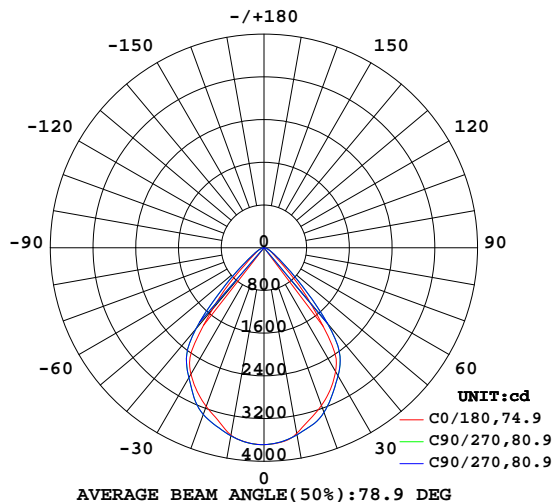


LUMINAIRE PHOTOMETRIC TEST REPORT

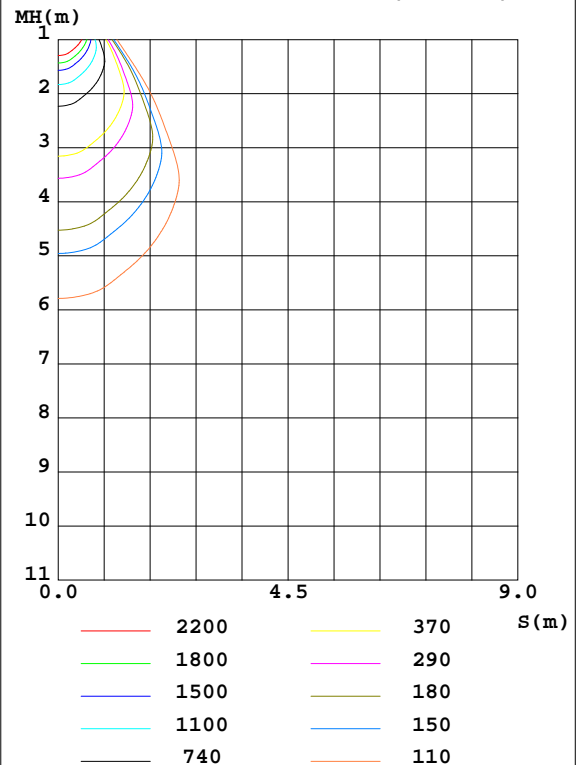
Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.83 lm/W			
MODEL	LED542 W34 (45W/4K)	Imax(cd)	3688	S/MH(C0/180)	1.10
NOMINAL POWER(W)	45	LOR(%)	100.0	S/MH(C90/270)	1.15
RATED VOLTAGE(V)		TOTAL FLUX(lm)	5313.9	η UP,DN(C0-180)	0.0,49.0
NOMINAL FLUX(lm)	5313.92	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)		η down(%)	100.0	CIBSE SHR MAX	1.15

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	3531	3557	3564	3577					0- 10	346.1	346.1	6.51,6.51
20	3145	3283	3163	3323					10- 20	957.1	1303	24.5,24.5
30	2681	2773	2734	2814					20- 30	1382	2685	50.5,50.5
40	1370	1847	1504	1988					30- 40	1447	4133	77.8,77.8
50	346.3	511.6	387.5	580.2					40- 50	741.2	4874	91.7,91.7
60	152.1	178.9	158.7	194.6					50- 60	246.2	5120	96.4,96.4
70	79.04	77.23	83.18	83.99					60- 70	118.8	5239	98.6,98.6
80	30.70	31.69	34.70	33.68					70- 80	58.24	5297	99.7,99.7
90	0.6401	1.236	1.402	1.036					80- 90	16.86	5314	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		

Conical surface Flux(90deg): 4609.2 lm

%lum = 86.7%

%lamp = 86.7%

Conical surface Flux(120deg): 5120 lm

%lum = 96.4%

%lamp = 96.4%

0 - 45 DEG Zonal Flux:4609.2 %lum: 86.7%

0 - 60 DEG Zonal Flux:5120 %lum: 96.4%

All measured values may vary less than 35 %

from the average measured value in the 0 to 130 deg. zone: 7.4%

All measured values in the 0 to 130 deg. zone

may vary less than 50% from the average value of itself: 11.3%

C Range: 0 - 360DEG

C Interval: 90.0DEG

Test Speed: HIGH

Temperature:25.3DEG

Operators:

Test Date:2021-12-09

γ Range: 0 - 90DEG

γ Interval: 1.0DEG

Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446

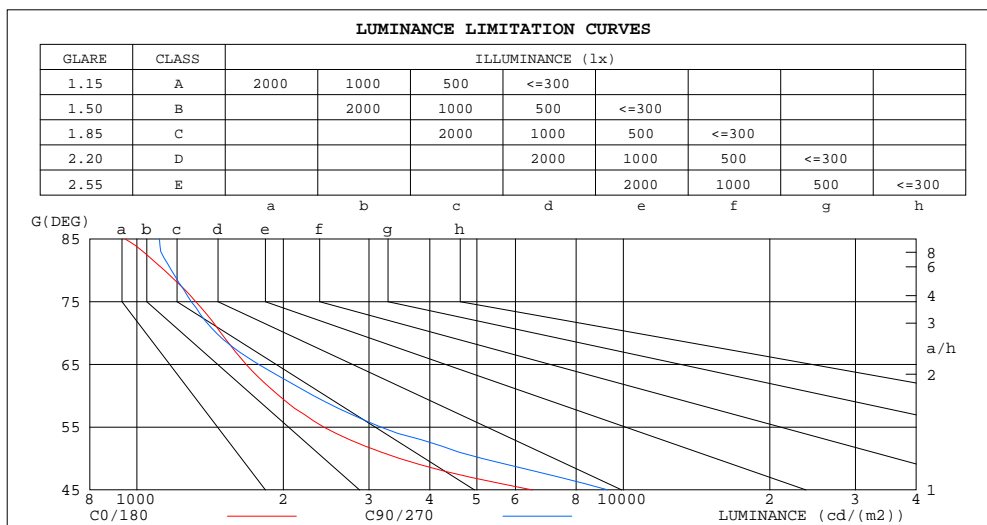
Humidity:65.0%

Test Distance:8.690m [K=1.0000]

Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	947	1113
80	1140	1178
75	1322	1294
70	1490	1458
65	1677	1780
60	1961	2310
55	2425	3178
50	3474	5138
45	6496	9301

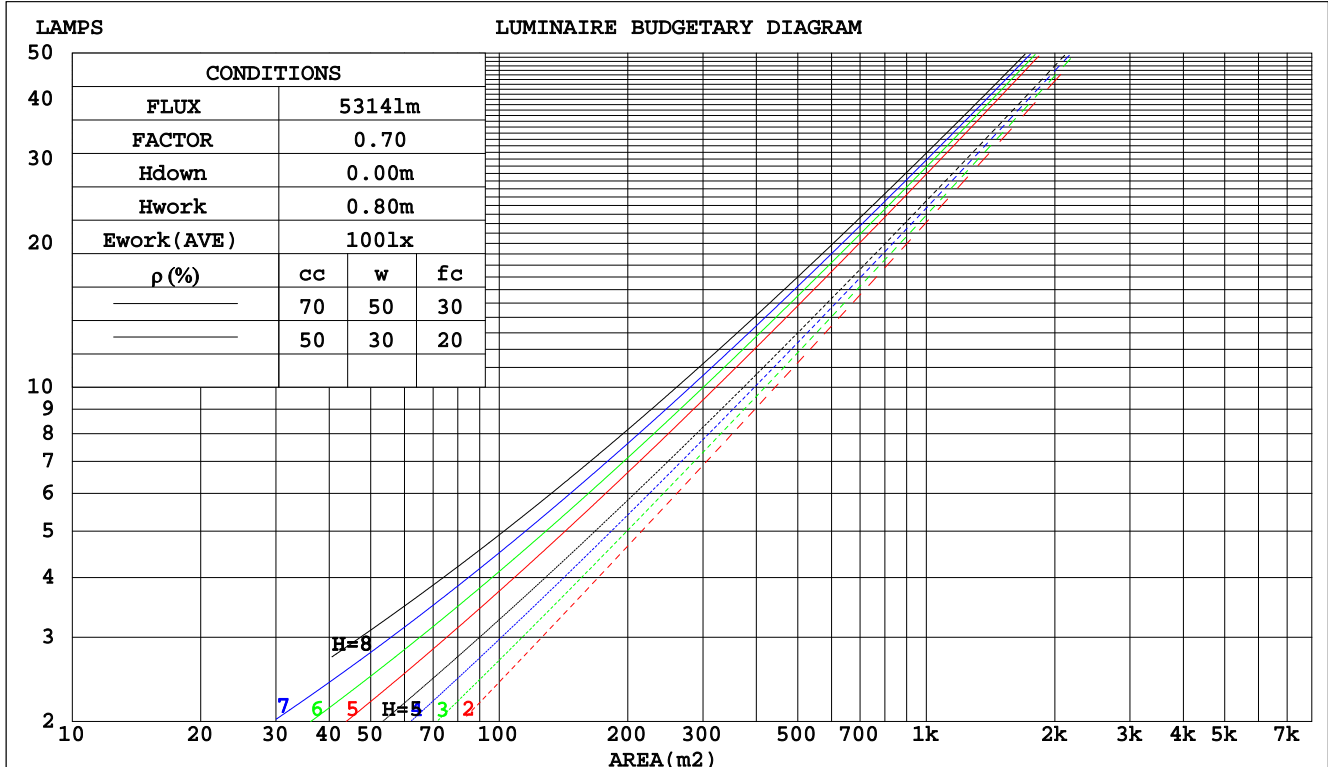
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2021-12-09

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 8.690m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
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	1.09	1.06	1.03	1.07	1.04	1.02	1.03	1.01	.99	.99	.97	.96	.95	.94	.93	.91
2.0	.00	.95	.91	.98	.93	.90	.94	.91	.88	.91	.88	.86	.89	.86	.84	.82
3.0	.91	.85	.80	.90	.84	.80	.87	.82	.78	.84	.80	.77	.82	.79	.76	.74
4.0	.84	.77	.72	.82	.76	.71	.80	.75	.71	.78	.73	.70	.76	.72	.69	.67
5.0	.77	.70	.65	.76	.69	.65	.74	.68	.64	.72	.67	.63	.71	.66	.63	.61
6.0	.71	.64	.59	.70	.63	.59	.68	.63	.58	.67	.62	.58	.66	.61	.57	.56
7.0	.66	.59	.54	.65	.58	.54	.64	.58	.53	.62	.57	.53	.61	.56	.53	.51
8.0	.61	.54	.49	.60	.54	.49	.59	.53	.49	.58	.53	.49	.57	.52	.48	.47
9.0	.57	.50	.45	.56	.50	.45	.55	.49	.45	.54	.49	.45	.53	.48	.45	.43
10.0	.53	.46	.42	.53	.46	.42	.52	.46	.42	.51	.45	.42	.50	.45	.41	.40



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.212	.121	.038	.205	.117	.037	.193	.110	.035	.181	.104	.033	.170	.099	.032		
2.0	.205	.112	.034	.199	.110	.034	.188	.105	.032	.178	.100	.031	.169	.095	.030		
3.0	.195	.104	.031	.190	.102	.031	.181	.098	.030	.172	.094	.029	.164	.091	.028		
4.0	.185	.096	.028	.181	.095	.028	.173	.092	.027	.165	.089	.027	.158	.086	.026		
5.0	.176	.090	.026	.172	.088	.026	.165	.086	.025	.158	.083	.025	.152	.081	.024		
6.0	.167	.084	.024	.164	.083	.024	.157	.081	.023	.151	.079	.023	.145	.077	.023		
7.0	.159	.078	.022	.156	.078	.022	.150	.076	.022	.145	.074	.022	.140	.072	.021		
8.0	.151	.074	.021	.148	.073	.021	.143	.072	.020	.138	.070	.020	.134	.069	.020		
9.0	.144	.070	.019	.142	.069	.019	.137	.068	.019	.133	.066	.019	.128	.065	.019		
10.0	.137	.066	.018	.135	.065	.018	.131	.064	.018	.127	.063	.018	.123	.062	.018		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	.174	.157	.142	.148	.135	.122	.102	.093	.085	.058	.054	.049	.019	.017	.016	
2.0	.161	.132	.109	.138	.114	.094	.094	.079	.065	.054	.046	.038	.017	.015	.013	
3.0	.150	.114	.085	.129	.098	.074	.088	.068	.052	.051	.040	.030	.016	.013	.010	
4.0	.141	.100	.068	.121	.086	.059	.083	.060	.041	.048	.035	.025	.015	.011	.008	
5.0	.133	.088	.055	.115	.076	.048	.079	.053	.034	.046	.031	.020	.015	.010	.007	
6.0	.126	.080	.046	.109	.069	.040	.075	.048	.028	.044	.028	.017	.014	.009	.006	
7.0	.120	.072	.039	.103	.063	.034	.071	.044	.024	.042	.026	.014	.013	.008	.005	
8.0	.115	.066	.033	.099	.058	.029	.068	.040	.020	.040	.024	.012	.013	.008	.004	
9.0	.110	.061	.029	.094	.053	.025	.065	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.105	.057	.025	.090	.050	.022	.063	.035	.016	.037	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm										
NAME: LED542 W34 (45W 4000K)					TYPE: 45W			WEIGHT:		
SPEC.: 4000K					DIM.:			SERIAL No.: #1		
MFR.:					SUR.: 0.155			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	16.0	17.1	16.2	17.3	17.5	16.8	17.9	17.0	18.1	18.3
3H	16.0	17.1	16.3	17.3	17.5	16.8	17.8	17.0	18.0	18.2
4H	16.0	17.0	16.3	17.3	17.5	16.8	17.8	17.1	18.0	18.2
6H	16.1	17.0	16.4	17.2	17.5	16.8	17.7	17.1	17.9	18.2
8H	16.0	16.9	16.4	17.2	17.5	16.7	17.6	17.1	17.9	18.2
12H	16.0	16.9	16.4	17.2	17.4	16.7	17.6	17.1	17.9	18.1
4H 2H	15.9	16.8	16.1	17.1	17.3	16.6	17.6	16.9	17.8	18.1
3H	16.0	16.9	16.3	17.1	17.4	16.7	17.5	17.0	17.8	18.1
4H	16.1	16.9	16.4	17.2	17.5	16.7	17.5	17.1	17.8	18.1
6H	16.2	16.8	16.5	17.2	17.5	16.8	17.5	17.2	17.8	18.2
8H	16.2	16.8	16.6	17.2	17.5	16.8	17.4	17.2	17.8	18.1
12H	16.2	16.7	16.6	17.1	17.5	16.8	17.4	17.2	17.7	18.1
8H 4H	16.0	16.7	16.4	17.0	17.4	16.7	17.3	17.1	17.7	18.0
6H	16.2	16.7	16.6	17.1	17.5	16.8	17.3	17.2	17.7	18.1
8H	16.2	16.7	16.7	17.1	17.5	16.8	17.3	17.3	17.7	18.1
12H	16.2	16.6	16.7	17.1	17.5	16.8	17.2	17.3	17.7	18.1
12H 4H	16.0	16.6	16.4	17.0	17.4	16.6	17.2	17.1	17.6	18.0
6H	16.1	16.6	16.6	17.0	17.5	16.7	17.2	17.2	17.6	18.1
8H	16.2	16.6	16.7	17.0	17.5	16.8	17.2	17.3	17.6	18.1
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.8 / - 3.4					+ 2.0 / - 3.8				
1.5H	+ 3.1 / - 3.0					+ 3.4 / - 3.6				
2.0H	+ 3.2 / - 1.8					+ 4.4 / - 2.5				

CIE Pub.117, 5314 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 5.8$)
Area: 0.155 m²

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:

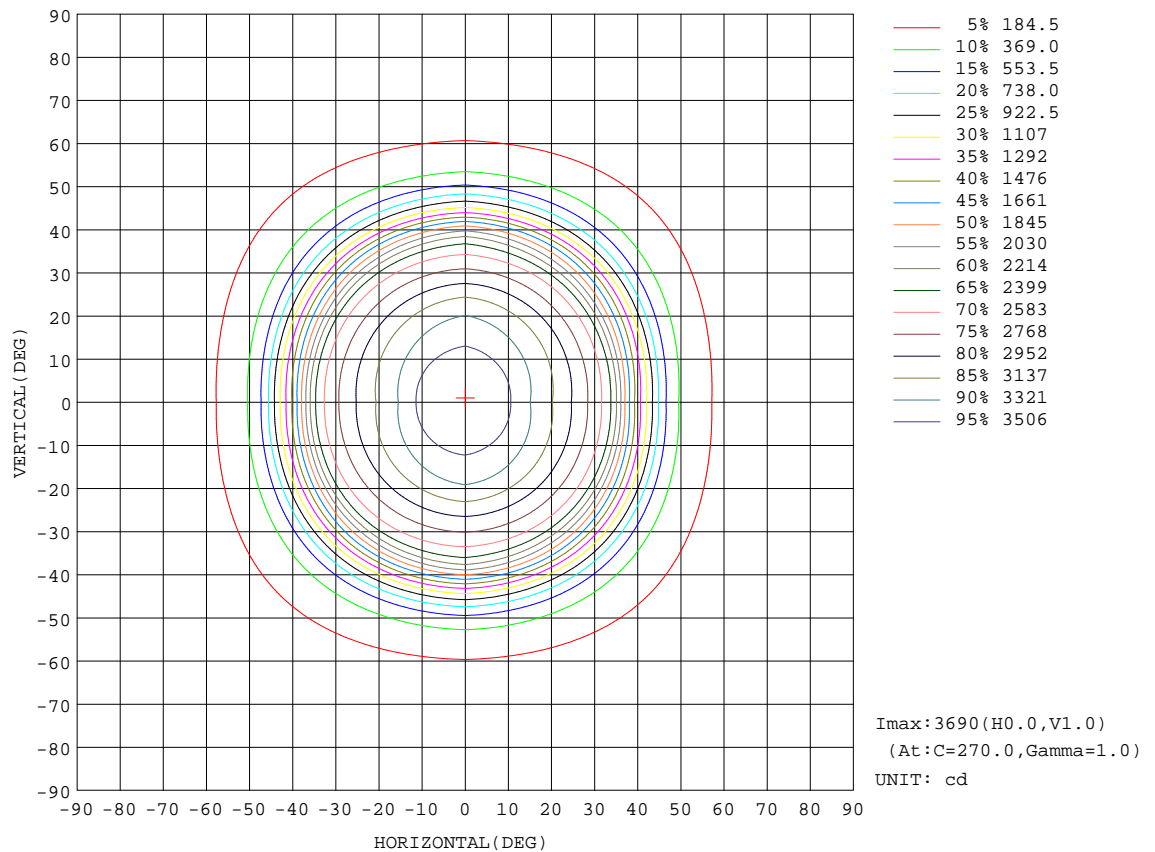
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	78	69	65	77	69	65	76	69	64	60
0.80	86	79	74	86	78	74	84	78	73	69
1.00	93	85	81	92	85	80	90	85	80	75
1.25	98	91	87	97	91	86	94	89	85	80
1.50	101	95	91	100	94	90	97	93	89	84
2.00	105	100	96	104	99	95	101	97	94	88
2.50	107	103	99	106	101	98	102	99	96	90
3.00	109	105	102	108	104	101	104	101	98	92
4.00	112	108	105	110	107	104	106	103	101	94
5.00	113	110	108	111	108	106	107	105	103	95
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:

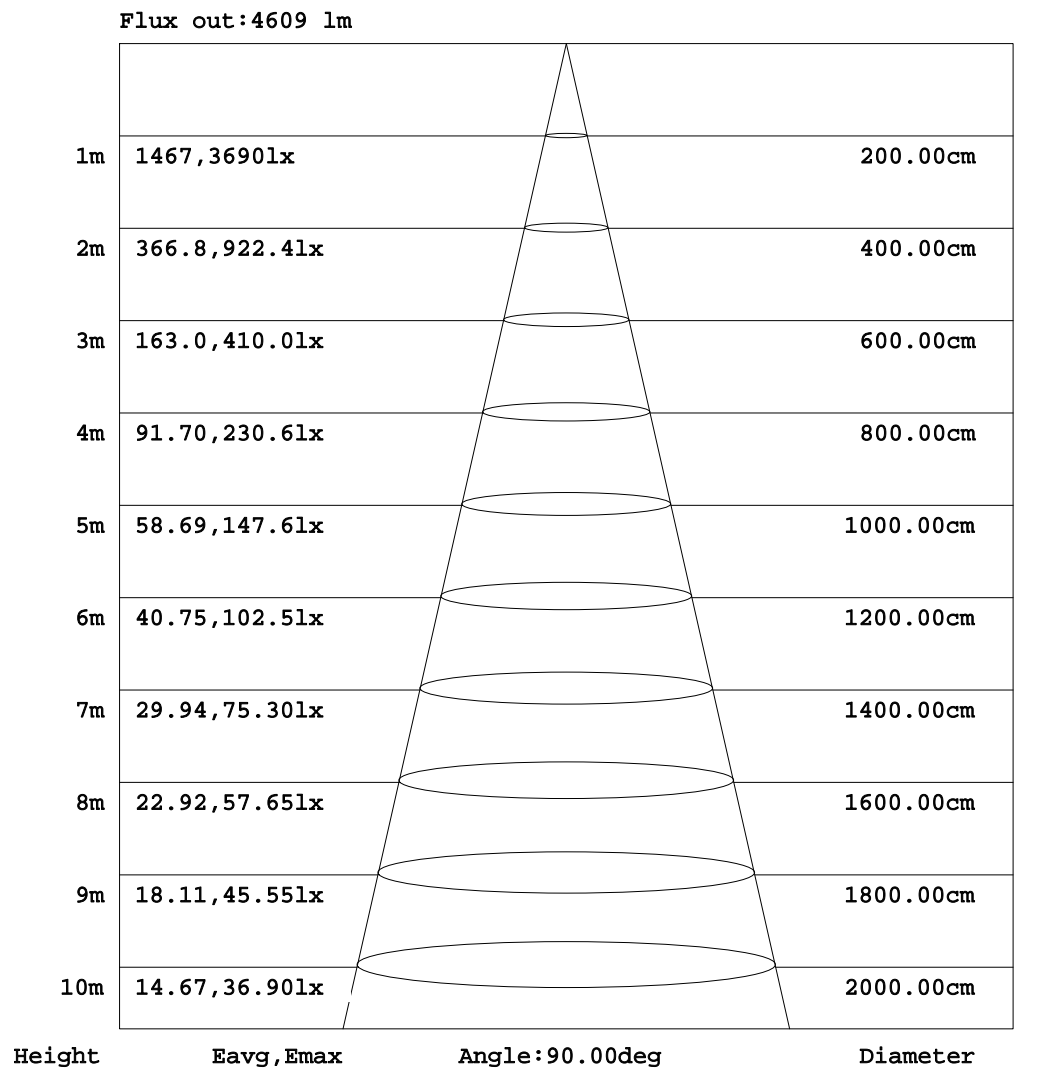


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:



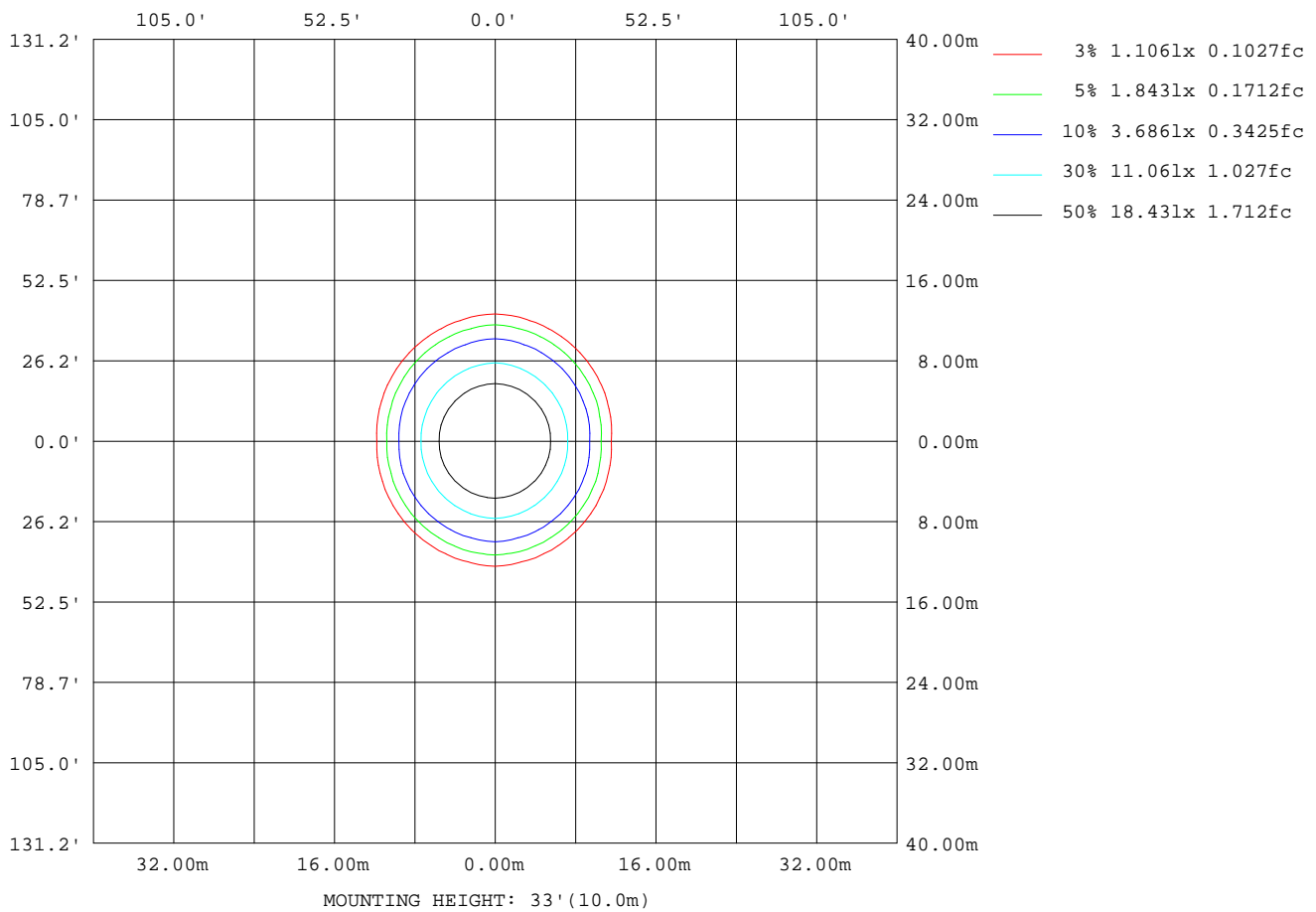
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.16V I:0.2059A P:45.485W PF:0.9600 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:5313.92x1 lm		
NAME: LED542 W34 (45W 4000K)	TYPE: 45W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.: #1
MFR.:	SUR.: 0.155	Shielding Angle:

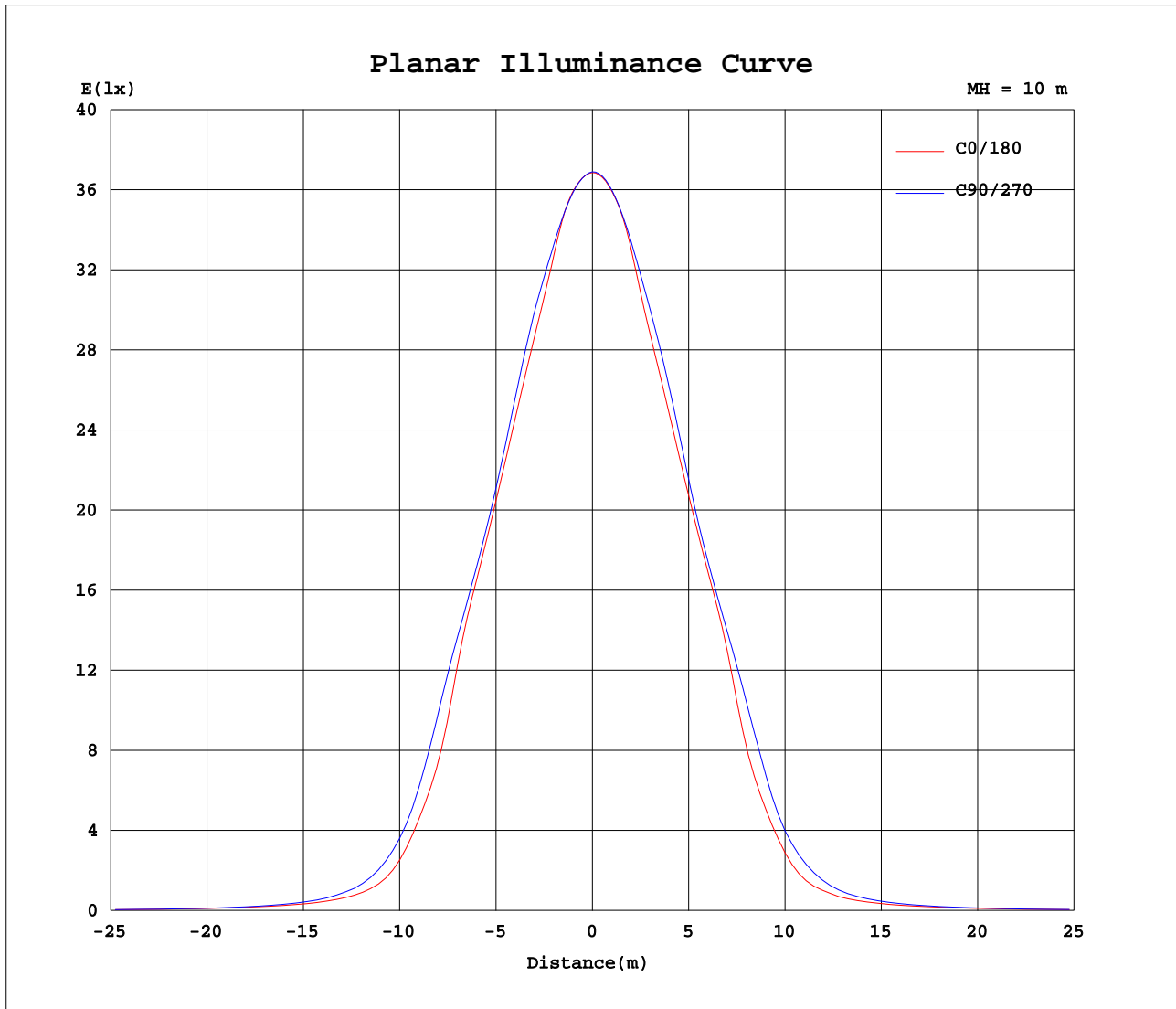
AvgL	cd/m2
L_0~180(65)av	1716
L_0~180(75)av	1376
L_0~180(85)av	1071
L_90~270(65)av	1865
L_90~270(75)av	1341
L_90~270(85)av	1136
L_45(65)av	1812
L_45(75)av	1358
L_45(85)av	1119

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2021-12-09

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2021-12-09

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 8.690m [K=1.0000]
 Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:8.690m [K=1.0000]
Remarks:

```