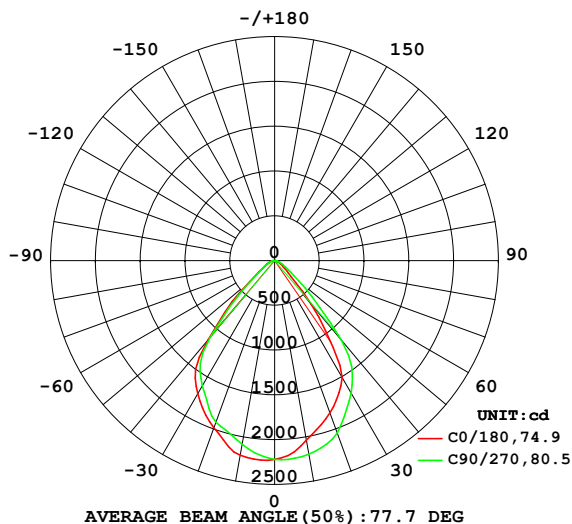


## LUMINAIRE PHOTOMETRIC TEST REPORT

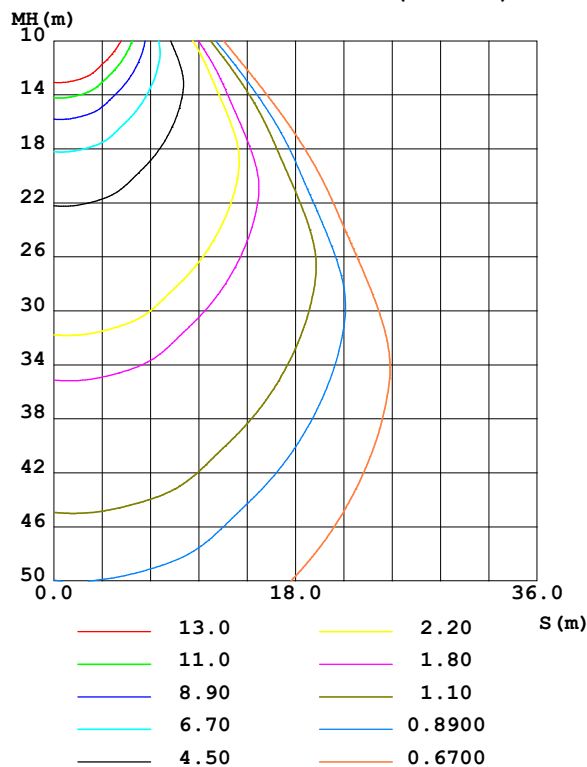
Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 123.17 lm/W			
MODEL	LED541 W34	I <sub>max</sub> (cd)	2239	S/MH(C0/180)	1.16
NOMINAL POWER(W)	29	LOR(%)	100.0	S/MH(C90/270)	1.15
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	3282.3	η UP,DN(C0-180)	0.0,50.4
NOMINAL FLUX(lm)	3282.34	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	230	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: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	2207	2169	2083	2013	2037	2149	2195	2189	0- 10	207.7	207.7	6.33,6.33
20	1986	2038	1919	1702	1807	1913	2048	1945	10- 20	573.3	781.0	23.8,23.8
30	1719	1678	1615	1493	1509	1501	1708	1619	20- 30	813.7	1595	48.6,48.6
40	1158	1070	1118	1132	637.7	765.3	1163	1330	30- 40	846.0	2441	74.4,74.4
50	361.6	347.8	329.4	347.4	179.8	189.4	351.2	613.9	40- 50	506.6	2947	89.8,89.8
60	126.0	106.8	124.0	152.8	85.80	88.13	131.2	225.3	50- 60	184.2	3131	95.4,95.4
70	68.32	65.68	60.54	57.47	43.83	48.14	60.76	96.98	60- 70	91.51	3223	98.2,98.2
80	33.32	31.21	26.57	20.02	14.23	17.90	26.69	34.41	70- 80	44.77	3268	99.6,99.6
90	7.239	7.049	2.551	1.369	0.7224	1.100	1.191	6.596	80- 90	14.60	3282	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): 2800 lm

%lum = 85.3%

%lamp = 85.3%

Conical surface Flux(130deg): 3193.3 lm

%lum = 97.3%

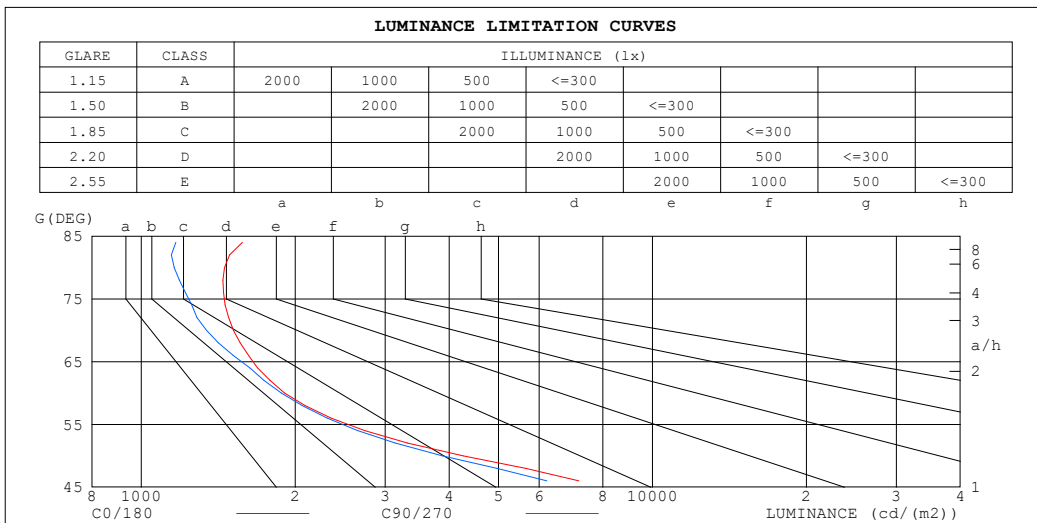
%lamp = 97.3%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:DAMIN  
 Test Date:2022-11-22

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.0DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
 Humidity:65.0%  
 Test Distance:9.640m [K=1.0000]  
 Remarks:

### LUMINANCE LIMITATION CURVES

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1890	1401
80	1454	1159
75	1554	1337
70	1513	1341
65	1749	1692
60	1909	1879
55	2802	2716
50	4261	3883
45	8639	7877

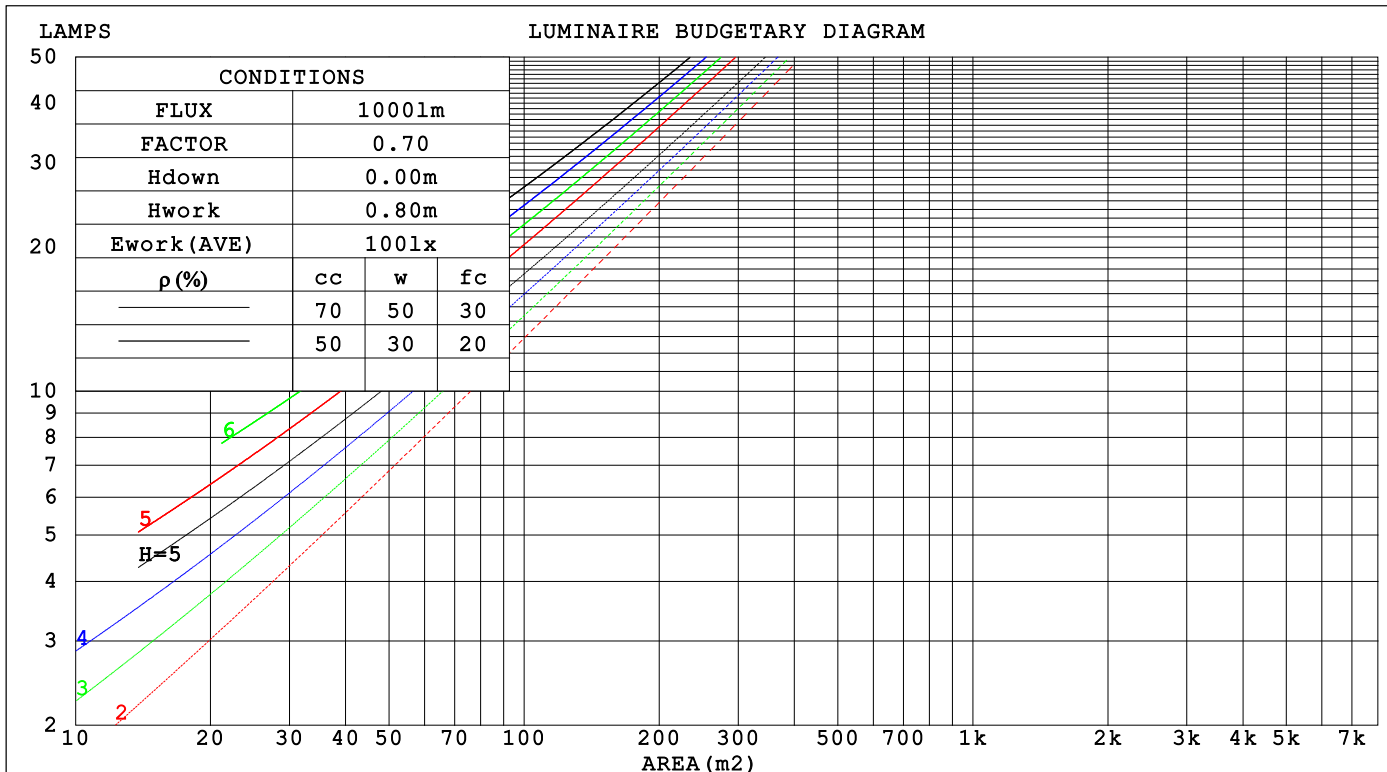
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: DAMIN  
Test Date: 2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 9.640m [K=1.0000]  
Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
p <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p <sub>fc</sub>	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	1.06	1.04	1.01	1.02	1.00	.98	.99	.97	.95	.95	.94	.92	.90
2.0	.99	.94	.90	.97	.93	.89	.94	.90	.87	.91	.88	.85	.88	.85	.83	.81
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.77	.83	.79	.76	.81	.78	.75	.73
4.0	.83	.76	.71	.81	.75	.70	.79	.74	.69	.77	.72	.68	.75	.71	.68	.66
5.0	.76	.69	.64	.75	.68	.63	.73	.67	.63	.71	.66	.62	.69	.65	.61	.60
6.0	.70	.63	.57	.69	.62	.57	.67	.61	.57	.66	.60	.56	.64	.60	.56	.54
7.0	.65	.57	.52	.64	.57	.52	.62	.56	.52	.61	.56	.52	.60	.55	.51	.50
8.0	.60	.53	.48	.59	.52	.48	.58	.52	.48	.57	.51	.47	.56	.51	.47	.45
9.0	.56	.49	.44	.55	.49	.44	.54	.48	.44	.53	.48	.44	.52	.47	.43	.42
10.0	.52	.45	.41	.51	.45	.41	.51	.45	.40	.50	.44	.40	.49	.44	.40	.39



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

### WEC AND CCEC

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	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	.219	.124	.039	.212	.121	.038	.199	.114	.036	.187	.108	.035	.177	.102	.033		
2.0	.211	.115	.035	.205	.113	.035	.194	.108	.033	.184	.103	.032	.174	.099	.031		
3.0	.200	.107	.032	.195	.105	.031	.186	.101	.031	.177	.097	.030	.169	.094	.029		
4.0	.190	.099	.029	.186	.097	.029	.177	.094	.028	.169	.091	.027	.162	.088	.027		
5.0	.180	.092	.027	.176	.090	.026	.169	.088	.026	.162	.085	.025	.156	.083	.025		
6.0	.171	.086	.024	.167	.084	.024	.161	.082	.024	.155	.080	.024	.149	.078	.023		
7.0	.162	.080	.023	.159	.079	.023	.153	.077	.022	.148	.076	.022	.142	.074	.022		
8.0	.154	.075	.021	.151	.074	.021	.146	.073	.021	.141	.071	.021	.136	.070	.020		
9.0	.146	.071	.020	.144	.070	.020	.139	.069	.020	.135	.068	.019	.131	.066	.019		
10.0	.139	.067	.019	.137	.066	.018	.133	.065	.018	.129	.064	.018	.125	.063	.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	.149	.135	.122	.102	.093	.084	.059	.054	.049	.019	.017	.016		
2.0	.161	.132	.108	.138	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012		
3.0	.151	.114	.084	.130	.098	.073	.089	.068	.051	.051	.040	.030	.017	.013	.010		
4.0	.142	.100	.067	.122	.086	.058	.084	.060	.041	.049	.035	.024	.016	.011	.008		
5.0	.135	.089	.055	.116	.077	.048	.080	.054	.034	.046	.031	.020	.015	.010	.007		
6.0	.128	.080	.045	.110	.069	.039	.076	.048	.028	.044	.028	.017	.014	.009	.005		
7.0	.121	.073	.038	.104	.063	.033	.072	.044	.024	.042	.026	.014	.014	.009	.005		
8.0	.116	.067	.033	.100	.058	.029	.069	.041	.020	.040	.024	.012	.013	.008	.004		
9.0	.111	.062	.028	.095	.053	.025	.066	.038	.018	.038	.022	.011	.012	.007	.003		
10.0	.106	.057	.025	.091	.050	.022	.063	.035	.016	.037	.021	.009	.012	.007	.003		

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

### UGR(Unified Glare Rating) Table

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm											
NAME: LED541 W34V2						TYPE: 29W			WEIGHT:		
SPEC.: 4000K						DIM.:			SERIAL No.:		
MFR.:						SUR.: 1.2*0.11			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		16.2	17.3	16.4	17.5	17.7	16.2	17.4	16.4	17.5	17.7
	3H	16.3	17.4	16.6	17.6	17.8	16.3	17.3	16.5	17.5	17.8
	4H	16.4	17.4	16.7	17.6	17.9	16.3	17.3	16.6	17.6	17.8
	6H	16.5	17.4	16.8	17.7	17.9	16.3	17.3	16.6	17.5	17.8
	8H	16.5	17.4	16.8	17.7	17.9	16.3	17.3	16.7	17.5	17.8
	12H	16.5	17.4	16.9	17.7	18.0	16.3	17.2	16.7	17.5	17.8
4H	2H	16.0	17.0	16.3	17.3	17.5	16.0	17.1	16.3	17.3	17.5
	3H	16.3	17.2	16.6	17.4	17.7	16.2	17.1	16.6	17.4	17.7
	4H	16.5	17.3	16.8	17.6	17.9	16.4	17.2	16.7	17.5	17.8
	6H	16.6	17.3	17.0	17.7	18.0	16.5	17.2	16.9	17.5	17.9
	8H	16.7	17.4	17.1	17.7	18.1	16.5	17.2	16.9	17.5	17.9
	12H	16.8	17.4	17.2	17.8	18.2	16.6	17.2	17.0	17.5	17.9
8H	4H	16.5	17.1	16.9	17.5	17.8	16.4	17.0	16.8	17.4	17.7
	6H	16.7	17.3	17.2	17.7	18.1	16.6	17.1	17.0	17.5	17.9
	8H	16.9	17.4	17.3	17.8	18.2	16.7	17.1	17.1	17.6	18.0
	12H	17.1	17.5	17.5	17.9	18.4	16.8	17.2	17.2	17.6	18.1
12H	4H	16.4	17.0	16.8	17.4	17.8	16.3	16.9	16.8	17.3	17.7
	6H	16.7	17.2	17.2	17.6	18.1	16.6	17.0	17.0	17.5	17.9
	8H	16.9	17.3	17.4	17.8	18.2	16.7	17.1	17.2	17.6	18.0
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 1.7 / - 2.8					+ 1.8 / - 3.1				
1.5H		+ 2.7 / - 3.1					+ 2.7 / - 3.0				
2.0H		+ 4.0 / - 1.9					+ 3.4 / - 2.0				

CIE Pub.117, 3282 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 4.1)  
Area: 0.132 m2

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:

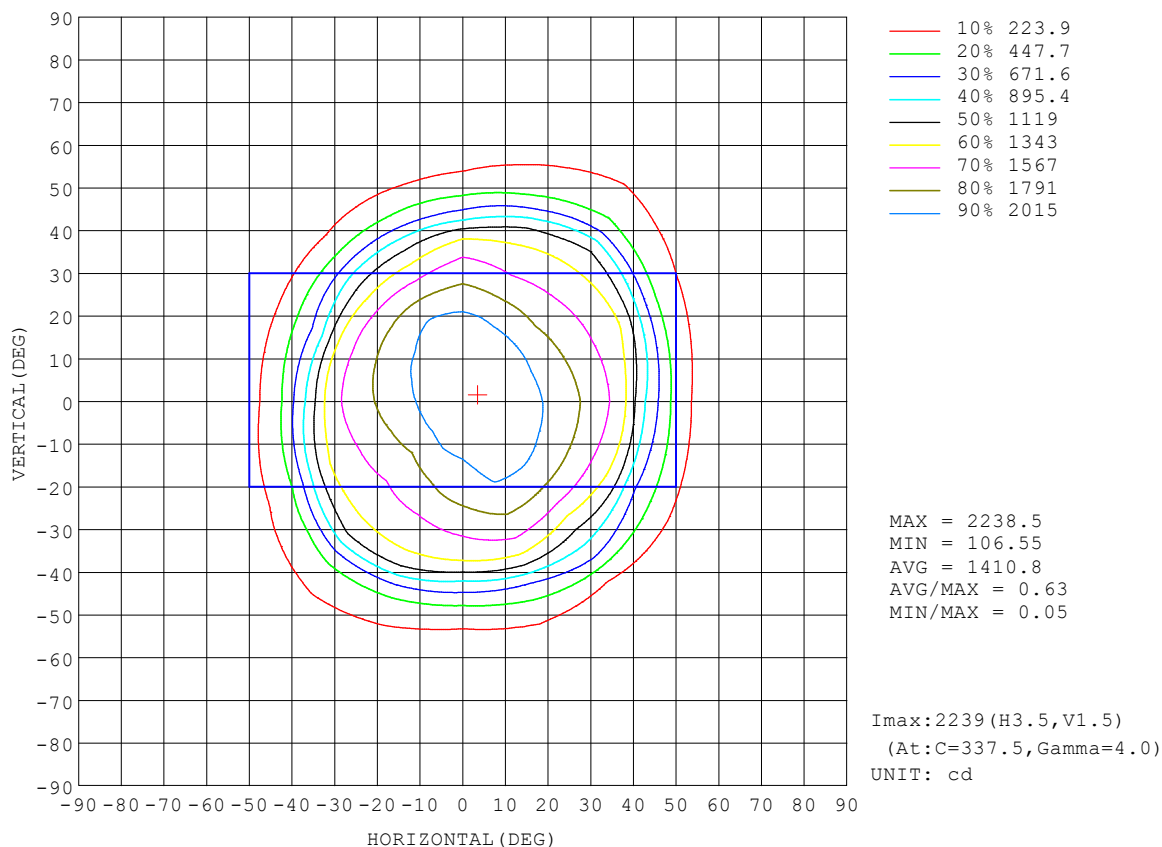
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	75	67	62	75	67	62	74	66	62	57
0.80	84	76	71	84	76	71	82	75	71	66
1.00	91	83	79	90	83	78	88	83	78	73
1.25	96	89	85	95	89	84	93	88	84	78
1.50	100	94	89	99	93	89	96	91	88	82
2.00	104	99	95	103	98	94	100	96	92	86
2.50	107	102	98	105	100	97	102	98	95	88
3.00	109	104	101	107	103	100	103	100	97	90
4.00	111	108	105	109	106	103	105	103	101	93
5.00	113	110	107	111	108	106	106	104	102	94
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: 25.3 °C  
Operators: DAMIN  
Test Date: 2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 9.640m [K=1.0000]  
Remarks:

### ISOCANDELA DIAGRAM

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:

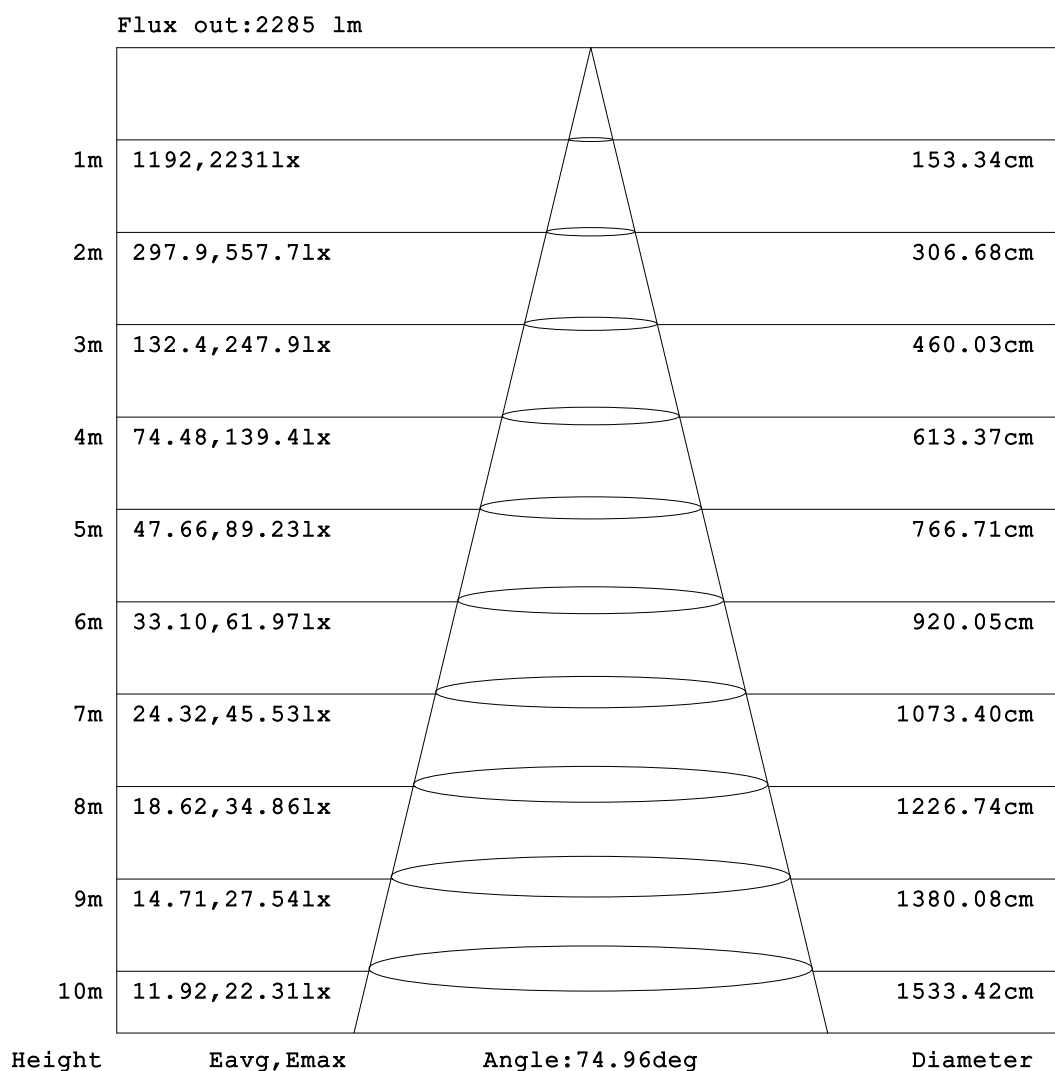


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

**AAI Figure**

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:



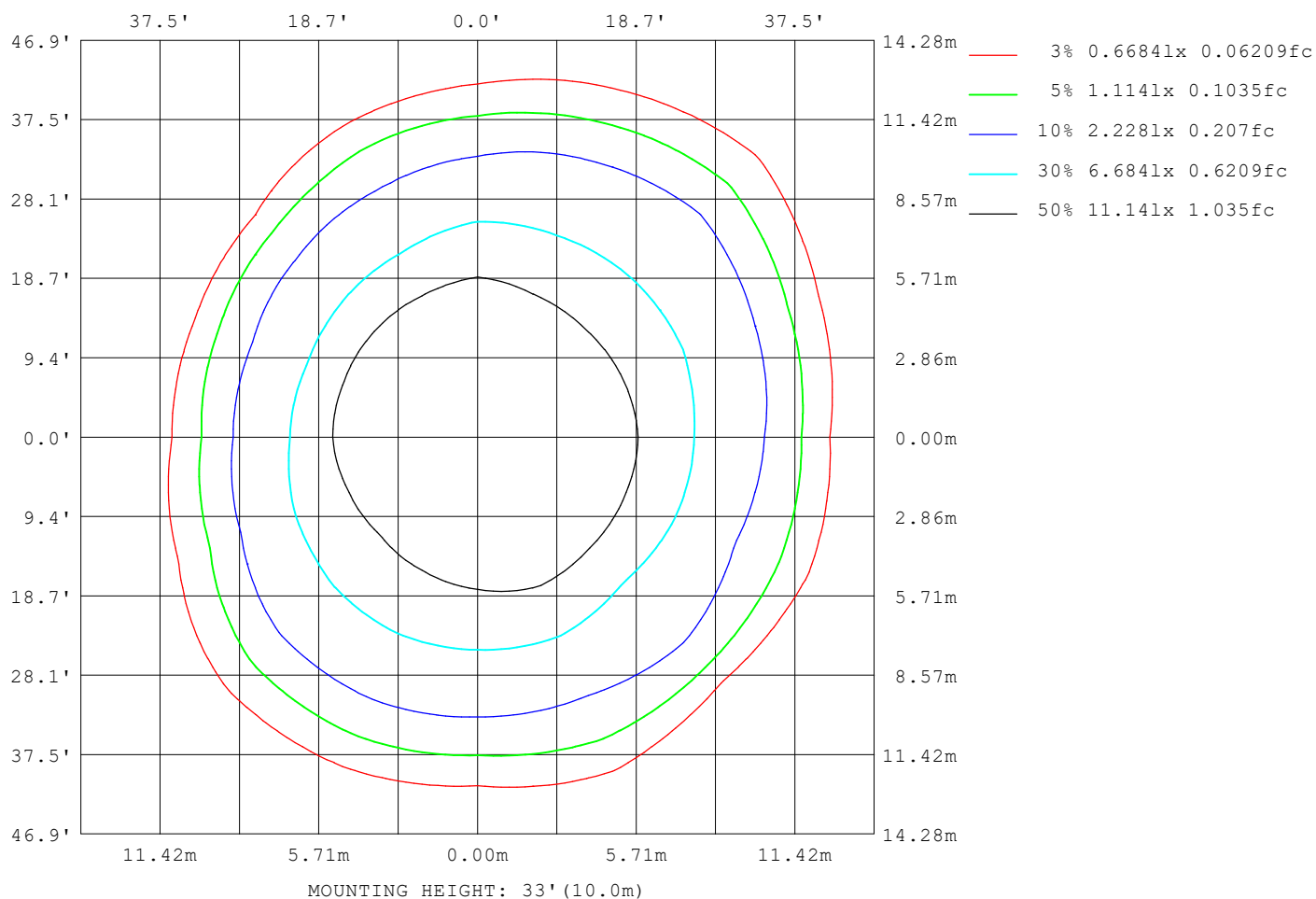
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3℃  
 Operators:DAMIN  
 Test Date:2022-11-22

γ Range: 0 - 90DEG  
 γ Interval: 2.0DEG  
 Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
 Humidity:65.0%  
 Test Distance:9.640m [K=1.0000]  
 Remarks:

### ISOLUX DIAGRAM

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:230.37V I:0.1245A P:26.648W PF:0.9292 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:3282.34x1 lm		
NAME: LED541 W34V2	TYPE: 29W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.:	SUR.: 1.2*0.11	Shielding Angle:

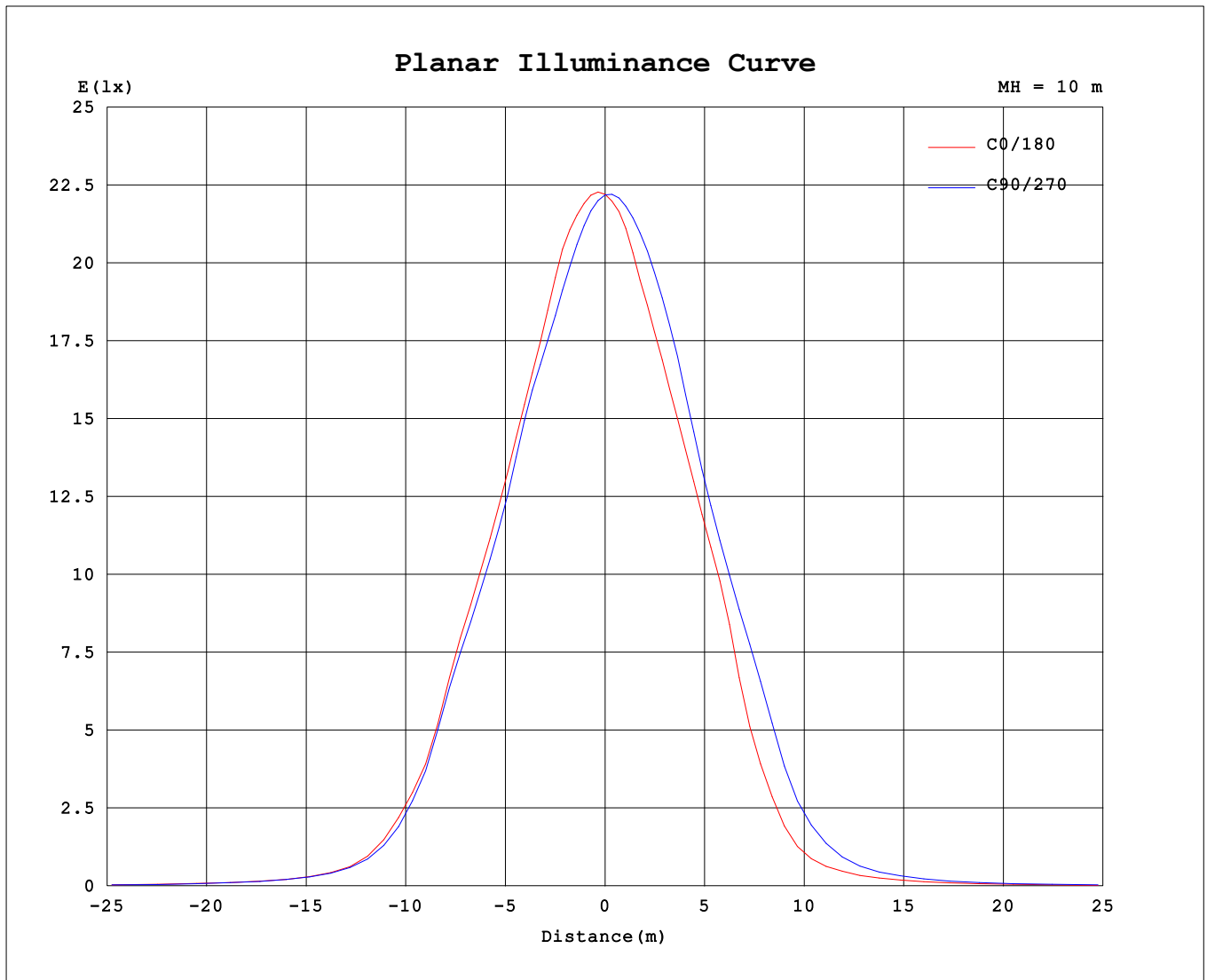
AvgL	cd/m2
L_0~180 (65) av	1381
L_0~180 (75) av	1136
L_0~180 (85) av	975
L_90~270 (65) av	1576
L_90~270 (75) av	1238
L_90~270 (85) av	1191
L_45 (65) av	1830
L_45 (75) av	1247
L_45 (85) av	1098

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3℃  
Operators:DAMIN  
Test Date:2022-11-22

γ Range: 0 - 90DEG  
γ Interval: 2.0DEG  
Test System:EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:9.640m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3 °C  
Operators: DAMIN  
Test Date: 2022-11-22

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.0DEG  
Test System: EVERFINE GO-2000H\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 9.640m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

```