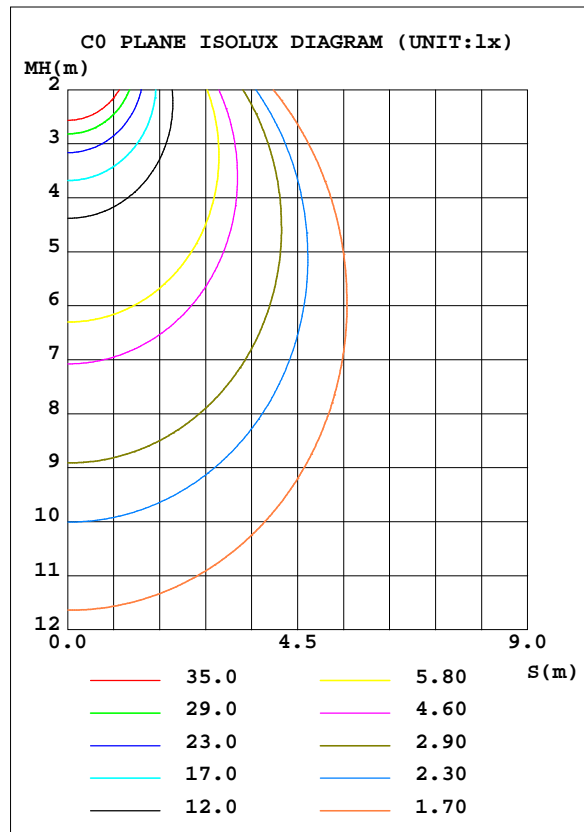
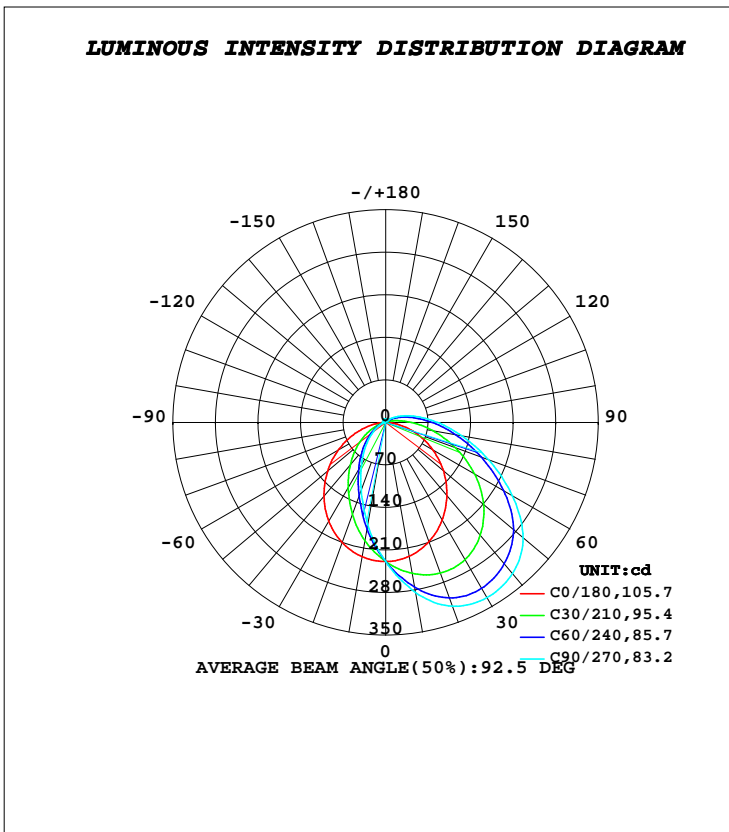




LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.000V I:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		Imax(cd)	333.1	S/MH(C0/180)	1.22
NOMINAL POWER(W)	8.7	LOR(%)	100.0	S/MH(C90/270)	0.62
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	798.62	η UP, DN(C0-180)	1.8, 20.7
NOMINAL FLUX(lm)	798.615	CIE CLASS	DIRECT	η UP, DN(C180-360)	6.2, 71.3
LAMPS INSIDE	1	η up(%)	8.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	92.0	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:

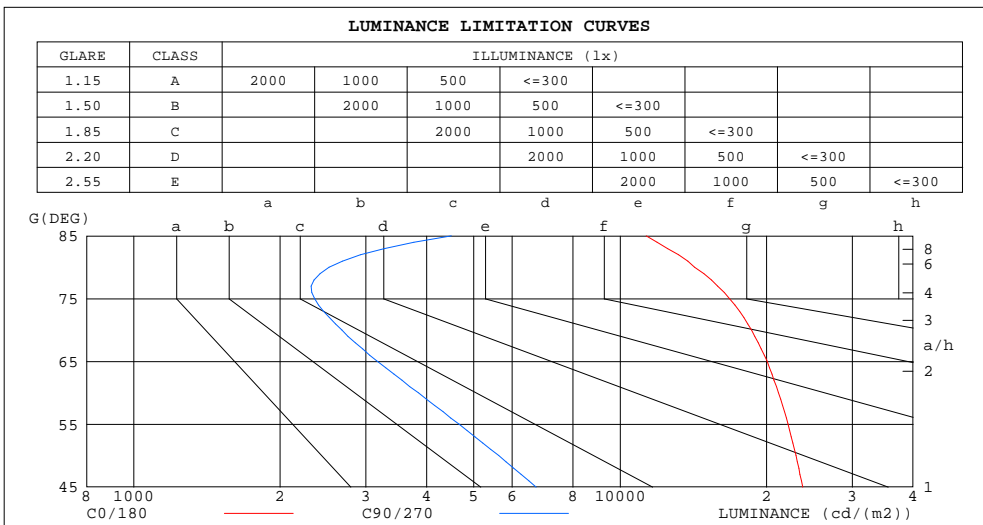
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	224.4	188.0	171.3	187.1	223.6	263.6	284.3	264.8	0- 10	21.71	21.71	2.72,2.72
20	210.2	144.5	118.2	143.6	208.8	285.4	321.7	287.9	10- 20	62.51	84.21	10.5,10.5
30	187.5	106.5	79.89	105.8	185.9	288.0	333.0	291.3	20- 30	95.48	179.7	22.5,22.5
40	158.2	75.07	51.68	74.67	156.8	272.9	324.6	276.5	30- 40	116.7	296.4	37.1,37.1
50	124.8	48.74	30.67	48.51	124.4	242.6	295.0	246.0	40- 50	123.8	420.2	52.6,52.6
60	89.40	27.43	16.31	27.26	89.24	196.3	240.3	198.8	50- 60	115.1	535.3	67,67
70	53.86	12.05	7.766	11.91	54.33	144.8	180.8	146.2	60- 70	93.00	628.3	78.7,78.7
80	20.86	4.219	3.716	4.024	22.18	97.68	126.7	97.92	70- 80	65.72	694.0	86.9,86.9
90	2.052	3.020	3.533	2.901	2.613	59.64	85.49	59.16	80- 90	41.02	735.0	92,92
100	2.301	3.606	4.266	3.576	2.563	32.68	54.75	32.02	90-100	24.58	759.6	95.1,95.1
110	2.675	4.183	4.958	4.251	2.860	16.58	32.60	16.20	100-110	14.36	773.9	96.9,96.9
120	3.046	4.690	5.532	4.854	3.221	8.225	17.65	8.284	110-120	8.398	782.3	98,98
130	3.472	5.104	5.949	5.361	3.608	4.492	9.092	4.867	120-130	5.241	787.6	98.6,98.6
140	3.917	5.420	6.198	5.752	4.015	3.496	4.804	3.728	130-140	3.758	791.3	99.1,99.1
150	4.394	5.641	6.301	6.022	4.457	3.730	3.545	4.050	140-150	2.926	794.3	99.5,99.5
160	4.888	5.798	6.309	6.190	4.907	4.336	4.252	4.703	150-160	2.309	796.6	99.7,99.7
170	5.240	5.740	6.119	6.176	5.267	4.937	4.988	5.351	160-170	1.516	798.1	99.9,99.9
180	5.381	5.456	5.671	5.918	5.387	5.458	5.671	5.919	170-180	0.5311	798.6	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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		



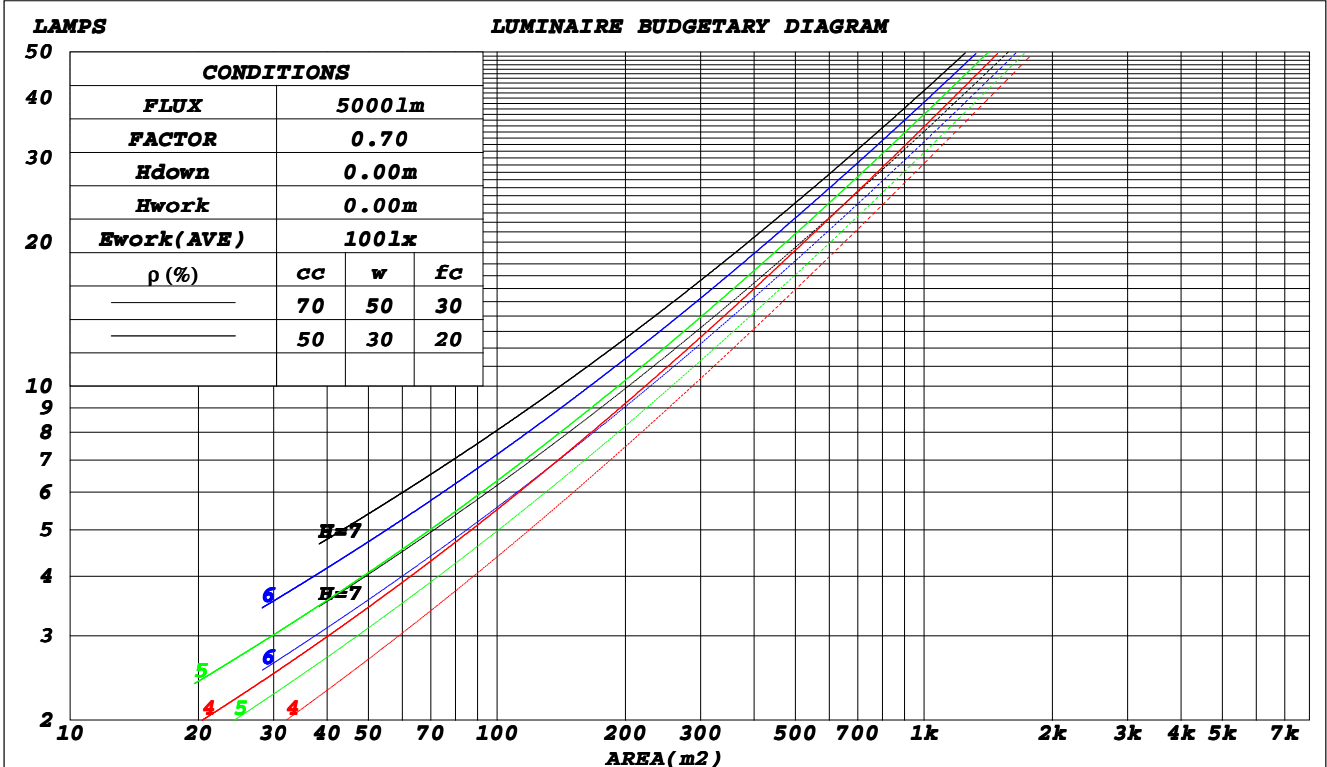
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.000V I:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	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	.69	.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	.64	.56	.49	.61	.54	.48	.58	.51	.46	.55	.49	.45	.42
5.0	.59	.50	.43	.57	.49	.42	.54	.47	.41	.52	.45	.40	.49	.43	.39	.36
6.0	.53	.44	.37	.52	.43	.37	.49	.41	.36	.47	.40	.35	.44	.38	.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	.34	.29	.41	.33	.28	.39	.32	.27	.37	.31	.27	.25
9.0	.40	.32	.26	.39	.31	.26	.37	.30	.25	.36	.29	.25	.34	.28	.24	.22
10.0	.37	.29	.24	.36	.28	.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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	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	.342	.195	.062	.324	.186	.059	.307	.177	.057	.292	.169	.055	
2.0	.314	.172	.053	.306	.168	.052	.290	.161	.050	.275	.154	.048	.261	.148	.047	
3.0	.284	.151	.045	.276	.148	.045	.262	.142	.043	.249	.136	.042	.236	.131	.040	
4.0	.259	.134	.040	.252	.132	.039	.239	.127	.038	.227	.122	.037	.216	.117	.036	
5.0	.237	.121	.035	.231	.118	.034	.219	.114	.034	.208	.110	.033	.198	.106	.032	
6.0	.218	.109	.031	.213	.107	.031	.202	.104	.030	.192	.100	.029	.183	.096	.029	
7.0	.202	.100	.028	.197	.098	.028	.188	.095	.027	.179	.092	.027	.170	.088	.026	
8.0	.188	.092	.026	.184	.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	.141	.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	.215	.215	.215	.147	.147	.147	.084	.084	.084	.027	.027	.027	
2.0	.237	.193	.157	.203	.166	.136	.139	.115	.095	.080	.067	.055	.026	.022	.018	
3.0	.229	.176	.134	.196	.152	.116	.135	.106	.082	.078	.062	.048	.025	.020	.016	
4.0	.221	.163	.119	.190	.141	.103	.131	.098	.073	.076	.058	.043	.024	.019	.014	
5.0	.214	.153	.109	.184	.133	.094	.126	.093	.067	.073	.054	.040	.024	.018	.013	
6.0	.206	.145	.101	.177	.126	.088	.122	.088	.062	.071	.052	.037	.023	.017	.012	
7.0	.199	.138	.096	.172	.120	.083	.119	.084	.059	.069	.050	.035	.022	.016	.012	
8.0	.193	.133	.091	.166	.115	.080	.115	.081	.056	.067	.048	.034	.022	.016	.011	
9.0	.187	.128	.088	.161	.111	.077	.111	.078	.054	.065	.046	.032	.021	.015	.011	
10.0	.181	.124	.085	.156	.107	.074	.108	.075	.053	.063	.045	.032	.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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	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	19.9	21.4	20.3	21.7	22.1	13.1	14.6	13.5	14.9	15.3
3H	21.5	22.9	21.9	23.3	23.7	13.6	14.9	14.0	15.3	15.7
4H	22.2	23.5	22.6	23.9	24.3	13.7	15.0	14.1	15.4	15.8
6H	22.7	23.9	23.1	24.3	24.8	13.8	15.0	14.3	15.5	15.9
8H	22.8	24.0	23.3	24.4	24.9	13.9	15.1	14.4	15.5	16.0
12H	22.9	24.0	23.4	24.5	25.0	14.1	15.2	14.6	15.7	16.1
4H 2H	19.7	21.0	20.1	21.4	21.8	13.9	15.2	14.3	15.6	16.0
3H	21.4	22.5	21.8	22.9	23.4	14.4	15.5	14.9	16.0	16.4
4H	22.1	23.2	22.6	23.6	24.1	14.6	15.6	15.1	16.1	16.6
6H	22.7	23.7	23.3	24.1	24.7	14.8	15.7	15.3	16.2	16.7
8H	23.0	23.8	23.5	24.3	24.9	14.9	15.8	15.5	16.3	16.9
12H	23.1	23.9	23.7	24.4	25.0	15.2	16.0	15.7	16.5	17.1
8H 4H	22.0	22.8	22.5	23.4	23.9	14.8	15.7	15.4	16.2	16.8
6H	22.6	23.4	23.2	23.9	24.5	15.1	15.9	15.7	16.4	17.0
8H	22.9	23.5	23.5	24.1	24.7	15.4	16.0	15.9	16.6	17.2
12H	23.1	23.7	23.7	24.3	24.9	15.8	16.3	16.3	16.9	17.5
12H 4H	21.9	22.7	22.5	23.3	23.8	14.8	15.6	15.4	16.2	16.7
6H	22.6	23.2	23.2	23.8	24.4	15.2	15.8	15.8	16.4	17.0
8H	22.9	23.4	23.5	24.0	24.7	15.5	16.0	16.1	16.6	17.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.3					+ 0.6 / - 0.8				
1.5H	+ 1.1 / - 1.0					+ 0.5 / - 0.6				
2.0H	+ 1.9 / - 2.0					+ 0.8 / - 1.1				

CIE Pub.117, 798.6 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.8)

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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		

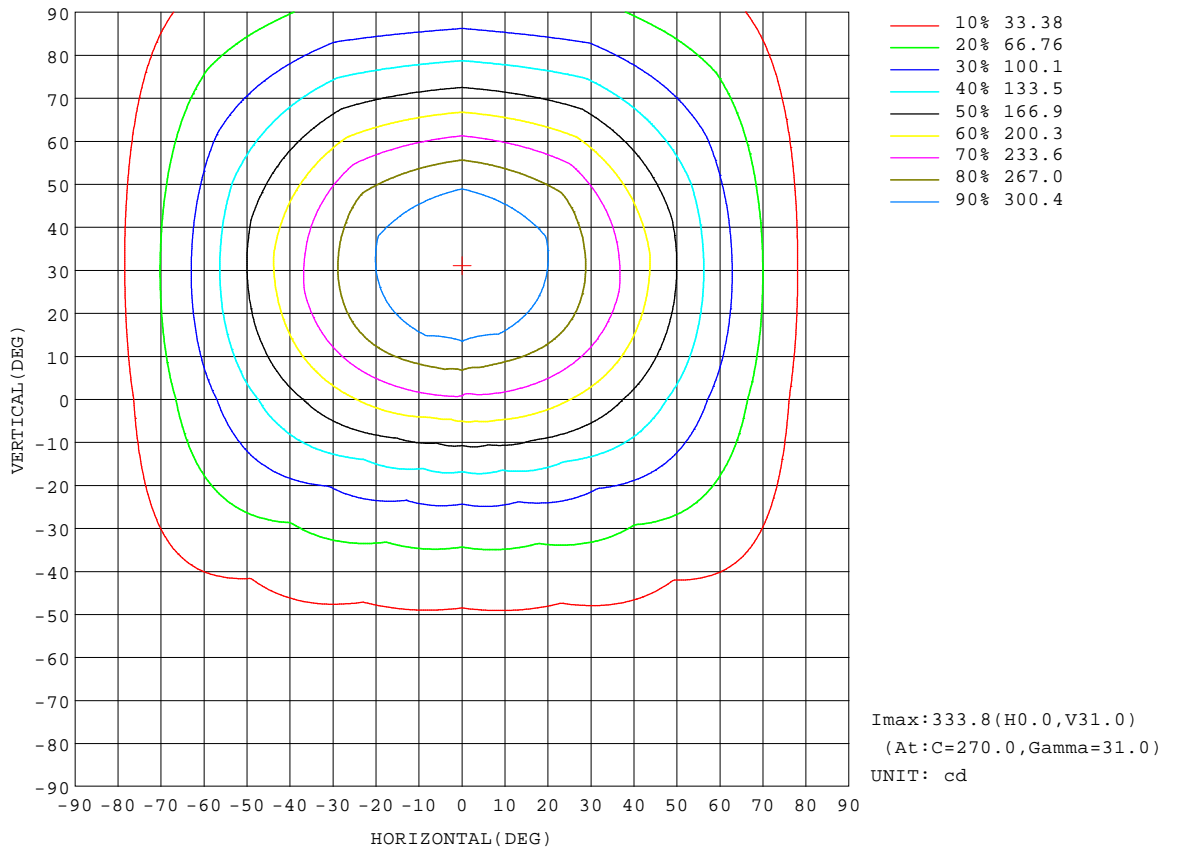
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	53	41	34	52	41	34	51	40	33	27
0.80	63	50	43	61	50	42	59	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	56	48
1.50	83	72	64	81	70	63	77	68	62	53
2.00	90	80	72	87	78	71	83	75	69	60
2.50	94	85	78	91	83	77	86	79	74	64
3.00	97	89	83	95	87	81	89	83	78	68
4.00	102	95	89	99	92	87	93	88	84	72
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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		



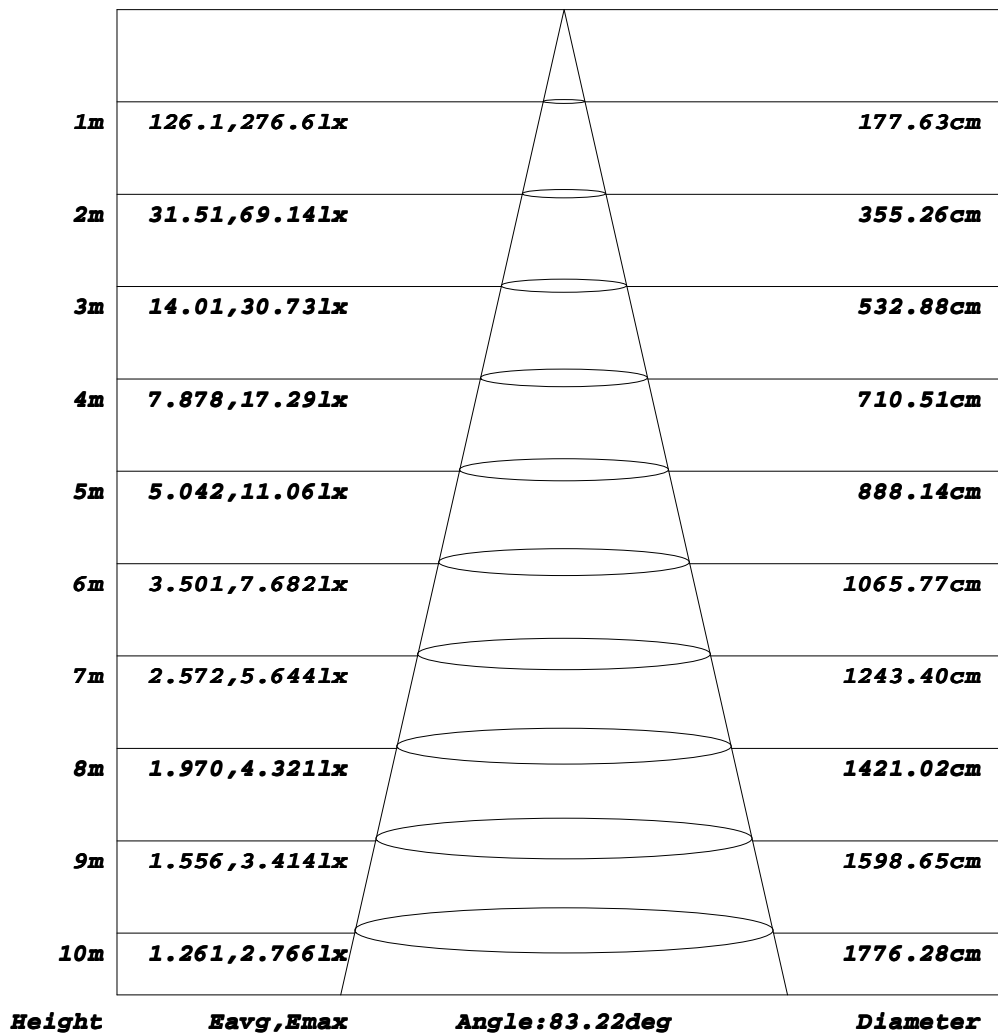
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-05-30

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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		

Flux out:321.0 lm



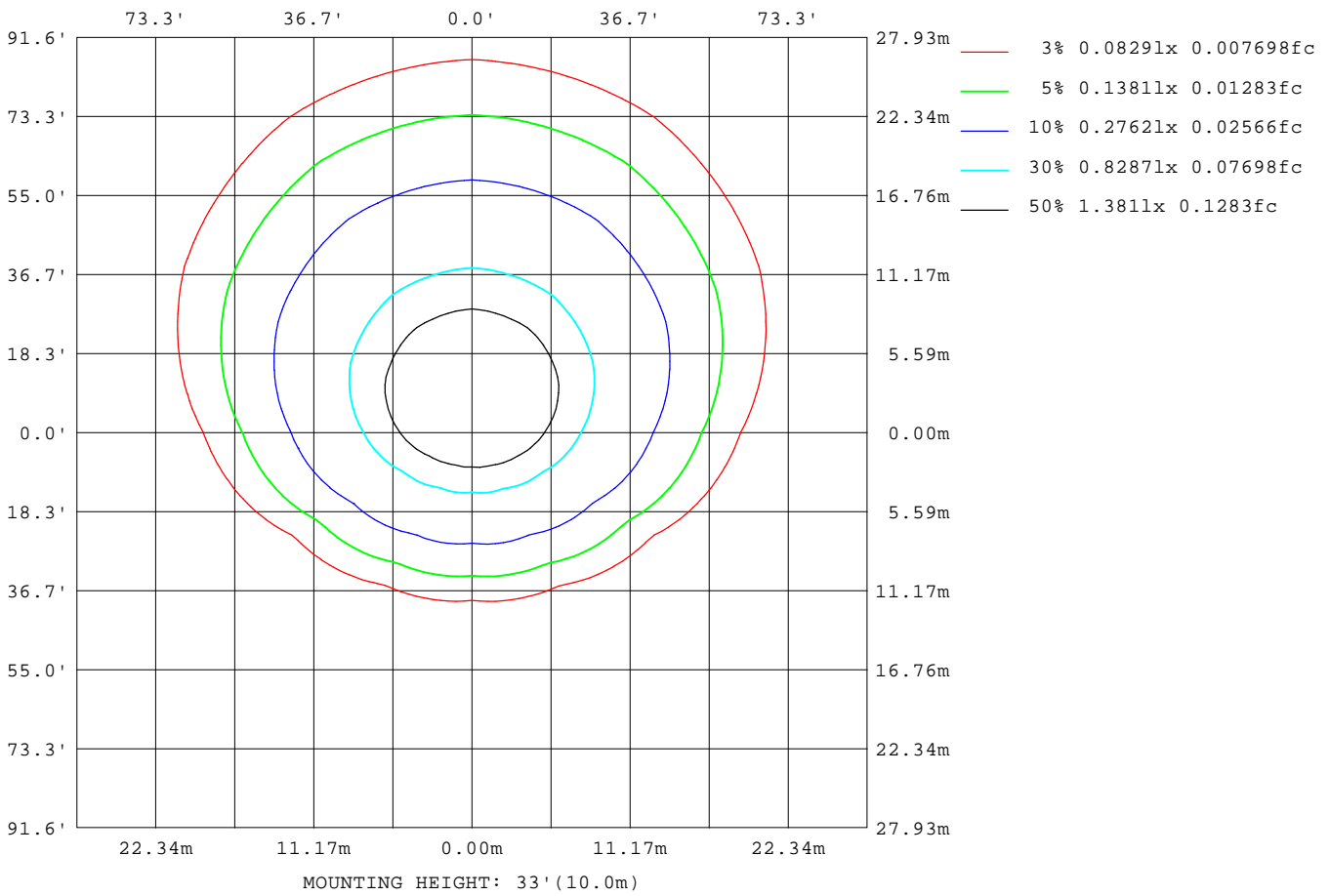
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

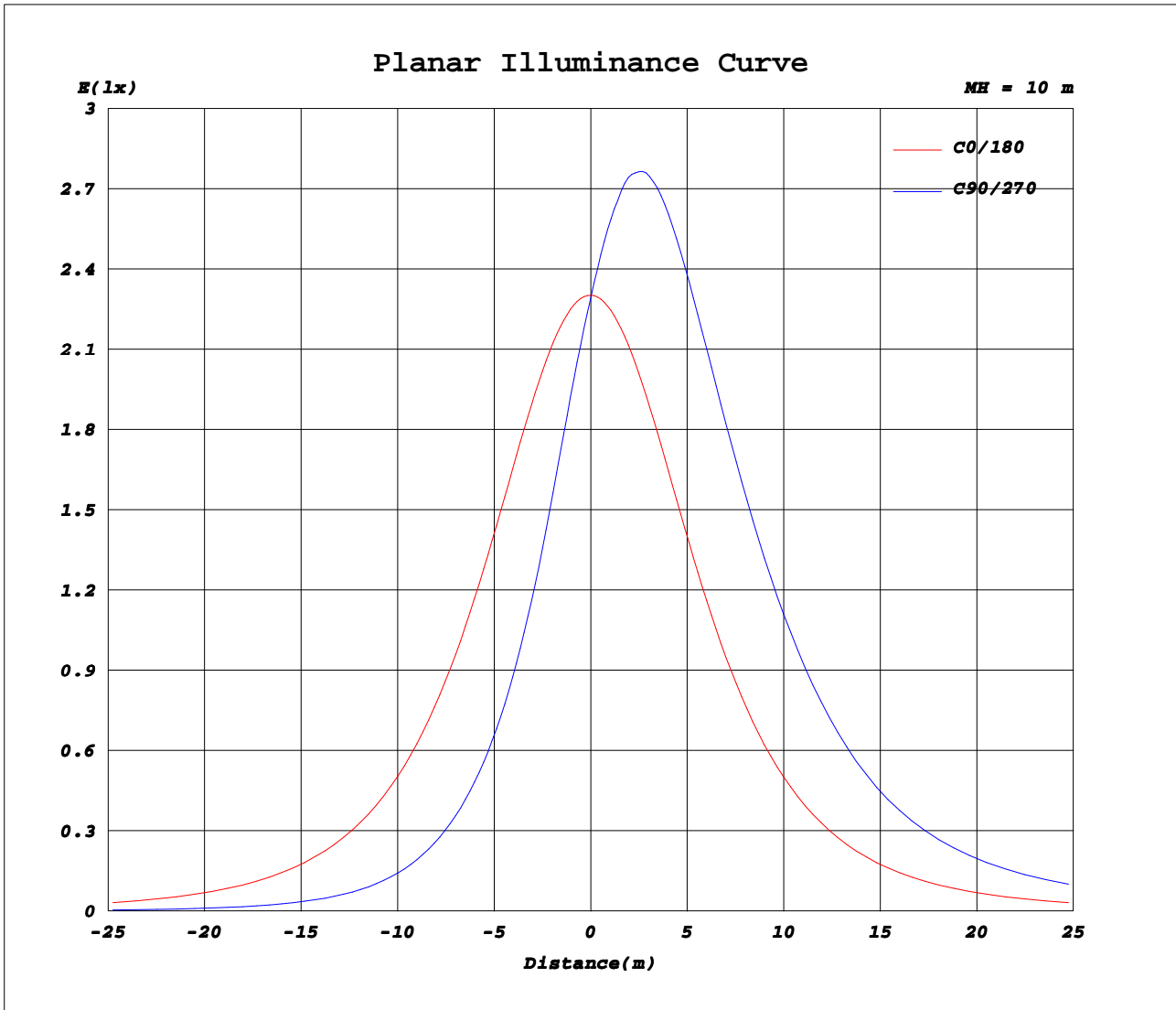
Test:U:24.000V I:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		



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:0.3660A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:798.615x1 lm		
NAME: 1310-085-860-24	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	229	229	229	229	229	229	229	229	229	229	229	229							
5	228	214	204	201	204	214	227	242	253	257	253	242							
10	224	198	178	171	178	197	224	252	275	284	276	253							
15	218	180	152	143	151	178	217	260	294	306	296	261							
20	210	161	128	118	128	159	209	264	307	322	310	266							
25	200	142	108	97.5	107	140	198	264	314	330	317	267							
30	188	124	89.4	79.9	89.2	122	186	261	315	333	318	264							
35	174	107	73.5	64.8	73.4	106	172	253	312	331	315	257							
40	158	90.5	59.6	51.7	59.5	89.9	157	242	304	325	307	246							
45	142	75.4	47.1	40.3	47.0	75.0	141	228	292	313	295	231							
50	125	61.2	36.2	30.7	36.1	60.9	124	210	275	295	278	214							
55	107	47.9	27.0	22.7	26.8	47.7	107	191	251	270	254	194							
60	89.4	35.5	19.3	16.3	19.2	35.4	89.2	169	224	240	227	171							
65	71.6	24.3	13.3	11.4	13.1	24.3	71.7	146	195	210	198	147							
70	53.9	15.3	8.80	7.77	8.60	15.2	54.3	122	168	181	169	123							
75	36.7	8.65	5.69	5.17	5.46	8.58	37.6	99.7	141	152	142	100							
80	20.9	4.64	3.80	3.72	3.56	4.49	22.2	78.6	117	127	117	78.5							
85	8.33	2.81	3.21	3.33	3.07	2.61	9.41	59.3	95.4	105	95.6	58.7							
90	2.05	2.68	3.36	3.53	3.25	2.55	2.61	42.5	76.8	85.5	76.7	41.6							
95	2.15	2.94	3.71	3.90	3.61	2.86	2.46	28.8	60.6	69.0	60.2	27.7							
100	2.30	3.19	4.02	4.27	3.97	3.18	2.56	18.6	46.8	54.7	46.4	17.6							
105	2.48	3.45	4.34	4.62	4.33	3.51	2.70	11.8	35.2	42.7	34.7	10.8							
110	2.67	3.71	4.66	4.96	4.67	3.83	2.86	7.41	25.8	32.6	25.3	7.11							
115	2.86	3.96	4.94	5.27	4.99	4.14	3.03	5.07	18.5	24.3	18.0	5.03							
120	3.05	4.18	5.20	5.53	5.27	4.43	3.22	3.87	12.6	17.6	12.7	3.83							
125	3.25	4.39	5.42	5.77	5.53	4.71	3.41	3.15	8.55	12.7	9.08	3.08							
130	3.47	4.60	5.61	5.95	5.76	4.96	3.61	2.92	6.07	9.09	6.56	3.17							
135	3.69	4.79	5.76	6.10	5.94	5.21	3.81	3.12	4.60	6.57	4.93	3.44							
140	3.92	4.96	5.88	6.20	6.09	5.42	4.01	3.34	3.65	4.80	3.72	3.74							
145	4.15	5.11	5.97	6.26	6.19	5.60	4.23	3.58	3.34	3.64	3.45	4.03							
150	4.39	5.26	6.02	6.30	6.27	5.77	4.46	3.84	3.62	3.55	3.77	4.33							
155	4.64	5.41	6.04	6.33	6.33	5.92	4.69	4.12	3.92	3.89	4.11	4.64							
160	4.89	5.52	6.07	6.31	6.34	6.04	4.91	4.42	4.25	4.25	4.47	4.94							
165	5.10	5.59	6.02	6.24	6.32	6.11	5.11	4.71	4.58	4.62	4.83	5.23							
170	5.24	5.58	5.90	6.12	6.23	6.12	5.27	4.98	4.89	4.99	5.19	5.51							
175	5.38	5.57	5.77	5.95	6.09	6.10	5.34	5.19	5.19	5.33	5.54	5.76							
180	5.38	5.41	5.50	5.67	5.86	5.98	5.39	5.41	5.51	5.67	5.86	5.98							

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: