94	.92	.95	.93	.91	.94	.92	.90	.89
5.0	.97	.93	.90	.96	.92	.90	.94	.91	.89	.93	.90	.88	.92	.89	.87	.86
6.0	.94	.90	.87	.93	.89	.87	.92	.89	.86	.91	.88	.86	.90	.87	.85	.84
7.0	.91	.87	.84	.91	.87	.84	.90	.86	.84	.88	.86	.83	.88	.85	.83	.82
8.0	.89	.85	.82	.88	.85	.82	.87	.84	.82	.86	.84	.81	.86	.83	.81	.80
9.0	.86	.83	.80	.86	.82	.80	.85	.82	.80	.85	.82	.80	.84	.81	.79	.78
10.0	.84	.81	.78	.84	.80	.78	.83	.80	.78	.83	.80	.78	.82	.80	.78	.77



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-11-07

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:

WEC AND CCEC

Test:U:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm					
NAME: DL694005-4KBK			TYPE:		WEIGHT:
SPEC.: black RA90			DIM.:		SERIAL No.:
MFR.:			SUR.: 26*26mm		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	.132	.075	.024	.126	.072	.023	.113	.065	.021	.102	.059	.019	.092	.053	.017	
2.0	.122	.067	.021	.117	.064	.020	.106	.059	.018	.097	.054	.017	.088	.050	.016	
3.0	.113	.060	.018	.109	.058	.018	.100	.054	.017	.092	.051	.016	.085	.047	.015	
4.0	.106	.055	.016	.102	.053	.016	.095	.050	.015	.088	.047	.014	.082	.045	.014	
5.0	.099	.050	.015	.096	.049	.014	.090	.047	.014	.084	.044	.013	.079	.042	.013	
6.0	.093	.047	.013	.091	.046	.013	.085	.044	.013	.081	.042	.012	.076	.040	.012	
7.0	.088	.044	.012	.086	.043	.012	.082	.041	.012	.077	.040	.012	.073	.038	.011	
8.0	.084	.041	.012	.082	.040	.011	.078	.039	.011	.074	.038	.011	.071	.036	.011	
9.0	.080	.039	.011	.078	.038	.011	.075	.037	.010	.072	.036	.010	.068	.035	.010	
10.0	.076	.037	.010	.075	.036	.010	.072	.035	.010	.069	.034	.010	.066	.033	.010	

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	.168	.158	.148	.144	.135	.128	.098	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.150	.133	.119	.128	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.134	.113	.096	.115	.098	.084	.079	.068	.059	.046	.040	.035	.015	.013	.011	
4.0	.121	.098	.080	.104	.084	.069	.072	.059	.049	.041	.034	.029	.013	.011	.009	
5.0	.111	.085	.067	.095	.074	.058	.065	.052	.041	.038	.030	.024	.012	.010	.008	
6.0	.102	.075	.056	.087	.065	.049	.060	.046	.035	.035	.027	.021	.011	.009	.007	
7.0	.094	.067	.048	.081	.058	.042	.056	.041	.030	.032	.024	.018	.010	.008	.006	
8.0	.087	.060	.042	.075	.052	.036	.052	.037	.026	.030	.022	.015	.010	.007	.005	
9.0	.081	.054	.036	.070	.047	.032	.048	.033	.022	.028	.020	.013	.009	.006	.004	
10.0	.076	.050	.032	.066	.043	.028	.046	.030	.020	.027	.018	.012	.009	.006	.004	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm										
NAME: DL694005-4KBK					TYPE:			WEIGHT:		
SPEC.: black RA90					DIM.:			SERIAL No.:		
MFR.:					SUR.: 26*26mm			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	3.8	4.4	4.0	4.6	4.7	1.3	1.9	1.5	2.0	2.2
3H	4.4	4.9	4.6	5.1	5.3	1.3	1.9	1.6	2.1	2.3
4H	4.6	5.1	4.8	5.3	5.6	1.3	1.8	1.5	2.0	2.2
6H	4.9	5.4	5.2	5.6	5.9	1.2	1.7	1.5	1.9	2.2
8H	5.0	5.5	5.3	5.8	6.0	1.1	1.7	1.4	1.9	2.1
12H	5.2	5.7	5.5	5.9	6.2	1.1	1.6	1.4	1.9	2.1
4H 2H	3.8	4.4	4.1	4.6	4.8	1.5	2.1	1.8	2.3	2.5
3H	4.4	4.9	4.7	5.2	5.4	1.6	2.1	1.9	2.3	2.6
4H	4.7	5.1	5.0	5.4	5.7	1.5	1.9	1.8	2.2	2.5
6H	5.1	5.5	5.5	5.8	6.2	1.4	1.8	1.8	2.1	2.5
8H	5.3	5.7	5.7	6.0	6.4	1.4	1.7	1.7	2.1	2.4
12H	5.6	5.9	6.0	6.3	6.6	1.3	1.7	1.7	2.0	2.4
8H 4H	4.6	4.9	5.0	5.3	5.7	1.4	1.8	1.8	2.1	2.5
6H	5.0	5.3	5.5	5.7	6.1	1.3	1.7	1.8	2.0	2.5
8H	5.3	5.6	5.8	6.0	6.4	1.3	1.6	1.7	2.0	2.4
12H	5.7	5.9	6.1	6.3	6.8	1.2	1.5	1.7	1.9	2.4
12H 4H	4.5	4.9	4.9	5.2	5.6	1.4	1.8	1.8	2.1	2.5
6H	5.0	5.3	5.4	5.7	6.1	1.3	1.6	1.8	2.0	2.5
8H	5.3	5.5	5.7	6.0	6.4	1.3	1.5	1.8	2.0	2.4
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.2 / - 1.0					+ 1.9 / - 3.1				
1.5H	+ 2.4 / - 1.4					+ 3.1 / - 2.2				
2.0H	+ 1.7 / - 1.7					+ 2.1 / - 1.6				

CIE Pub.117, 2117 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.6)
Area: 0.01014 m2

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4KBK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:

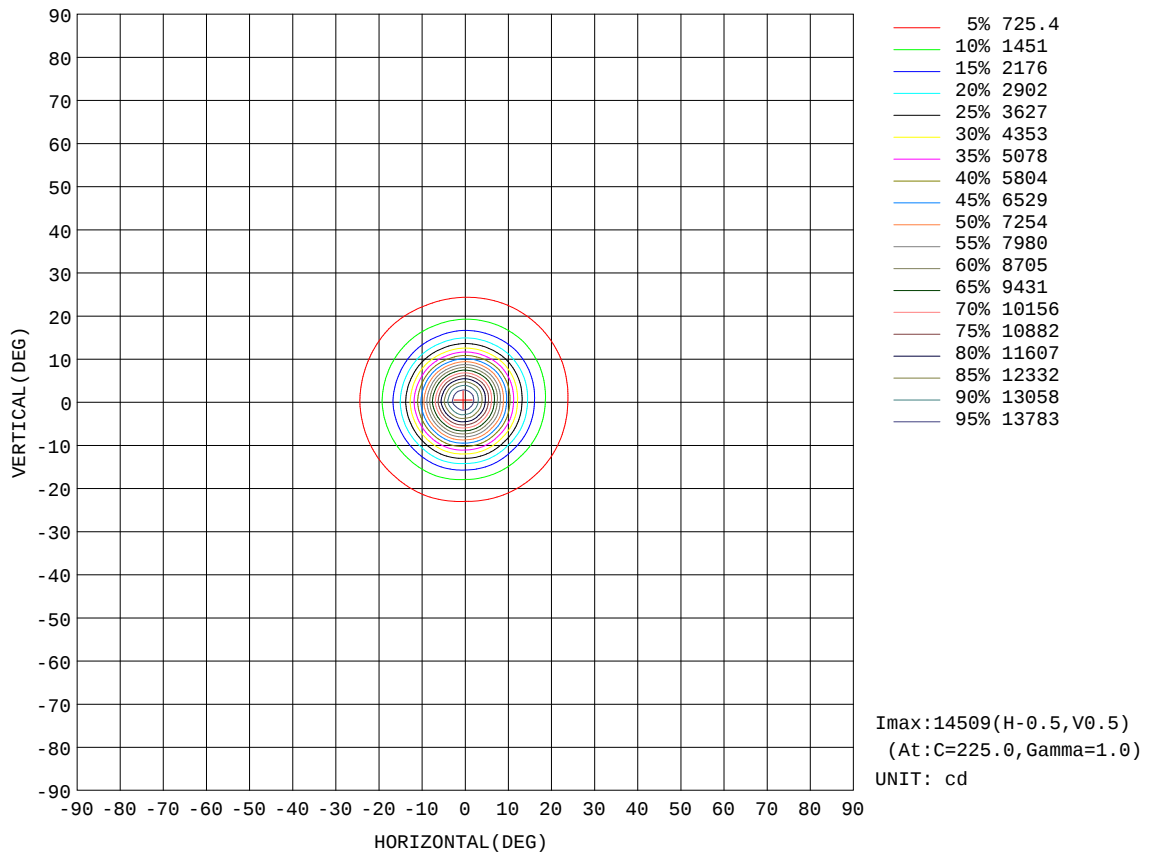
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	90	85	81	90	84	81	89	84	81	78
0.80	97	92	89	97	92	89	96	91	88	85
1.00	101	96	93	100	96	93	99	95	92	88
1.25	105	100	97	104	100	97	102	98	96	92
1.50	107	103	100	106	102	100	104	101	98	94
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	104	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	116	114	112	113	112	110	110	108	107	100
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:2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4K BK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:

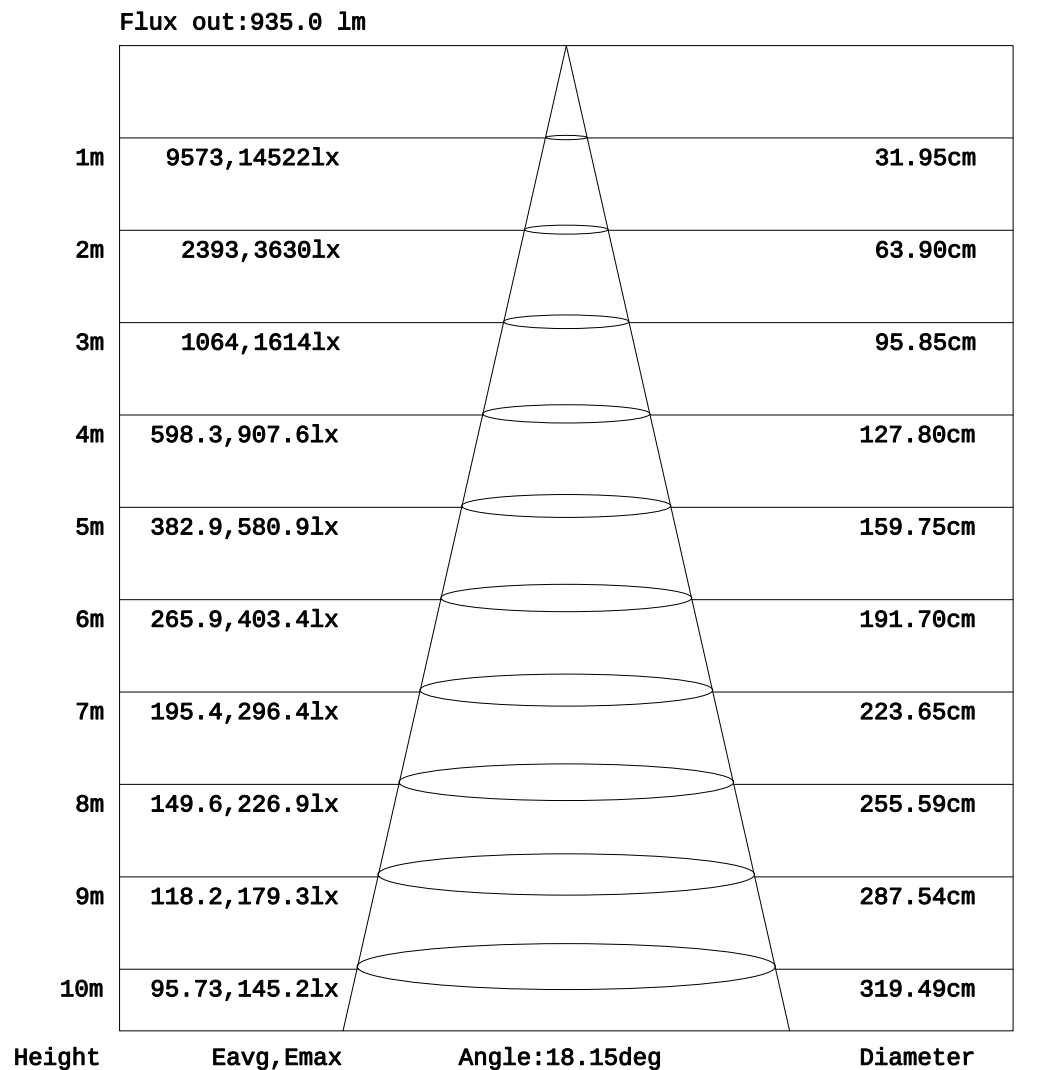


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25DEG
Operators:
Test Date:2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4K BK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:



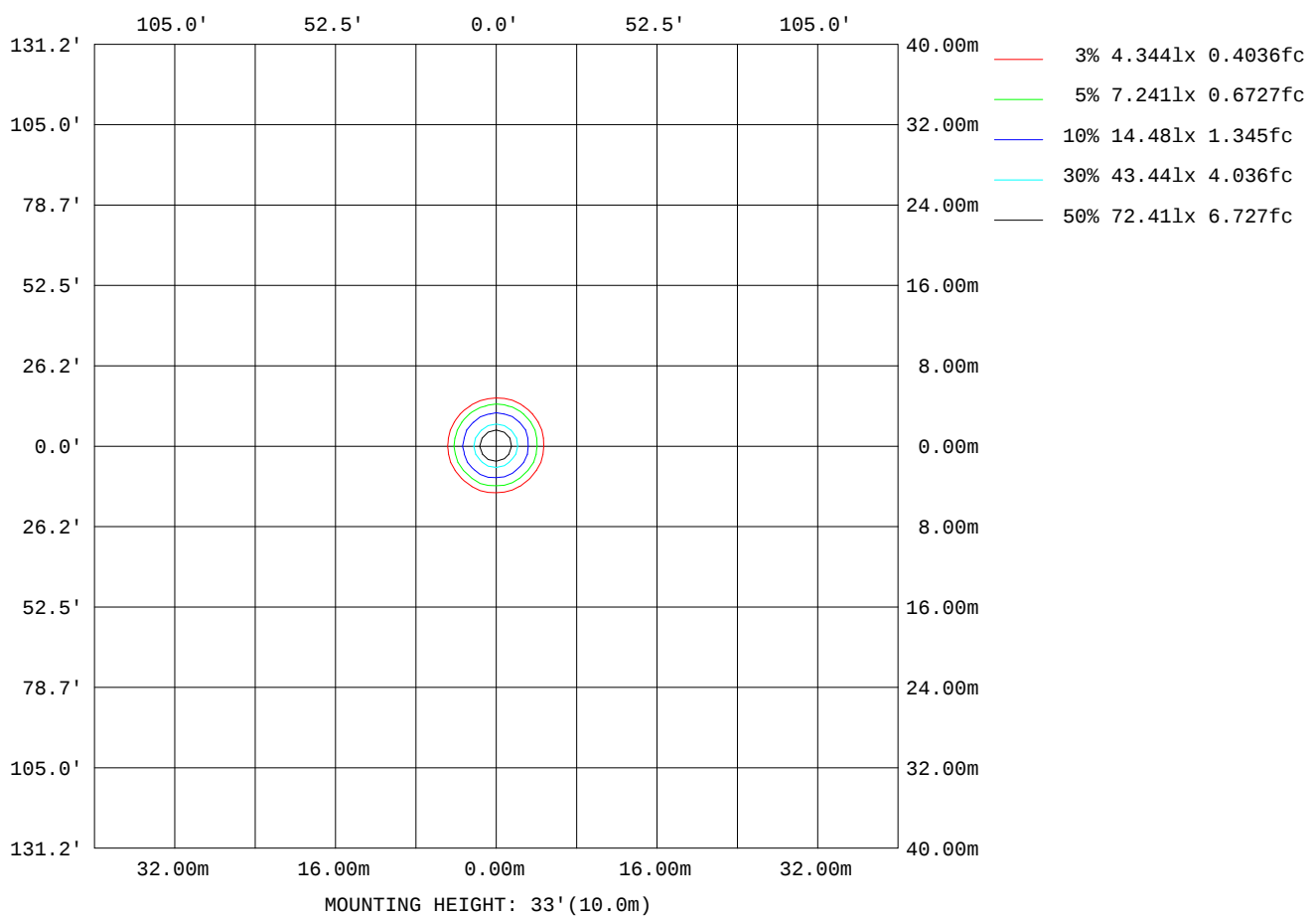
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4KBK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25DEG
 Operators:
 Test Date: 2023-11-07

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:220.37V I:0.1315A P:28.321W PF:0.9770 Freq:50.01Hz Lamp Flux:2117.23x1 lm		
NAME: DL694005-4KBK	TYPE:	WEIGHT:
SPEC.: black RA90	DIM.:	SERIAL No.:
MFR.:	SUR.: 26*26mm	Shielding Angle:

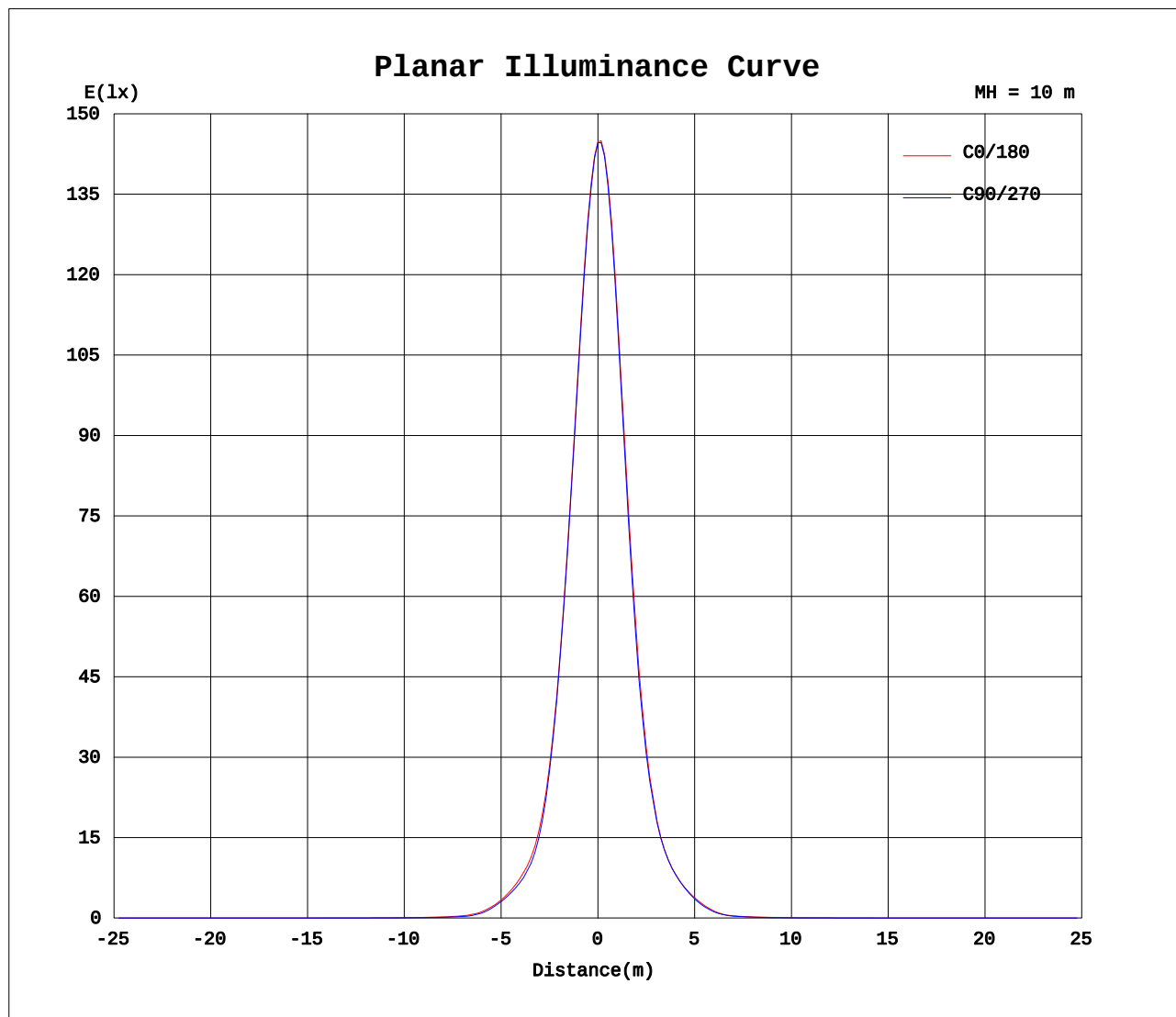
AvgL	cd/m2
L_0~180(65)av	2348
L_0~180(75)av	2145
L_0~180(85)av	3355
L_90~270(65)av	867
L_90~270(75)av	154
L_90~270(85)av	179
L_45(65)av	1387
L_45(75)av	346
L_45(85)av	468

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25DEG
 Operators:
 Test Date:2023-11-07

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: 2023-11-07

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:

```