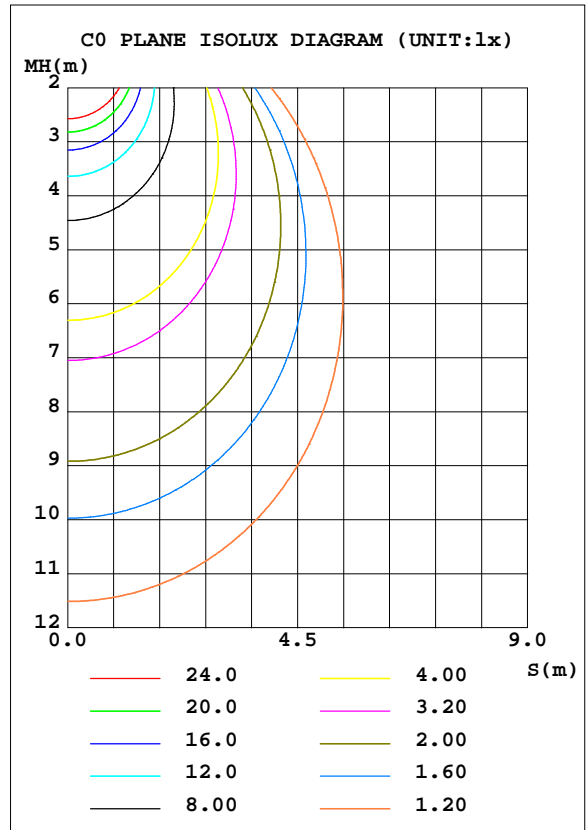
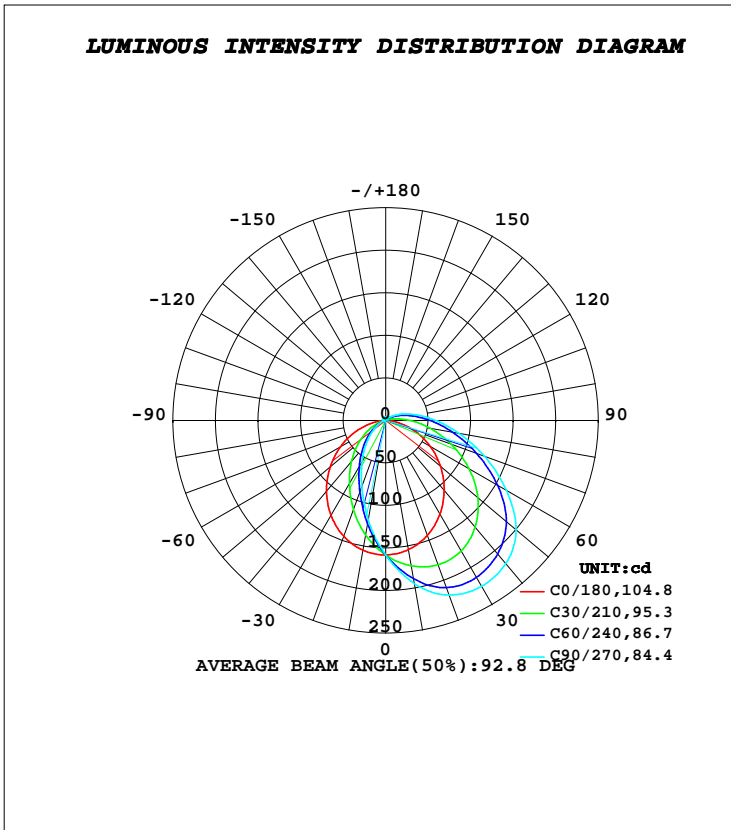




LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		Imax(cd)	225.1	S/MH(C0/180)	1.22
NOMINAL POWER(W)	5.9	LOR(%)	100.0	S/MH(C90/270)	0.63
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	543.42	η UP, DN(C0-180)	1.7, 20.9
NOMINAL FLUX(lm)	543.422	CIE CLASS	DIRECT	η UP, DN(C180-360)	6.2, 71.2
LAMPS INSIDE	1	η up(%)	7.9	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	92.1	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

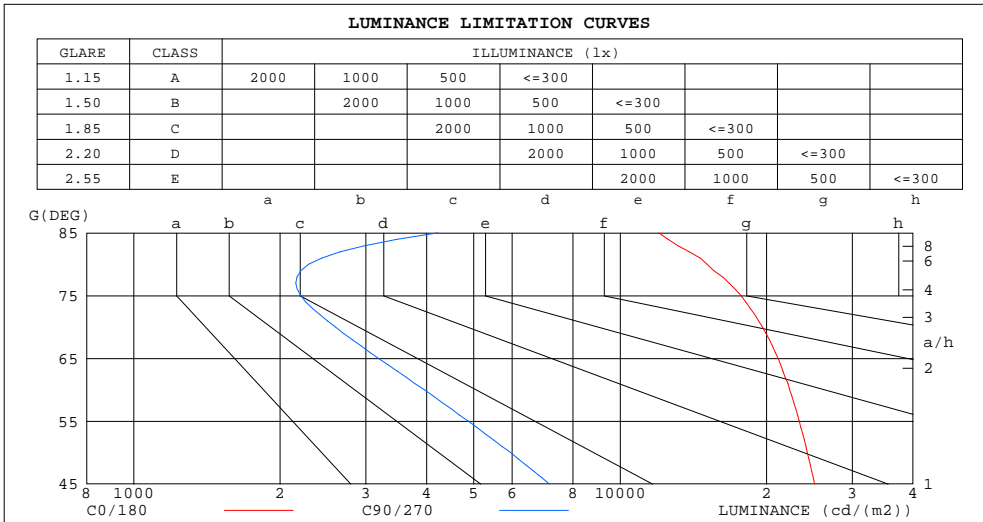
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	154.8	130.2	118.7	129.7	154.2	181.1	194.9	181.8	0- 10	14.98	14.98	2.76,2.76
20	144.8	100.2	82.25	99.60	143.7	194.7	218.4	196.3	10- 20	42.98	57.96	10.7,10.7
30	128.8	73.90	55.71	73.37	127.4	195.1	225.1	197.7	20- 30	65.31	123.3	22.7,22.7
40	108.4	52.04	35.89	51.63	107.1	184.1	219.6	187.1	30- 40	79.47	202.7	37.3,37.3
50	85.27	33.68	21.00	33.35	84.45	163.4	200.0	166.4	40- 50	84.04	286.8	52.8,52.8
60	61.02	18.62	10.86	18.38	60.23	132.3	163.7	135.0	50- 60	78.02	364.8	67.1,67.1
70	36.69	7.854	4.879	7.767	36.28	97.91	123.9	99.94	60- 70	63.04	427.8	78.7,78.7
80	14.32	2.454	2.181	2.513	14.27	66.19	87.17	67.47	70- 80	44.63	472.5	86.9,86.9
90	1.112	1.757	2.247	1.935	1.326	40.43	58.83	41.02	80- 90	27.92	500.4	92.1,92.1
100	1.265	2.181	2.761	2.409	1.423	22.25	37.81	22.41	90-100	16.77	517.2	95.2,95.2
110	1.550	2.598	3.257	2.880	1.671	11.35	22.66	11.40	100-110	9.791	527.0	97,97
120	1.846	2.951	3.658	3.303	1.947	5.649	12.25	5.823	110-120	5.697	532.6	98,98
130	2.169	3.251	3.955	3.660	2.226	2.987	6.222	3.363	120-130	3.525	536.2	98.7,98.7
140	2.502	3.489	4.127	3.936	2.504	2.134	3.262	2.495	130-140	2.480	538.7	99.1,99.1
150	2.808	3.624	4.205	4.103	2.790	2.326	2.304	2.714	140-150	1.916	540.6	99.5,99.5
160	3.111	3.715	4.194	4.187	3.079	2.741	2.776	3.159	150-160	1.508	542.1	99.8,99.8
170	3.378	3.740	4.082	4.174	3.347	3.180	3.293	3.603	160-170	0.9927	543.1	99.9,99.9
180	3.529	3.612	3.820	4.007	3.534	3.611	3.818	4.008	170-180	0.3513	543.4	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	12001	4217
80	15084	2287
75	17712	2206
70	19619	2598
65	21113	3185
60	22320	3956
55	23356	4872
50	24261	5948
45	25099	7161

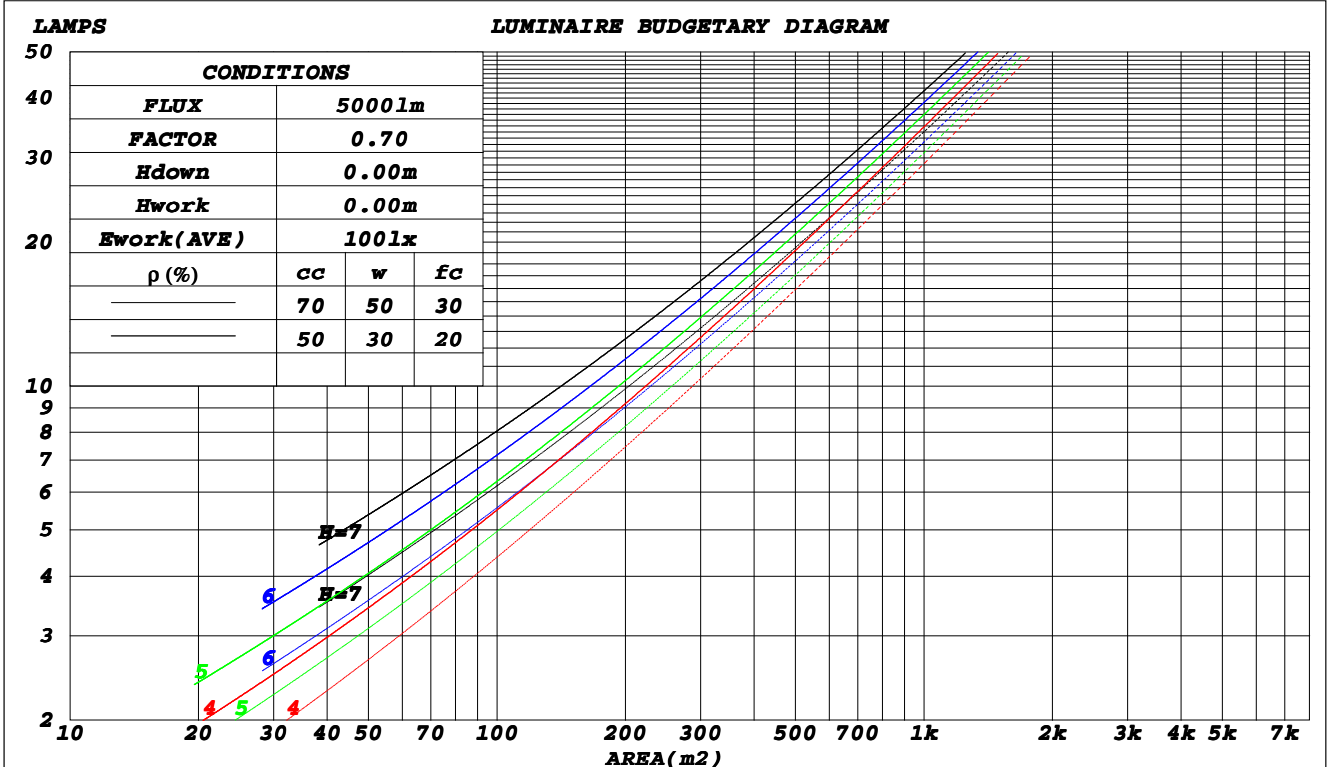
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

ρcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρw	0															
ρfc	0															
RCR	RCR:Room Cavity Ratio															
	Coefficients of Utilization(CU)															
0.0	1.17	1.17	1.17	1.14	1.14	1.14	1.07	1.07	1.07	1.00	1.00	1.00	.95	.95	.95	.92
1.0	.00	.95	.91	.97	.92	.88	.91	.87	.84	.86	.83	.80	.81	.78	.76	.74
2.0	.86	.79	.73	.84	.77	.71	.79	.73	.68	.74	.70	.65	.70	.66	.63	.60
3.0	.75	.67	.60	.73	.65	.59	.69	.62	.57	.65	.59	.55	.61	.57	.53	.50
4.0	.66	.57	.50	.65	.56	.49	.61	.54	.48	.58	.51	.46	.55	.49	.45	.42
5.0	.59	.50	.43	.58	.49	.42	.55	.47	.41	.52	.45	.40	.49	.43	.39	.36
6.0	.53	.44	.37	.52	.43	.37	.49	.42	.36	.47	.40	.35	.44	.39	.34	.32
7.0	.48	.39	.33	.47	.38	.32	.45	.37	.32	.42	.36	.31	.40	.35	.30	.28
8.0	.44	.35	.29	.43	.35	.29	.41	.33	.28	.39	.32	.28	.37	.31	.27	.25
9.0	.40	.32	.26	.39	.31	.26	.37	.30	.25	.36	.29	.25	.34	.29	.24	.22
10.0	.37	.29	.24	.36	.29	.23	.35	.28	.23	.33	.27	.22	.32	.26	.22	.20



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-05-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

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	.351	.200	.063	.341	.195	.062	.323	.186	.059	.307	.177	.057	.292	.169	.055	
2.0	.314	.172	.053	.305	.168	.052	.289	.161	.050	.274	.154	.048	.261	.148	.047	
3.0	.284	.151	.045	.276	.148	.045	.262	.142	.043	.248	.136	.042	.236	.131	.040	
4.0	.258	.134	.039	.251	.132	.039	.238	.126	.038	.226	.122	.037	.215	.117	.036	
5.0	.237	.121	.035	.230	.118	.034	.219	.114	.034	.208	.110	.033	.198	.106	.032	
6.0	.218	.109	.031	.212	.107	.031	.202	.104	.030	.192	.100	.029	.183	.096	.029	
7.0	.202	.100	.028	.197	.098	.028	.187	.095	.027	.179	.092	.027	.170	.088	.026	
8.0	.188	.092	.026	.183	.090	.026	.175	.087	.025	.167	.084	.024	.159	.082	.024	
9.0	.176	.085	.024	.172	.084	.023	.164	.081	.023	.156	.078	.022	.149	.076	.022	
10.0	.165	.079	.022	.161	.078	.022	.154	.075	.021	.147	.073	.021	.140	.071	.020	

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																
1.0	.251	.251	.251	.214	.214	.214	.146	.146	.146	.084	.084	.084	.027	.027	.027	
2.0	.236	.193	.157	.203	.166	.135	.139	.115	.094	.080	.067	.055	.026	.022	.018	
3.0	.229	.176	.134	.196	.152	.116	.135	.105	.081	.078	.062	.048	.025	.020	.016	
4.0	.221	.163	.119	.190	.141	.103	.130	.098	.073	.075	.058	.043	.024	.019	.014	
5.0	.213	.153	.108	.183	.132	.094	.126	.092	.067	.073	.054	.039	.024	.018	.013	
6.0	.206	.145	.101	.177	.125	.088	.122	.088	.062	.071	.052	.037	.023	.017	.012	
7.0	.199	.138	.095	.171	.120	.083	.118	.084	.059	.069	.049	.035	.022	.016	.012	
8.0	.192	.132	.091	.166	.115	.079	.115	.081	.056	.067	.048	.034	.022	.016	.011	
9.0	.186	.127	.088	.160	.111	.076	.111	.078	.054	.065	.046	.032	.021	.015	.011	
10.0	.180	.123	.085	.156	.107	.074	.108	.075	.053	.063	.044	.031	.020	.015	.010	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

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	20.1	21.6	20.5	21.9	22.3	13.3	14.8	13.7	15.1	15.5
3H	21.7	23.1	22.1	23.5	23.9	13.7	15.0	14.1	15.4	15.8
4H	22.4	23.7	22.8	24.1	24.5	13.8	15.1	14.2	15.5	15.9
6H	22.9	24.1	23.3	24.5	24.9	13.8	15.1	14.3	15.5	15.9
8H	23.0	24.2	23.5	24.6	25.1	13.9	15.1	14.4	15.5	16.0
12H	23.1	24.2	23.6	24.7	25.1	14.0	15.2	14.5	15.6	16.1
4H 2H	19.9	21.2	20.3	21.6	22.0	14.1	15.4	14.5	15.8	16.2
3H	21.6	22.7	22.0	23.1	23.6	14.5	15.6	14.9	16.0	16.5
4H	22.3	23.3	22.8	23.8	24.3	14.6	15.7	15.1	16.1	16.6
6H	22.9	23.8	23.4	24.3	24.9	14.7	15.7	15.3	16.2	16.7
8H	23.1	24.0	23.7	24.5	25.0	14.8	15.7	15.4	16.2	16.8
12H	23.3	24.1	23.8	24.6	25.2	15.0	15.8	15.6	16.4	16.9
8H 4H	22.2	23.0	22.7	23.5	24.1	14.8	15.7	15.4	16.2	16.8
6H	22.8	23.5	23.4	24.1	24.7	15.0	15.8	15.6	16.3	16.9
8H	23.0	23.7	23.6	24.3	24.9	15.2	15.9	15.8	16.4	17.0
12H	23.3	23.8	23.9	24.4	25.1	15.5	16.1	16.1	16.7	17.3
12H 4H	22.1	22.9	22.6	23.4	24.0	14.8	15.6	15.4	16.2	16.7
6H	22.7	23.4	23.3	24.0	24.6	15.1	15.7	15.7	16.3	16.9
8H	23.0	23.6	23.6	24.2	24.8	15.3	15.9	15.9	16.4	17.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.3					+ 0.7 / - 1.0				
1.5H	+ 1.1 / - 1.0					+ 0.5 / - 0.7				
2.0H	+ 1.9 / - 2.0					+ 0.9 / - 1.3				

CIE Pub.117, 543.4 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -2.1)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

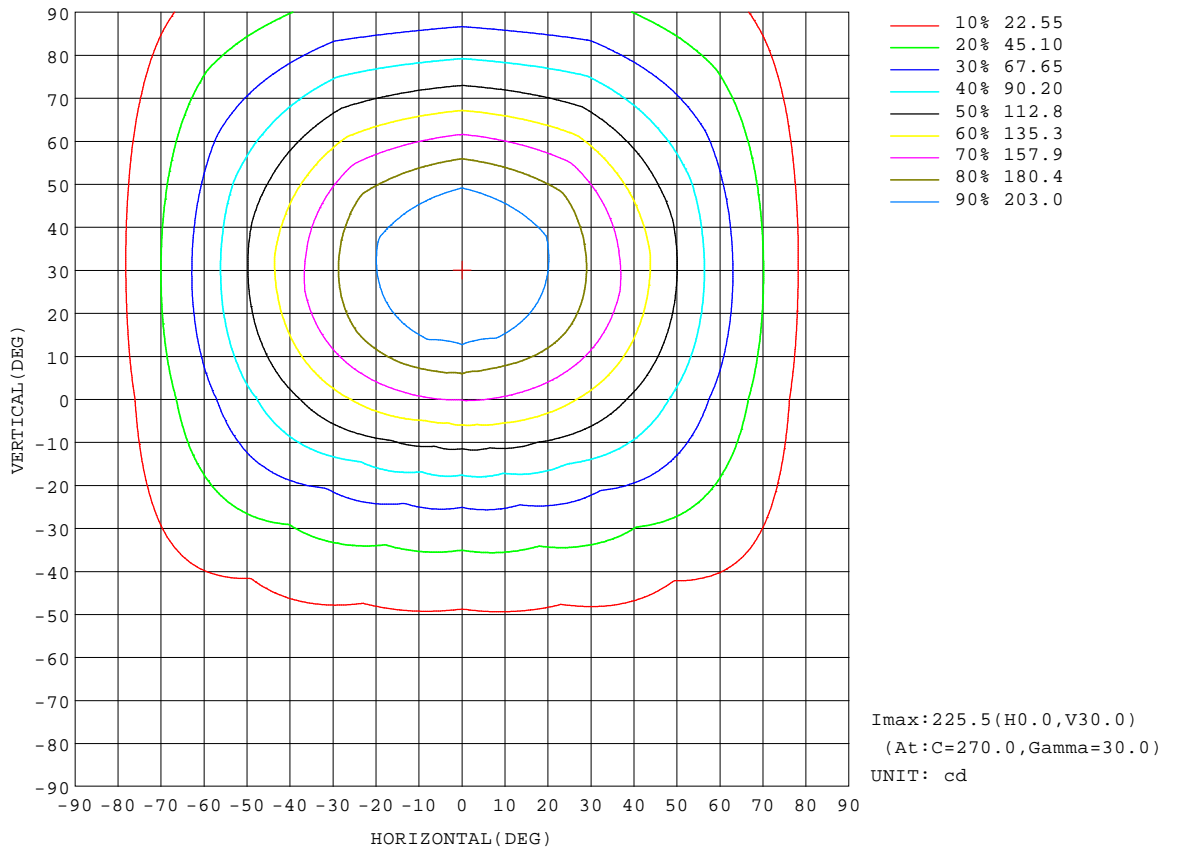
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	53	41	34	52	41	34	51	40	33	27
0.80	63	50	43	61	50	42	59	49	42	34
1.00	71	59	51	69	58	50	66	59	50	42
1.25	78	66	58	76	65	58	72	63	57	48
1.50	83	72	64	81	70	63	77	68	62	53
2.00	90	80	73	87	78	71	83	75	69	60
2.50	94	85	78	91	83	77	86	80	74	64
3.00	97	89	83	95	87	81	89	83	78	68
4.00	102	95	89	99	93	87	93	88	84	73
5.00	104	98	93	101	96	91	95	91	87	76
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		



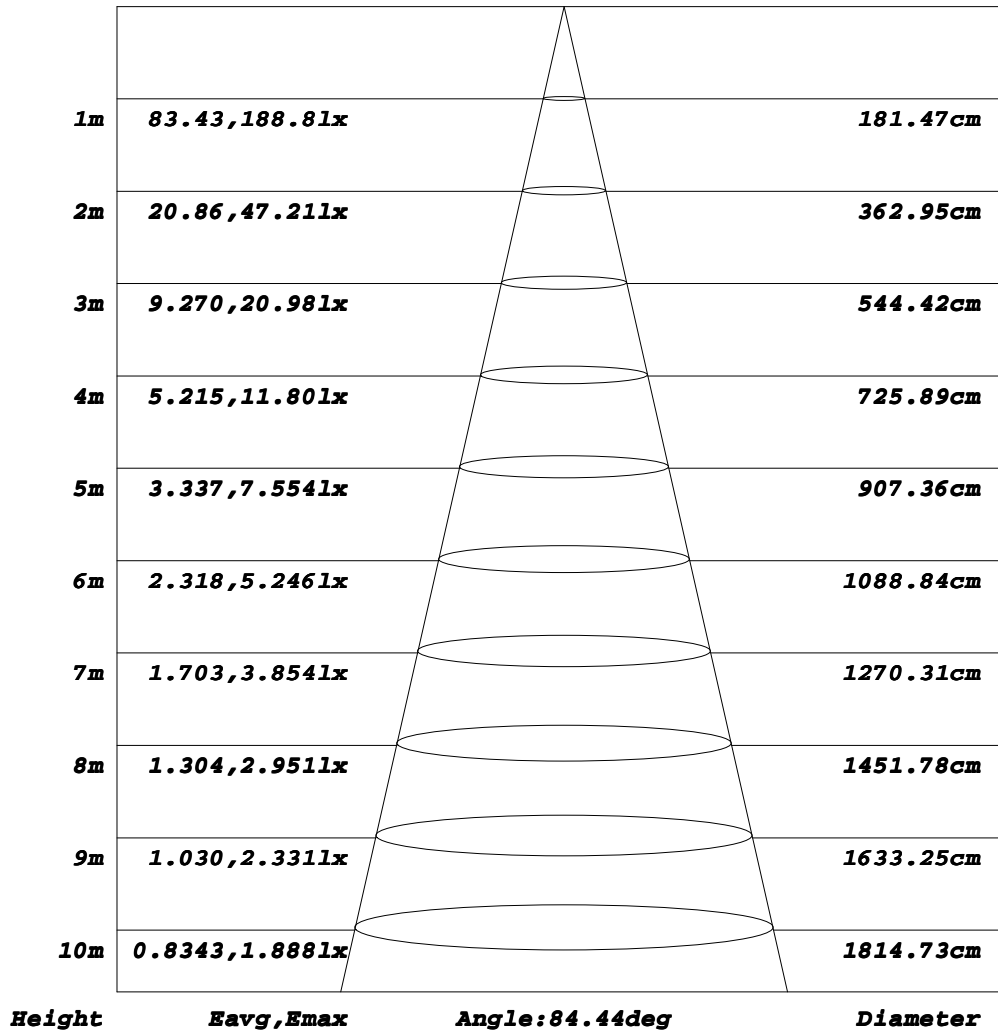
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

Flux out:227.9 lm



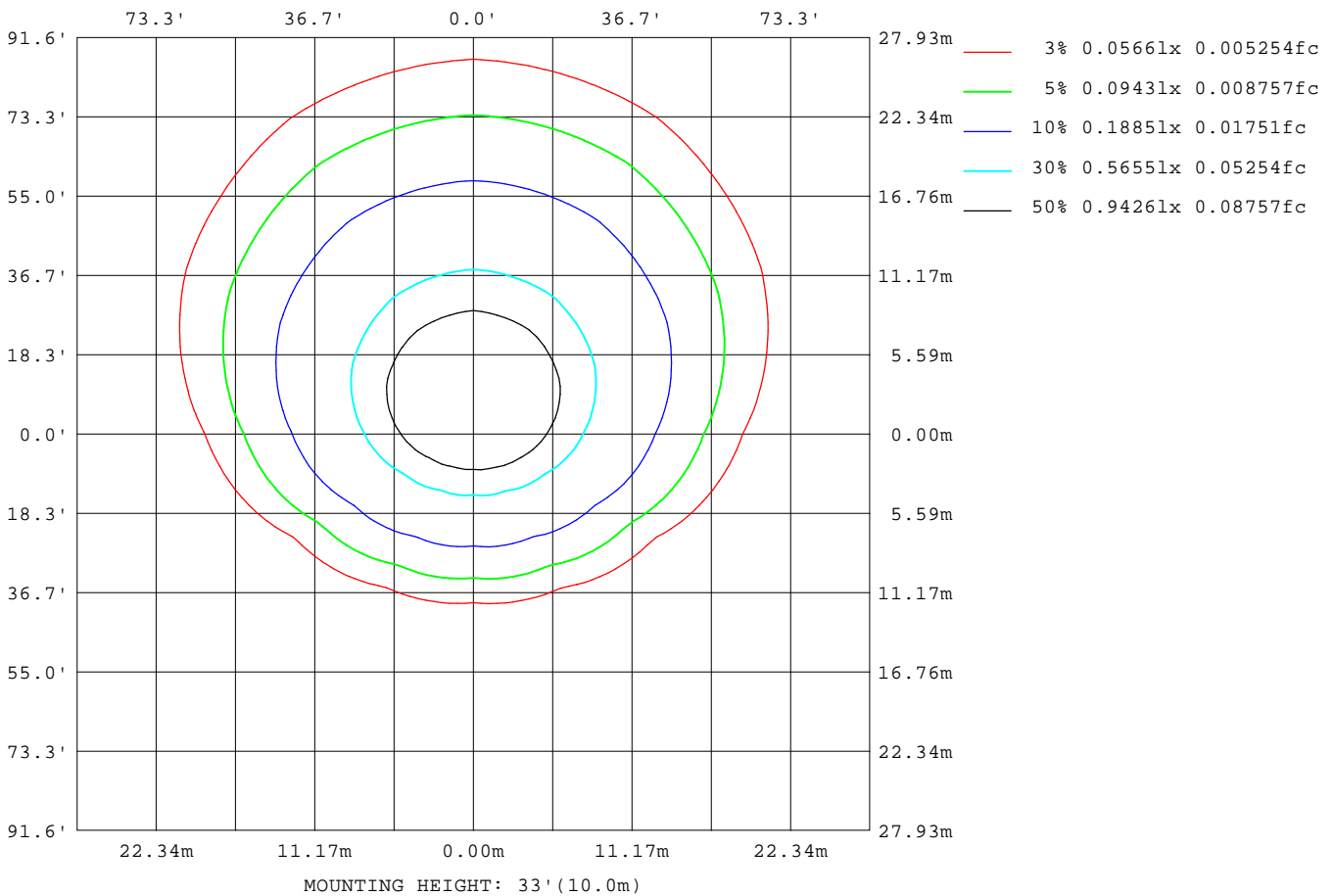
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-05-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

ISOLUX DIAGRAM

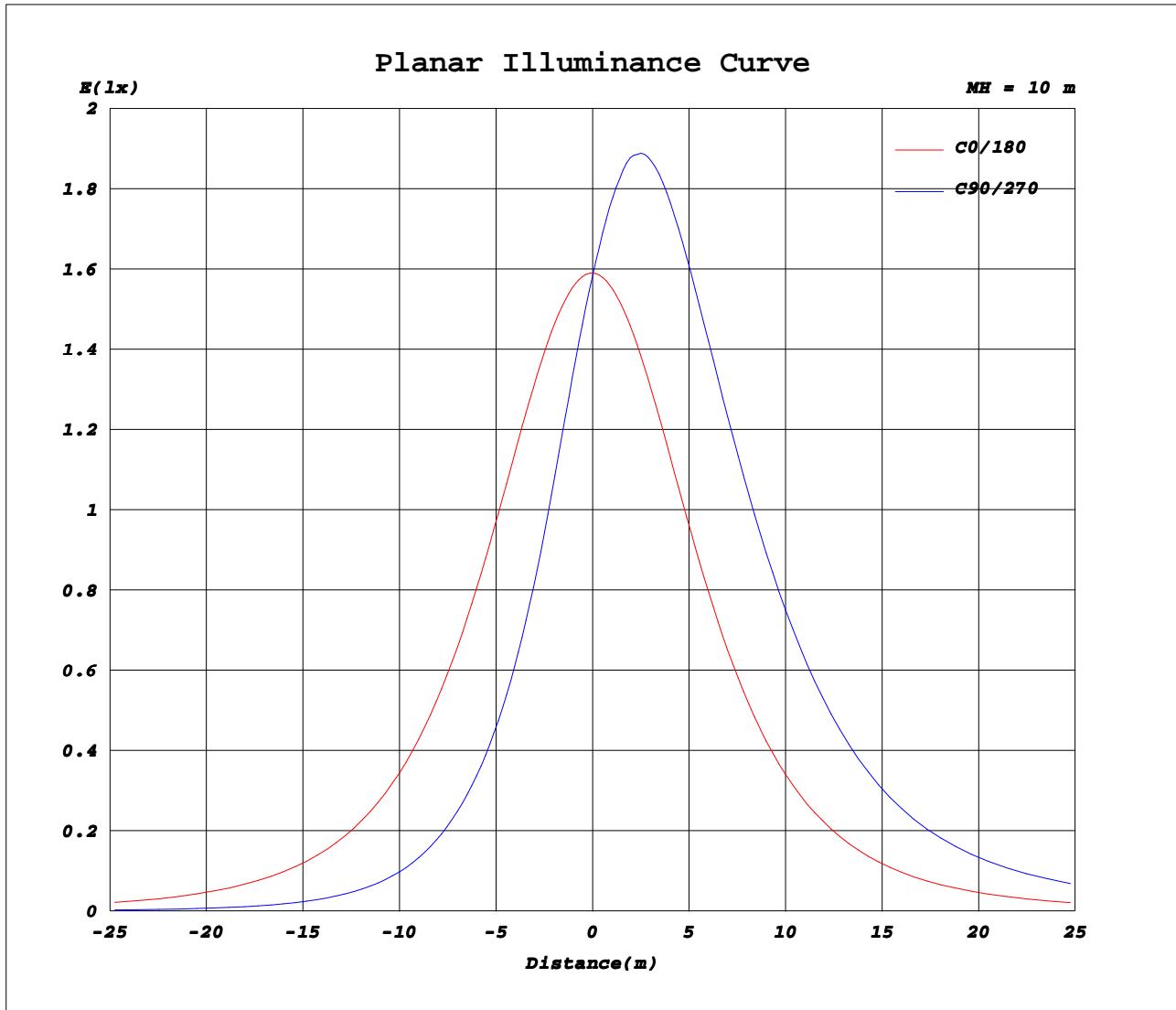
Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.000V I:0.2470A P:5.9000W PF:1.0000 Freq:0Hz Lamp Flux:543.422x1 lm		
NAME: 1310-055-860-24	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	158	158	158	158	158	158	158	158	158	158	158	158							
5	157	148	141	139	141	148	157	167	174	177	174	167							
10	155	137	124	119	123	136	154	174	189	195	189	174							
15	151	124	105	99.2	105	124	150	178	201	209	202	179							
20	145	111	89.2	82.2	88.9	110	144	180	209	218	211	182							
25	137	98.0	74.8	68.0	74.5	97.2	136	180	213	224	215	182							
30	129	85.5	62.2	55.7	62.0	84.8	127	177	213	225	215	180							
35	119	73.7	51.2	45.2	51.0	73.1	118	172	210	224	213	175							
40	108	62.6	41.4	35.9	41.2	62.1	107	164	205	220	208	167							
45	97.0	52.2	32.6	27.8	32.4	51.7	95.9	153	197	212	199	157							
50	85.3	42.4	24.9	21.0	24.8	41.9	84.5	141	185	200	188	145							
55	73.3	33.0	18.4	15.3	18.3	32.6	72.3	128	170	183	173	131							
60	61.0	24.3	12.9	10.9	12.9	23.9	60.2	113	152	164	154	116							
65	48.8	16.5	8.70	7.39	8.68	16.2	48.3	97.6	133	144	135	100							
70	36.7	10.1	5.55	4.88	5.57	9.97	36.3	82.0	114	124	116	84.0							
75	25.1	5.54	3.40	3.13	3.44	5.50	24.8	66.9	96.3	105	97.9	68.5							
80	14.3	2.76	2.15	2.18	2.22	2.81	14.3	52.8	79.6	87.2	81.0	54.0							
85	5.72	1.53	1.82	2.02	1.95	1.66	5.68	39.9	65.0	71.9	66.0	40.5							
90	1.11	1.51	2.01	2.25	2.16	1.71	1.33	28.6	52.4	58.8	53.1	28.9							
95	1.14	1.69	2.24	2.50	2.41	1.93	1.32	19.4	41.4	47.5	41.9	19.5							
100	1.26	1.88	2.48	2.76	2.67	2.15	1.42	12.5	32.0	37.8	32.4	12.4							
105	1.41	2.08	2.72	3.01	2.92	2.38	1.54	7.86	24.1	29.5	24.3	7.74							
110	1.55	2.26	2.94	3.26	3.16	2.60	1.67	5.07	17.7	22.7	17.8	5.03							
115	1.70	2.44	3.13	3.47	3.38	2.82	1.81	3.45	12.6	16.9	12.7	3.52							
120	1.85	2.60	3.30	3.66	3.58	3.03	1.95	2.39	8.93	12.3	8.93	2.71							
125	2.00	2.76	3.46	3.82	3.76	3.22	2.09	1.88	6.29	8.75	6.34	2.10							
130	2.17	2.91	3.60	3.95	3.92	3.40	2.23	1.79	4.19	6.22	4.60	2.12							
135	2.33	3.05	3.71	4.05	4.04	3.57	2.37	1.90	2.97	4.47	3.44	2.31							
140	2.50	3.18	3.80	4.13	4.15	3.72	2.50	2.06	2.21	3.26	2.48	2.51							
145	2.66	3.28	3.86	4.17	4.22	3.84	2.65	2.22	2.11	2.36	2.33	2.71							
150	2.81	3.36	3.89	4.20	4.26	3.95	2.79	2.40	2.26	2.30	2.51	2.92							
155	2.96	3.45	3.90	4.22	4.29	4.03	2.94	2.59	2.47	2.52	2.75	3.12							
160	3.11	3.52	3.91	4.19	4.28	4.09	3.08	2.78	2.70	2.78	2.99	3.33							
165	3.25	3.58	3.90	4.15	4.26	4.13	3.22	2.98	2.94	3.04	3.24	3.53							
170	3.38	3.62	3.86	4.08	4.21	4.14	3.35	3.18	3.17	3.29	3.49	3.71							
175	3.47	3.61	3.79	3.97	4.11	4.11	3.46	3.38	3.42	3.56	3.74	3.89							
180	3.53	3.56	3.66	3.82	3.97	4.04	3.53	3.56	3.66	3.82	3.97	4.04							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks: