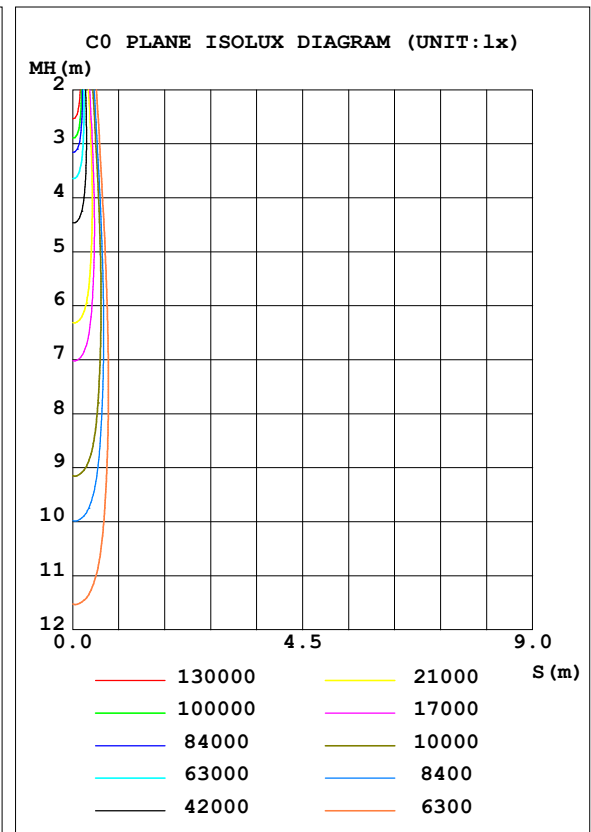
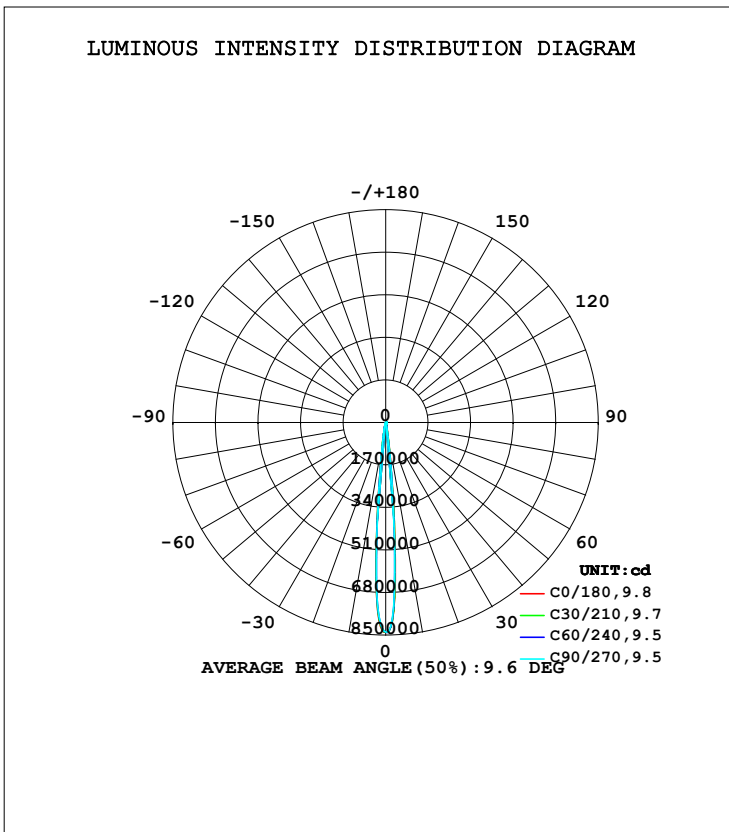




LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	P1	Imax (cd)	839046	S/MH (C0/180)	0.16
NOMINAL POWER (W)	420	LOR (%)	100.0	S/MH (C90/270)	0.16
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	35460	η UP, DN (C0-180)	0.0, 48.5
NOMINAL FLUX (lm)	35460	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 51.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	220.0	η down (%)	100.0	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [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	585.7	512.8	481.2	526.3	610.2	613.9	643.8	600.6	0- 10	25561	25561	72.1,72.1
20	63.89	61.15	54.77	62.01	64.57	80.17	74.06	77.11	10- 20	5642	31203	88,88
30	19.04	18.90	18.70	18.79	19.20	19.18	19.00	19.06	20- 30	1438	32640	92,92
40	11.66	11.99	11.84	11.86	11.61	11.94	11.90	11.93	30- 40	968.7	33609	94.8,94.8
50	6.817	6.742	6.473	6.705	6.795	6.809	6.633	6.820	40- 50	697.4	34306	96.7,96.7
60	4.181	4.291	4.192	4.270	4.171	4.223	4.142	4.233	50- 60	470.0	34776	98.1,98.1
70	2.668	2.593	2.516	2.579	2.657	2.634	2.593	2.620	60- 70	327.4	35104	99,99
80	1.657	1.623	1.560	1.599	1.633	1.630	1.591	1.627	70- 80	219.9	35324	99.6,99.6
90	0.9730	0.9681	0.9657	0.9686	0.9747	0.9797	0.9808	0.9775	80- 90	136.4	35460	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:*100cd									UNIT:lm		

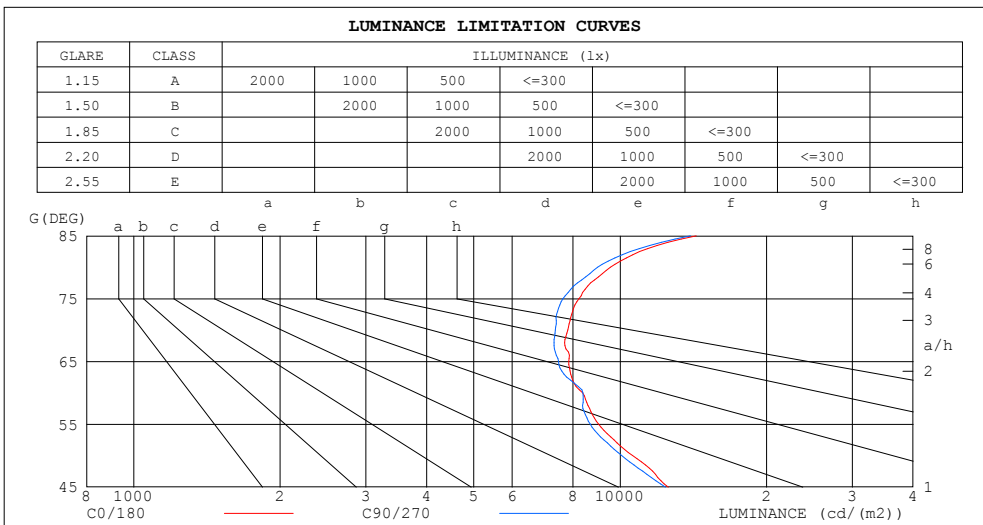
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



LUMINANCE LIMITATION CURVES

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	14323	13940
80	9545	8983
75	8229	7630
70	7800	7357
65	7835	7465
60	8363	8384
55	9034	8672
50	10606	10071
45	12556	12393

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

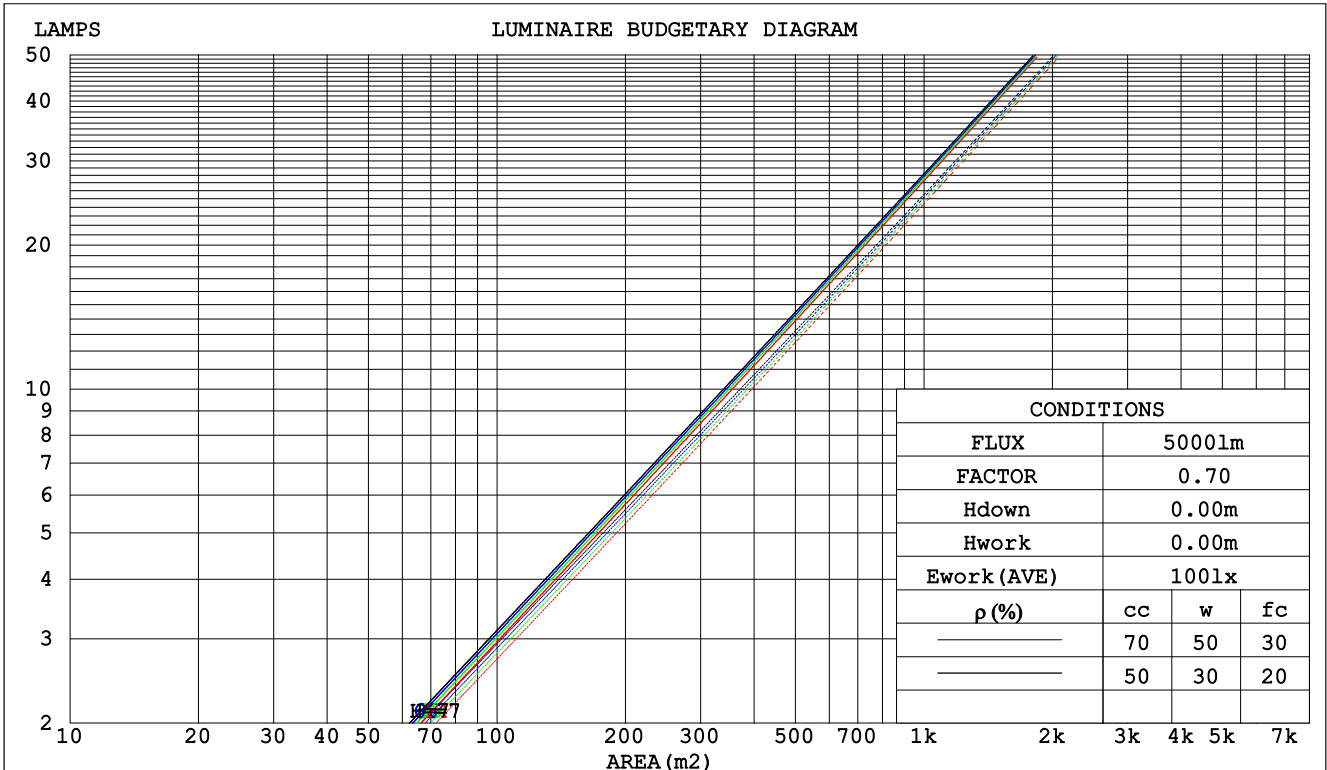
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	1.13	1.12	1.10	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.00	.00	.99	.97
2.0	1.09	1.06	1.04	1.07	1.05	1.03	1.04	1.02	1.01	1.02	1.00	.99	.99	.98	.97	.95
3.0	1.05	1.02	.00	1.04	1.01	.99	1.02	.00	.98	.00	.98	.96	.98	.96	.95	.94
4.0	1.03	.99	.97	1.02	.99	.96	.00	.97	.95	.98	.96	.94	.96	.94	.93	.92
5.0	1.00	.97	.94	.99	.96	.94	.98	.95	.93	.96	.94	.92	.95	.93	.92	.91
6.0	.98	.95	.92	.97	.94	.92	.96	.93	.91	.95	.93	.91	.94	.92	.90	.89
7.0	.96	.93	.91	.96	.93	.90	.95	.92	.90	.94	.91	.90	.93	.91	.89	.88
8.0	.95	.91	.89	.94	.91	.89	.93	.91	.89	.93	.90	.88	.92	.90	.88	.87
9.0	.93	.90	.88	.93	.90	.88	.92	.90	.88	.92	.89	.87	.91	.89	.87	.87
10.0	.92	.89	.87	.92	.89	.87	.91	.89	.87	.91	.88	.87	.90	.88	.86	.86



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



WEC AND CCEC

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm															
NAME: SPECTRUM-P1						DIM.:						WEIGHT:			
MFR.: CLF															

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.125	.071	.023	.119	.068	.022	.106	.061	.020	.095	.055	.018	.085	.049	.016	
2.0	.113	.062	.019	.108	.059	.018	.097	.054	.017	.088	.049	.015	.080	.045	.014	
3.0	.102	.055	.016	.098	.053	.016	.090	.049	.015	.082	.045	.014	.075	.041	.013	
4.0	.094	.049	.014	.090	.047	.014	.083	.044	.013	.077	.041	.012	.071	.038	.012	
5.0	.086	.044	.013	.083	.043	.012	.077	.040	.012	.072	.038	.011	.067	.036	.011	
6.0	.080	.040	.011	.077	.039	.011	.072	.037	.011	.068	.035	.010	.063	.033	.010	
7.0	.074	.037	.010	.072	.036	.010	.068	.034	.010	.064	.033	.010	.060	.031	.009	
8.0	.070	.034	.010	.068	.033	.009	.064	.032	.009	.061	.031	.009	.057	.029	.009	
9.0	.065	.032	.009	.064	.031	.009	.060	.030	.008	.057	.029	.008	.055	.028	.008	
10.0	.062	.030	.008	.060	.029	.008	.057	.028	.008	.055	.027	.008	.052	.026	.008	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.149	.143	.135	.128	.098	.093	.089	.056	.054	.052	.018	.017	.017	
2.0	.148	.133	.120	.127	.114	.103	.087	.079	.072	.050	.046	.042	.016	.015	.014	
3.0	.132	.113	.098	.113	.098	.085	.078	.068	.060	.045	.040	.035	.014	.013	.012	
4.0	.119	.098	.081	.102	.084	.071	.070	.059	.050	.040	.034	.029	.013	.011	.010	
5.0	.107	.085	.069	.092	.073	.060	.063	.051	.042	.037	.030	.025	.012	.010	.008	
6.0	.097	.074	.058	.083	.065	.051	.057	.045	.036	.033	.027	.021	.011	.009	.007	
7.0	.088	.066	.050	.076	.057	.044	.053	.040	.031	.031	.024	.018	.010	.008	.006	
8.0	.081	.059	.044	.070	.051	.038	.048	.036	.027	.028	.021	.016	.009	.007	.005	
9.0	.075	.053	.038	.064	.046	.033	.045	.032	.024	.026	.019	.014	.008	.006	.005	
10.0	.069	.048	.033	.060	.041	.029	.041	.029	.021	.024	.017	.012	.008	.006	.004	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



UGR(Unified Glare Rating) Table

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm										
NAME: SPECTRUM-P1					DIM.:			WEIGHT:		
MFR.: CLF										
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	0.3	0.8	0.5	1.0	1.1	0.3	0.8	0.4	0.9	1.1
3H	1.5	2.0	1.7	2.2	2.3	1.4	1.9	1.6	2.1	2.3
4H	2.1	2.6	2.4	2.8	3.0	2.0	2.5	2.3	2.7	2.9
6H	2.8	3.3	3.1	3.5	3.8	2.7	3.2	3.0	3.4	3.6
8H	3.2	3.7	3.5	3.9	4.1	3.1	3.5	3.3	3.7	4.0
12H	3.6	4.1	3.9	4.3	4.6	3.5	3.9	3.8	4.2	4.4
4H 2H	0.8	1.3	1.0	1.5	1.7	0.7	1.2	1.0	1.4	1.6
3H	2.2	2.6	2.5	2.9	3.1	2.1	2.6	2.4	2.8	3.1
4H	3.0	3.4	3.3	3.7	4.0	2.9	3.3	3.3	3.6	3.9
6H	3.8	4.2	4.2	4.5	4.9	3.8	4.1	4.1	4.5	4.8
8H	4.3	4.7	4.7	5.0	5.4	4.2	4.6	4.6	4.9	5.3
12H	4.9	5.2	5.3	5.5	5.9	4.8	5.1	5.2	5.4	5.8
8H 4H	3.3	3.6	3.7	4.0	4.3	3.2	3.6	3.6	3.9	4.3
6H	4.4	4.6	4.8	5.0	5.4	4.3	4.6	4.8	5.0	5.4
8H	5.0	5.2	5.4	5.7	6.1	4.9	5.2	5.4	5.6	6.0
12H	5.7	5.9	6.2	6.4	6.8	5.7	5.9	6.1	6.3	6.8
12H 4H	3.3	3.6	3.7	4.0	4.4	3.3	3.6	3.7	4.0	4.3
6H	4.5	4.7	4.9	5.2	5.6	4.5	4.7	4.9	5.1	5.6
8H	5.2	5.4	5.7	5.8	6.3	5.2	5.4	5.6	5.8	6.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3				
1.5H	+ 0.2 / - 0.1					+ 0.1 / - 0.2				
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3				

CIE Pub.117, 35460 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 12.4)
 Area: 0.1 m2

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



UTILIZATION FACTORS TABLE

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		

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	88	82	79	88	82	78	87	82	78	75
0.80	96	90	86	95	90	86	94	89	86	82
1.00	100	94	91	99	94	90	97	94	90	86
1.25	103	98	95	102	98	95	100	97	94	90
1.50	106	101	98	105	101	98	103	99	97	92
2.00	109	104	101	107	103	100	104	101	99	94
2.50	110	106	103	109	105	103	106	103	101	95
3.00	112	108	106	110	107	105	107	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	108	106	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

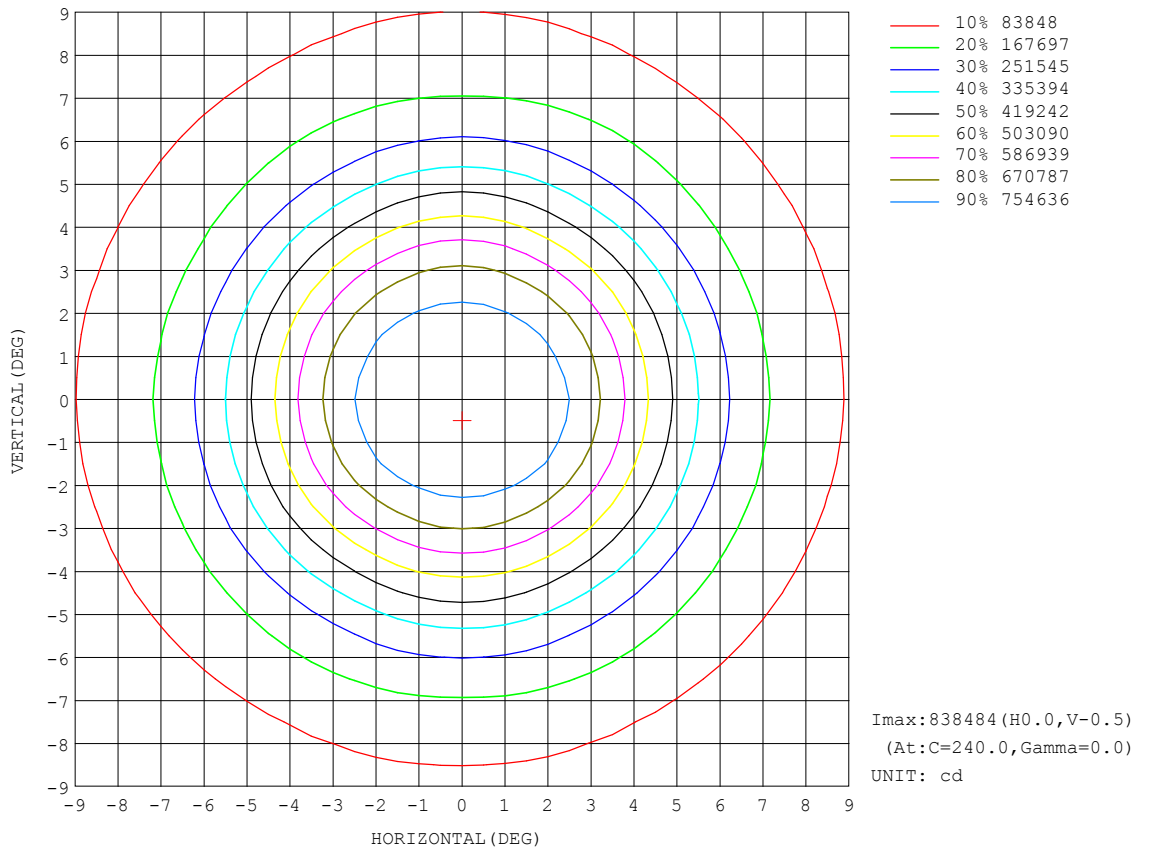
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 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



ISOCANDELA DIAGRAM

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		



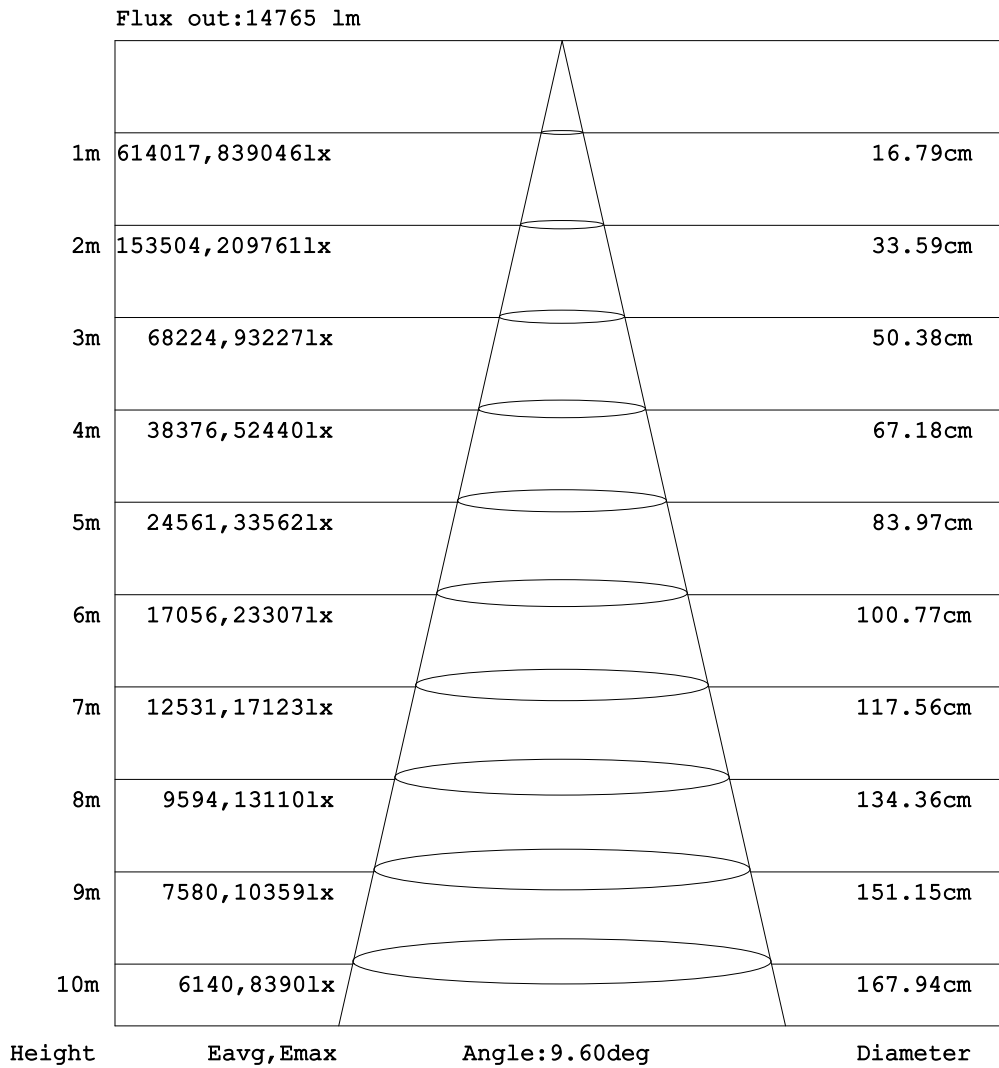
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: MEDIUM
Temperature: 15DEG
Operators: danny
Test Date: 2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-HD5 SYSTEM V2.0.407.13
Humidity: 65.0%
Test Distance: 9.400m [K=1.0000]
Remarks:



AAI Figure

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		



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

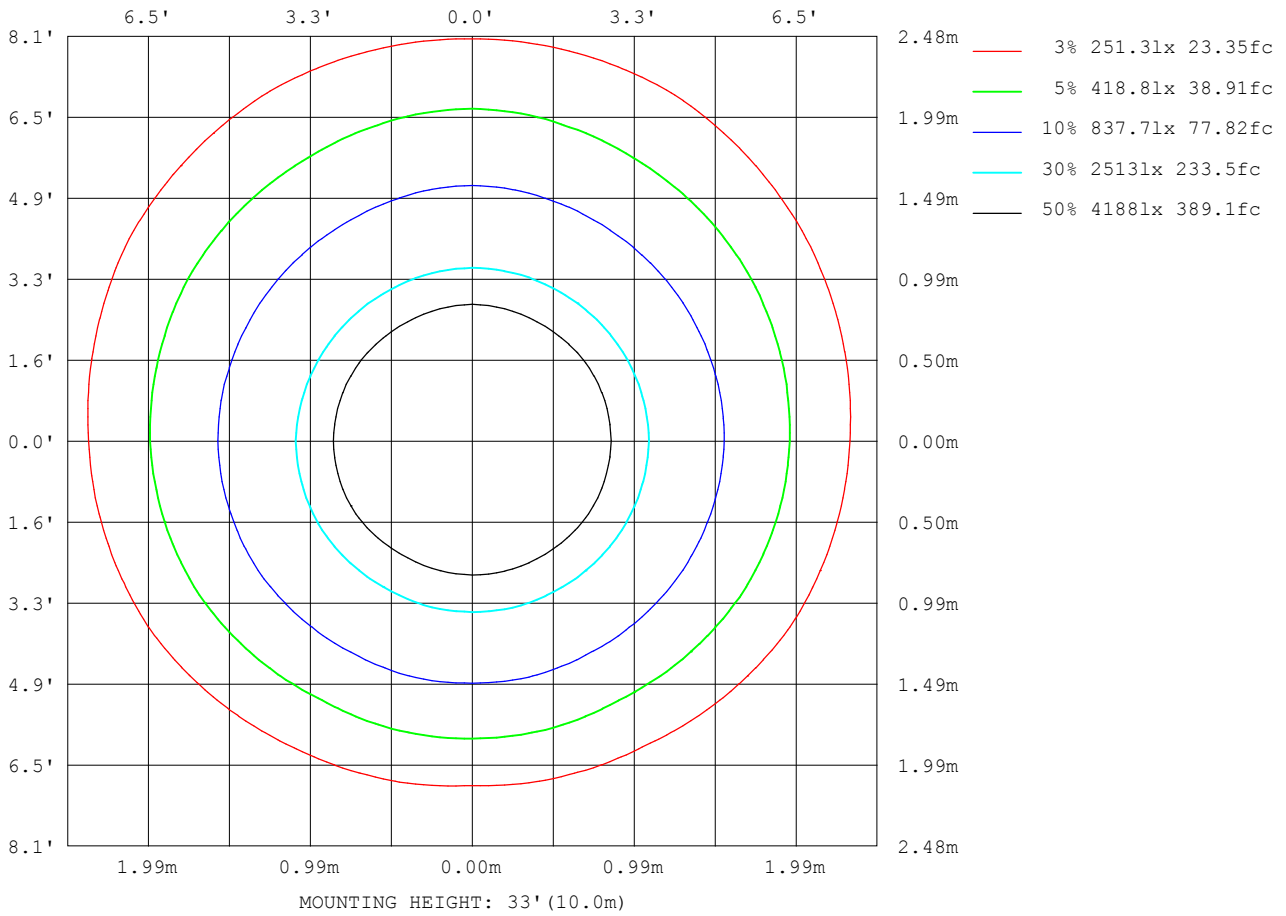
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



ISOLUX DIAGRAM

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



LED Avg.L Report

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		

AvgL	cd/m2
L_0~180 (65) av	7851
L_0~180 (75) av	8207
L_0~180 (85) av	14258
L_90~270 (65) av	7588
L_90~270 (75) av	7728
L_90~270 (85) av	14068
L_45 (65) av	7727
L_45 (75) av	7979
L_45 (85) av	14169

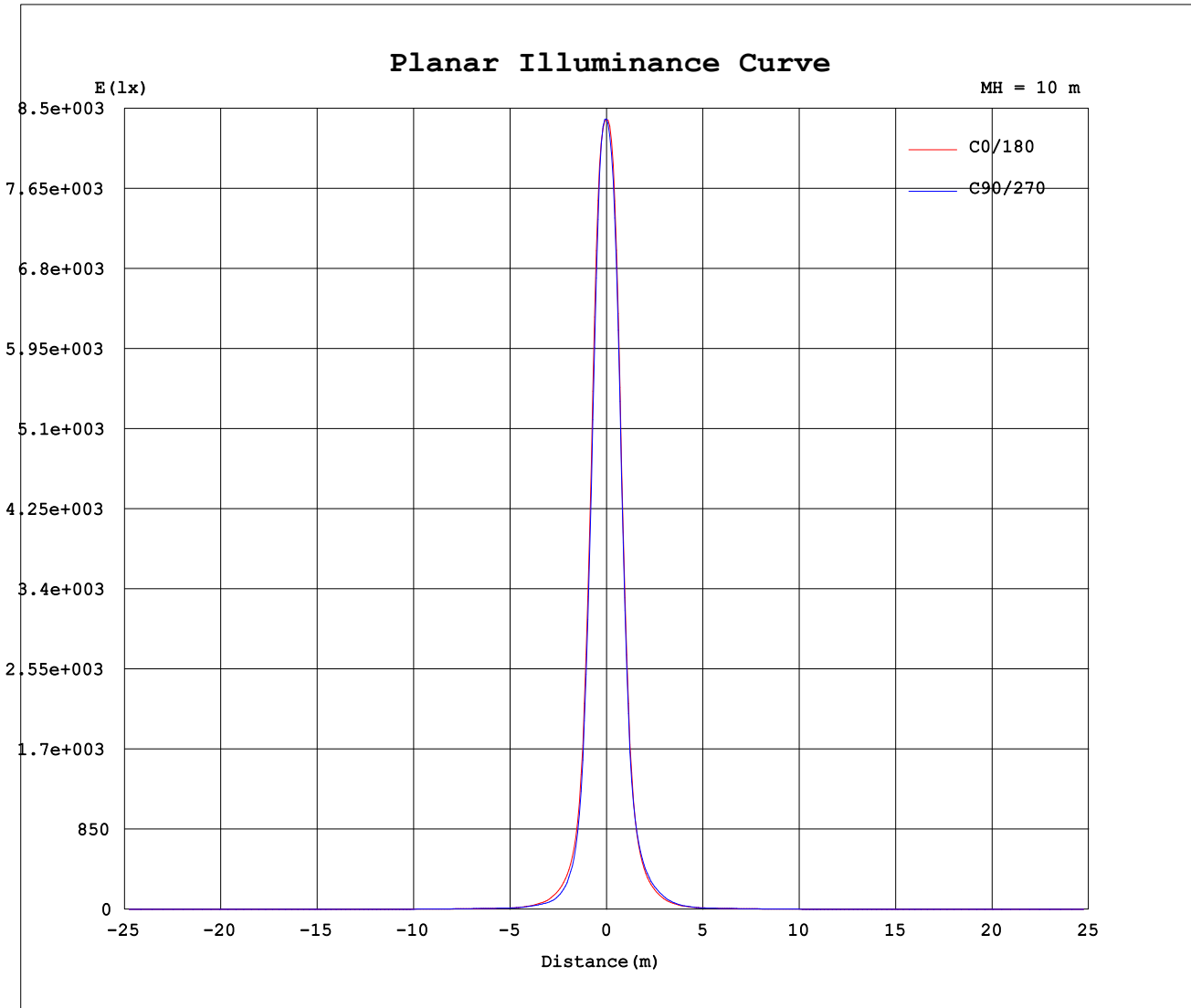
Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks:



Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: MEDIUM
Temperature:15DEG
Operators:danny
Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
Humidity:65.0%
Test Distance:9.400m [K=1.0000]
Remarks:



LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:218.78V I:1.8468A P:391.71W PF:0.9695 Freq:50.01Hz Lamp Flux:35460x1 lm		
NAME: SPECTRUM-P1	DIM.:	WEIGHT:
MFR.: CLF		

Table--1

UNIT: ×100cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	8367	8366	8365	8369	8377	8374	8375	8385	8390	8387	8386	8380						
5	4045	3972	3809	3812	3759	3993	4049	3993	3862	3937	3874	4011						
10	586	536	489	481	497	556	610	613	615	644	608	593						
15	179	167	137	123	147	175	186	219	229	221	223	204						
20	63.9	64.6	57.7	54.8	58.6	65.4	64.6	79.1	81.2	74.1	80.0	74.2						
25	26.7	25.9	25.1	25.5	25.0	26.2	27.0	28.5	28.2	28.8	27.6	27.7						
30	19.0	19.1	18.7	18.7	18.6	18.9	19.2	19.2	19.1	19.0	19.0	19.1						
35	15.0	17.1	15.3	16.4	15.1	16.7	14.9	16.7	15.1	16.2	15.1	16.7						
40	11.7	12.1	11.9	11.8	11.7	12.0	11.6	12.1	11.8	11.9	11.9	12.0						
45	8.88	8.97	8.96	8.76	8.91	8.91	8.81	8.93	9.05	8.85	9.14	8.95						
50	6.82	6.58	6.91	6.47	6.86	6.55	6.79	6.64	6.98	6.63	7.01	6.63						
55	5.18	5.05	5.14	4.97	5.14	5.05	5.19	5.12	5.28	5.12	5.27	5.10						
60	4.18	4.32	4.26	4.19	4.28	4.26	4.17	4.23	4.21	4.14	4.23	4.24						
65	3.31	3.19	3.29	3.15	3.29	3.17	3.32	3.22	3.39	3.26	3.37	3.20						
70	2.67	2.54	2.65	2.52	2.64	2.52	2.66	2.56	2.71	2.59	2.70	2.54						
75	2.13	2.00	2.13	1.97	2.11	1.97	2.12	1.99	2.16	2.03	2.16	1.99						
80	1.66	1.58	1.66	1.56	1.64	1.56	1.63	1.58	1.68	1.59	1.68	1.58						
85	1.25	1.23	1.25	1.21	1.23	1.21	1.24	1.23	1.25	1.24	1.26	1.22						
90	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.98	0.98	0.98	0.98	0.98						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: MEDIUM
 Temperature:15DEG
 Operators:danny
 Test Date:2018-12-13

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-HD5 SYSTEM V2.0.407.13
 Humidity:65.0%
 Test Distance:9.400m [K=1.0000]
 Remarks: