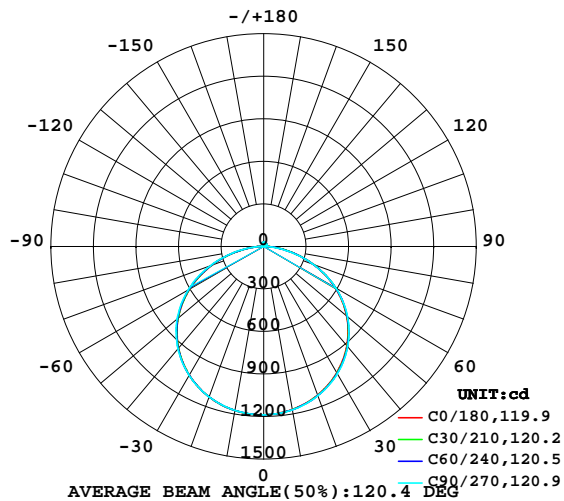


LUMINAIRE PHOTOMETRIC TEST REPORT

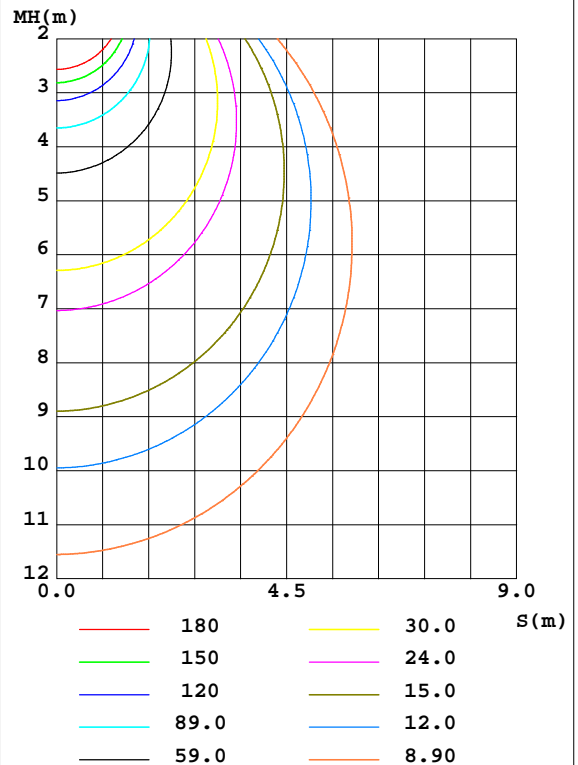
Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 125.77 lm/W			
MODEL		I _{max} (cd)	1188	S/MH(C0/180)	1.31
NOMINAL POWER(W)	30.4	LOR(%)	100.0	S/MH(C90/270)	1.32
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	3823.4	η UP,DN(C0-180)	1.5,47.8
NOMINAL FLUX(lm)	3823.39	CIE CLASS	DIRECT	η UP,DN(C180-360)	1.5,49.2
LAMPS INSIDE	1	η up(%)	3.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	97.0	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-10-12

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

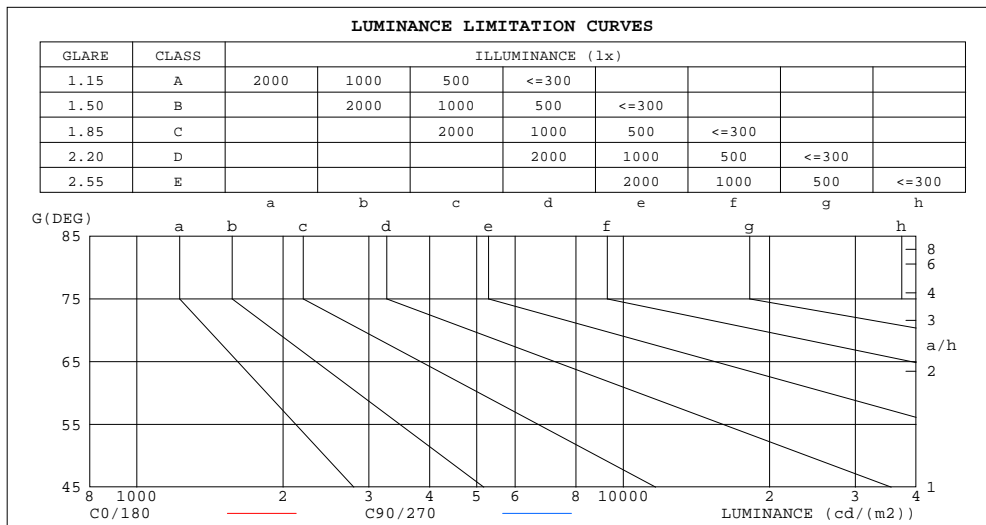
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1168	1169	1170	1171	1175	1174	1174	1171	0- 10	112.6	112.6	2.94,2.94
20	1115	1117	1120	1123	1129	1129	1129	1124	10- 20	325.3	437.9	11.5,11.5
30	1030	1034	1038	1041	1050	1050	1052	1045	20- 30	501.3	939.2	24.6,24.6
40	912.5	918.5	922.6	925.2	935.2	937.1	941.2	932.6	30- 40	619.2	1558	40.8,40.8
50	763.2	768.7	772.6	774.9	789.2	790.6	799.2	788.4	40- 50	662.2	2221	58.1,58.1
60	582.8	587.2	588.4	590.3	604.0	607.8	617.0	610.5	50- 60	619.4	2840	74.3,74.3
70	375.6	376.6	373.1	374.6	390.5	395.2	403.2	404.3	60- 70	489.6	3330	87.1,87.1
80	161.4	159.9	148.9	153.6	171.7	171.6	179.3	182.8	70- 80	290.2	3620	94.7,94.7
90	26.44	23.40	11.01	19.19	29.60	26.02	16.62	28.67	80- 90	90.26	3710	97,97
100	11.03	10.90	10.49	10.87	11.96	12.14	11.55	11.93	90-100	14.77	3725	97.4,97.4
110	13.33	13.35	13.51	13.68	14.04	14.33	14.26	14.04	100-110	13.17	3738	97.8,97.8
120	16.47	16.35	16.48	16.75	16.93	17.28	17.06	16.86	110-120	15.17	3753	98.2,98.2
130	19.53	19.27	19.43	19.81	19.77	20.18	19.84	19.67	120-130	16.35	3769	98.6,98.6
140	22.19	22.02	22.17	22.63	22.31	22.86	22.55	22.37	130-140	16.29	3786	99,99
150	24.59	24.55	24.80	25.20	24.54	25.21	25.01	24.82	140-150	14.83	3801	99.4,99.4
160	26.93	26.98	27.26	27.50	26.62	27.22	27.20	27.05	150-160	12.01	3813	99.7,99.7
170	28.84	29.00	29.20	29.34	28.53	28.96	29.03	29.11	160-170	7.944	3821	99.9,99.9
180	29.71	30.01	30.09	30.25	29.73	29.99	30.08	30.30	170-180	2.814	3823	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:2023-10-12

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	87502	68284
80	92945	85726
75	102954	100245
70	109804	109091
65	114031	114593
60	116566	117679
55	117977	119430
50	118730	120193
45	118865	120321

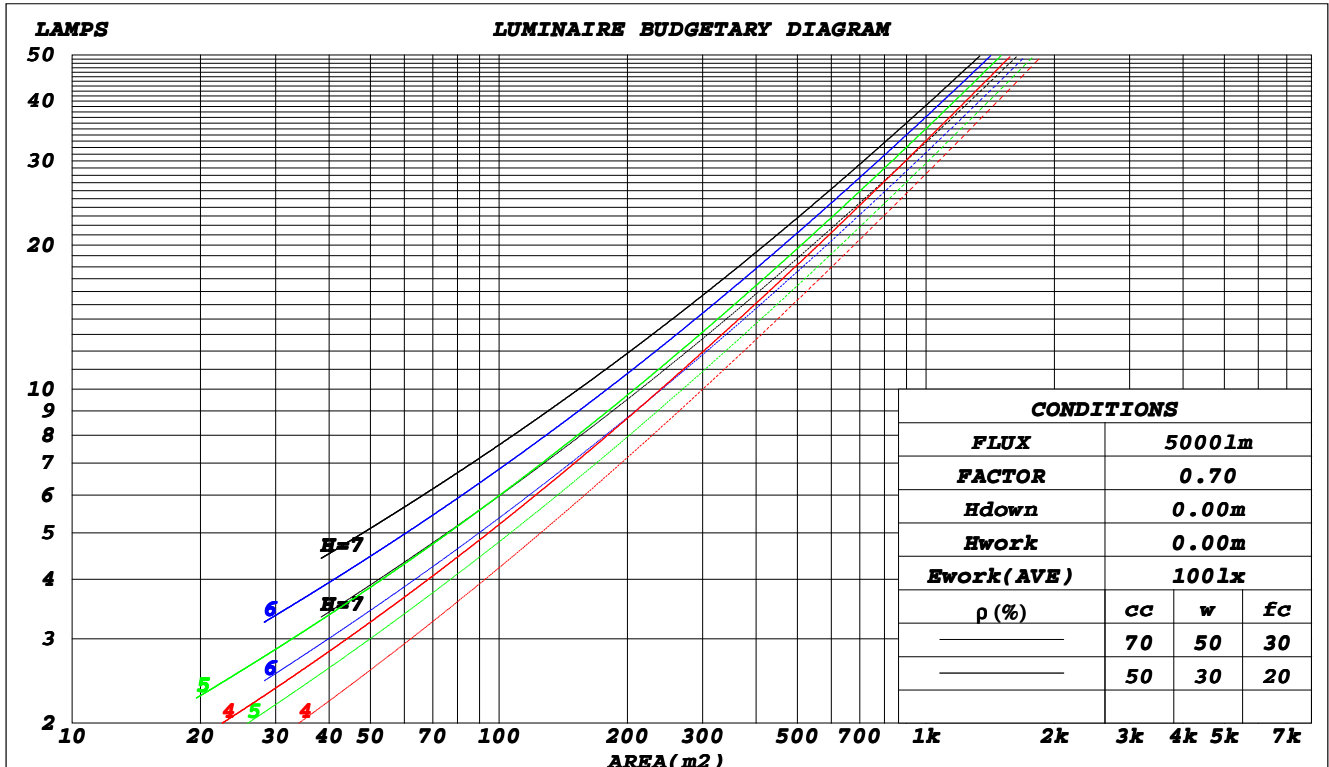
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-10-12

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	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						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.03	.98	.94	.90	.96	.92	.95	.92	.89	.91	.88	.86	.87	.84	.82	.80
2.0	.89	.82	.76	.87	.80	.75	.83	.77	.73	.79	.74	.70	.75	.72	.68	.66
3.0	.78	.69	.63	.76	.68	.62	.72	.66	.60	.69	.64	.59	.66	.62	.57	.55
4.0	.69	.60	.53	.67	.59	.52	.64	.57	.51	.61	.55	.50	.59	.53	.49	.47
5.0	.61	.52	.45	.60	.51	.45	.57	.50	.44	.55	.48	.43	.53	.47	.42	.40
6.0	.55	.46	.39	.54	.45	.39	.52	.44	.38	.50	.43	.38	.48	.42	.37	.35
7.0	.50	.41	.34	.49	.40	.34	.47	.39	.34	.45	.38	.33	.43	.37	.33	.31
8.0	.45	.36	.31	.44	.36	.30	.43	.35	.30	.41	.34	.30	.40	.34	.29	.27
9.0	.41	.33	.27	.41	.33	.27	.39	.32	.27	.38	.31	.27	.37	.31	.26	.24
10.0	.38	.30	.25	.37	.30	.25	.36	.29	.24	.35	.29	.24	.34	.28	.24	.22



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2023-10-12

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.443
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	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	.321	.183	.058	.313	.179	.057	.298	.171	.055	.285	.164	.053	.272	.158	.051		
2.0	.300	.164	.050	.293	.161	.050	.280	.155	.048	.267	.150	.047	.256	.145	.046		
3.0	.276	.147	.044	.270	.145	.044	.258	.140	.043	.247	.135	.042	.237	.131	.041		
4.0	.254	.132	.039	.248	.130	.038	.238	.126	.038	.228	.122	.037	.219	.119	.036		
5.0	.234	.119	.035	.229	.118	.034	.220	.114	.034	.211	.111	.033	.203	.108	.033		
6.0	.217	.109	.031	.212	.107	.031	.204	.104	.030	.196	.102	.030	.188	.099	.029		
7.0	.201	.100	.028	.197	.098	.028	.190	.096	.028	.183	.094	.027	.176	.091	.027		
8.0	.188	.092	.026	.184	.091	.026	.177	.089	.025	.171	.087	.025	.165	.085	.025		
9.0	.176	.085	.024	.172	.084	.024	.166	.082	.023	.160	.080	.023	.155	.079	.023		
10.0	.165	.079	.022	.162	.078	.022	.156	.077	.022	.151	.075	.021	.146	.073	.021		

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	.213	.213	.213	.182	.182	.182	.124	.124	.124	.071	.071	.071	.023	.023	.023	
1.0	.204	.179	.156	.174	.153	.134	.119	.106	.093	.069	.061	.054	.022	.020	.017	
2.0	.196	.155	.120	.168	.133	.104	.115	.092	.072	.066	.054	.042	.021	.017	.014	
3.0	.189	.137	.096	.162	.119	.084	.111	.082	.059	.064	.048	.035	.021	.016	.011	
4.0	.181	.124	.081	.155	.107	.070	.107	.075	.049	.062	.044	.029	.020	.014	.010	
5.0	.174	.114	.070	.149	.099	.061	.103	.069	.043	.060	.040	.025	.019	.013	.008	
6.0	.167	.106	.062	.143	.092	.054	.099	.064	.038	.057	.038	.023	.018	.012	.007	
7.0	.160	.099	.056	.137	.086	.049	.095	.060	.035	.055	.035	.021	.018	.012	.007	
8.0	.153	.093	.052	.132	.081	.045	.091	.057	.032	.053	.033	.019	.017	.011	.006	
9.0	.147	.088	.048	.127	.077	.042	.088	.054	.030	.051	.032	.018	.017	.010	.006	
10.0	.141	.084	.046	.122	.073	.040	.085	.051	.028	.049	.030	.017	.016	.010	.006	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-10-12

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	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	29.3	30.8	29.6	31.1	31.4	29.4	30.9	29.7	31.1	31.4
3H	31.0	32.4	31.3	32.6	32.9	31.0	32.4	31.3	32.7	33.0
4H	31.6	32.9	32.0	33.2	33.6	31.6	32.9	32.0	33.2	33.6
6H	32.1	33.3	32.4	33.6	34.0	32.0	33.3	32.4	33.6	33.9
8H	32.2	33.4	32.6	33.8	34.1	32.1	33.3	32.5	33.7	34.0
12H	32.3	33.5	32.7	33.8	34.2	32.2	33.3	32.6	33.7	34.1
4H 2H	30.0	31.3	30.3	31.6	31.9	30.0	31.3	30.4	31.6	32.0
3H	31.8	32.9	32.2	33.3	33.7	31.8	32.9	32.2	33.3	33.7
4H	32.5	33.6	33.0	34.0	34.4	32.5	33.6	33.0	34.0	34.4
6H	33.1	34.1	33.6	34.5	34.9	33.1	34.0	33.5	34.4	34.8
8H	33.3	34.2	33.8	34.6	35.1	33.2	34.1	33.7	34.5	35.0
12H	33.5	34.3	34.0	34.7	35.2	33.3	34.1	33.8	34.6	35.0
8H 4H	32.8	33.7	33.3	34.1	34.6	32.8	33.7	33.3	34.1	34.6
6H	33.6	34.3	34.1	34.8	35.2	33.5	34.2	34.0	34.7	35.2
8H	33.9	34.5	34.4	35.0	35.5	33.7	34.4	34.2	34.9	35.4
12H	34.1	34.7	34.6	35.2	35.7	33.9	34.5	34.4	35.0	35.5
12H 4H	32.8	33.6	33.3	34.1	34.5	32.8	33.6	33.3	34.1	34.5
6H	33.6	34.3	34.1	34.7	35.3	33.5	34.2	34.1	34.7	35.2
8H	34.0	34.5	34.5	35.0	35.6	33.8	34.4	34.4	34.9	35.4
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 3823 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 4.7$)
Area: 0.01 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-10-12

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		

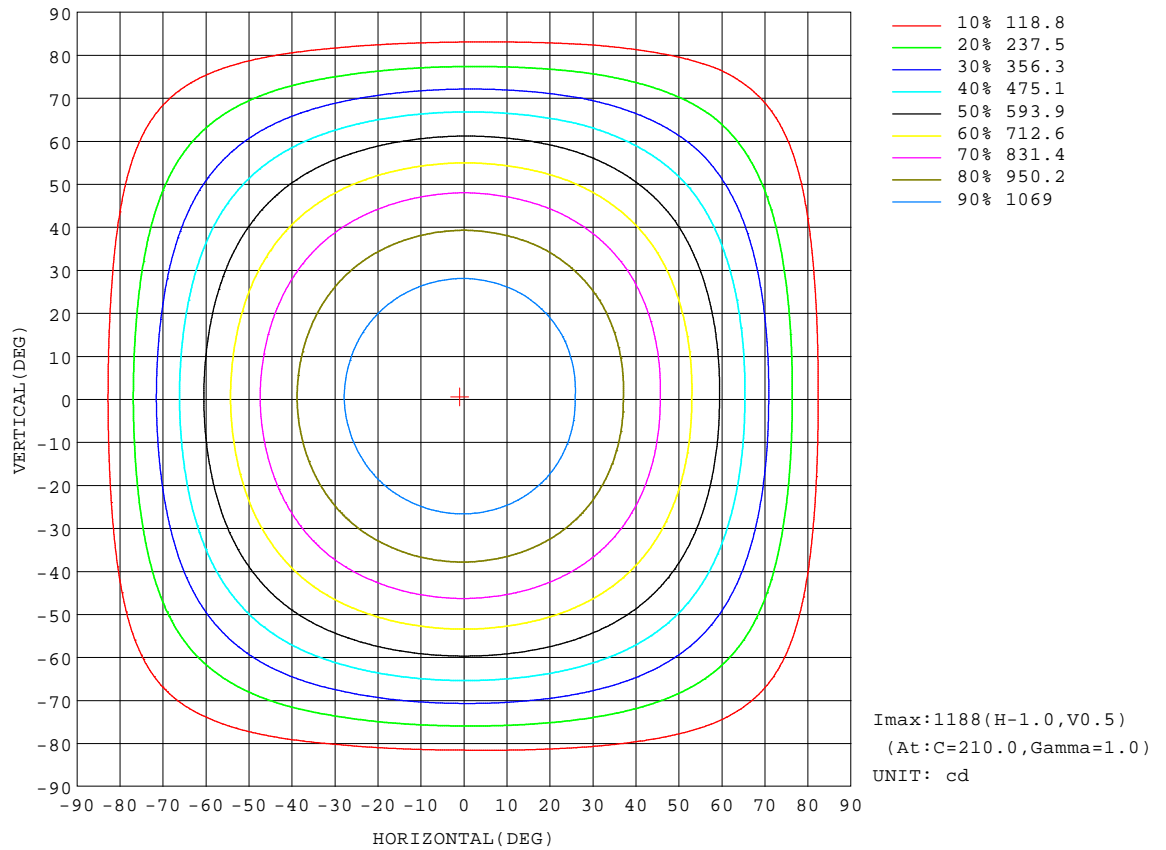
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	43	36	54	43	36	53	42	36	29
0.80	65	53	46	64	53	45	62	52	45	38
1.00	74	62	55	72	61	54	70	63	54	46
1.25	81	70	62	79	69	62	76	67	61	53
1.50	86	76	68	84	75	68	81	72	66	58
2.00	93	84	77	91	83	76	87	80	75	66
2.50	97	89	83	95	87	81	90	84	79	70
3.00	101	93	88	98	92	86	94	88	84	74
4.00	105	99	94	102	97	92	97	93	89	79
5.00	107	102	98	105	100	96	100	96	93	82
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:2023-10-12

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		

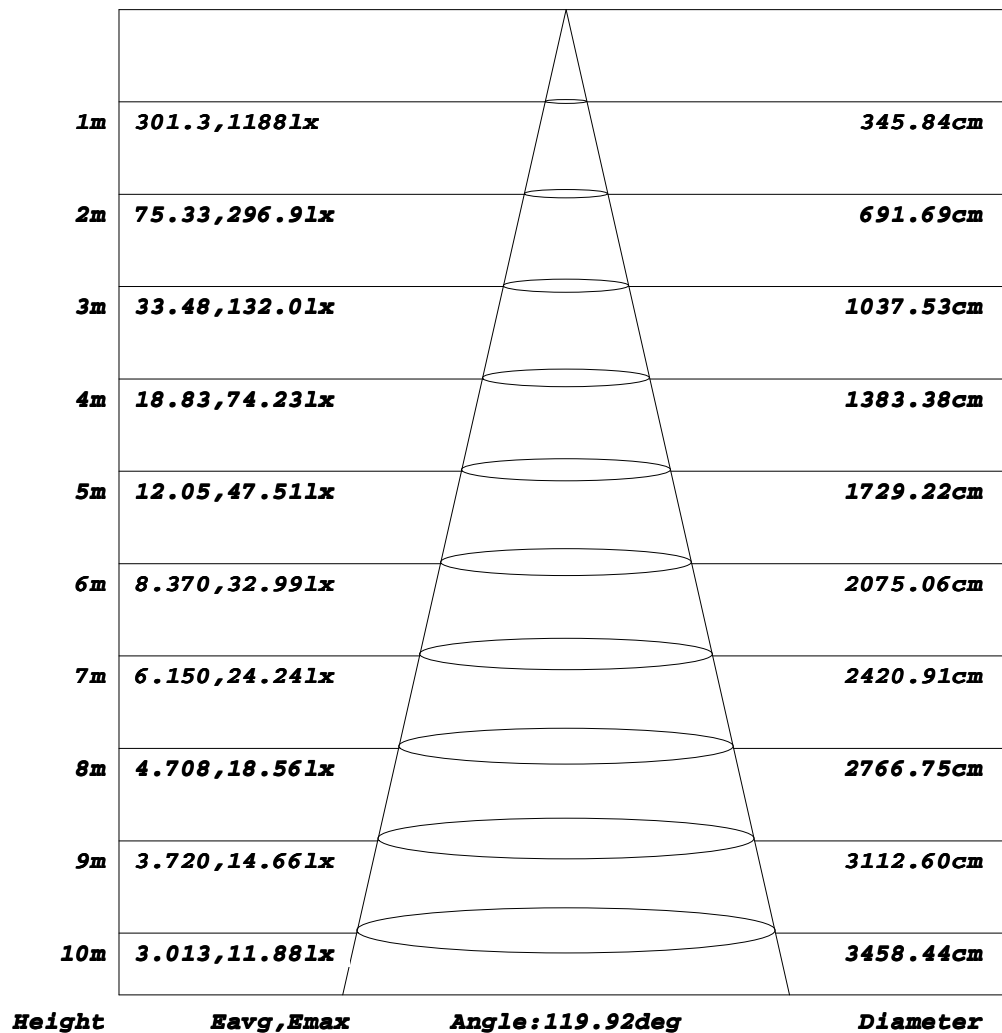


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-10-12

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		

Flux out:2840 lm


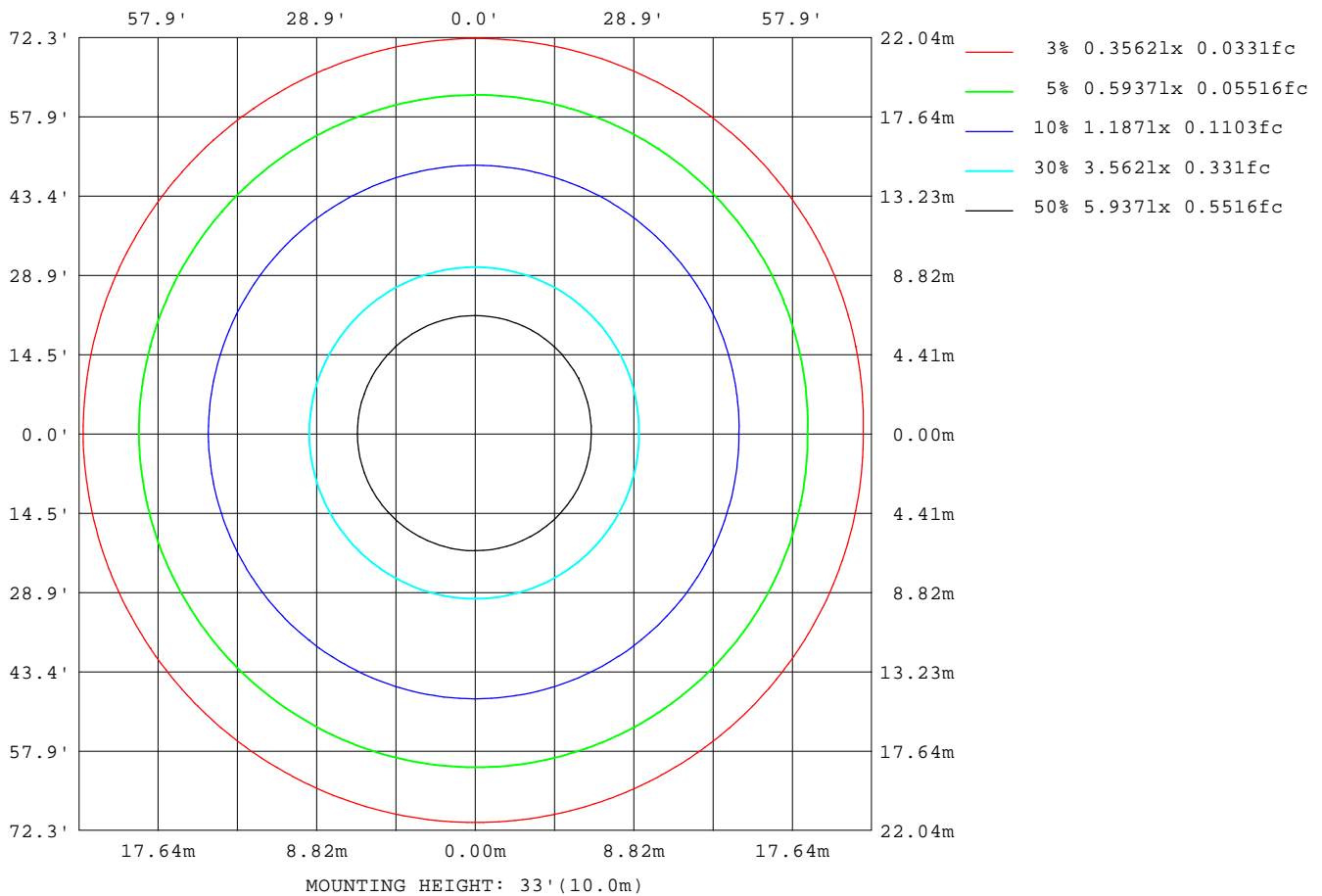
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-10-12

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

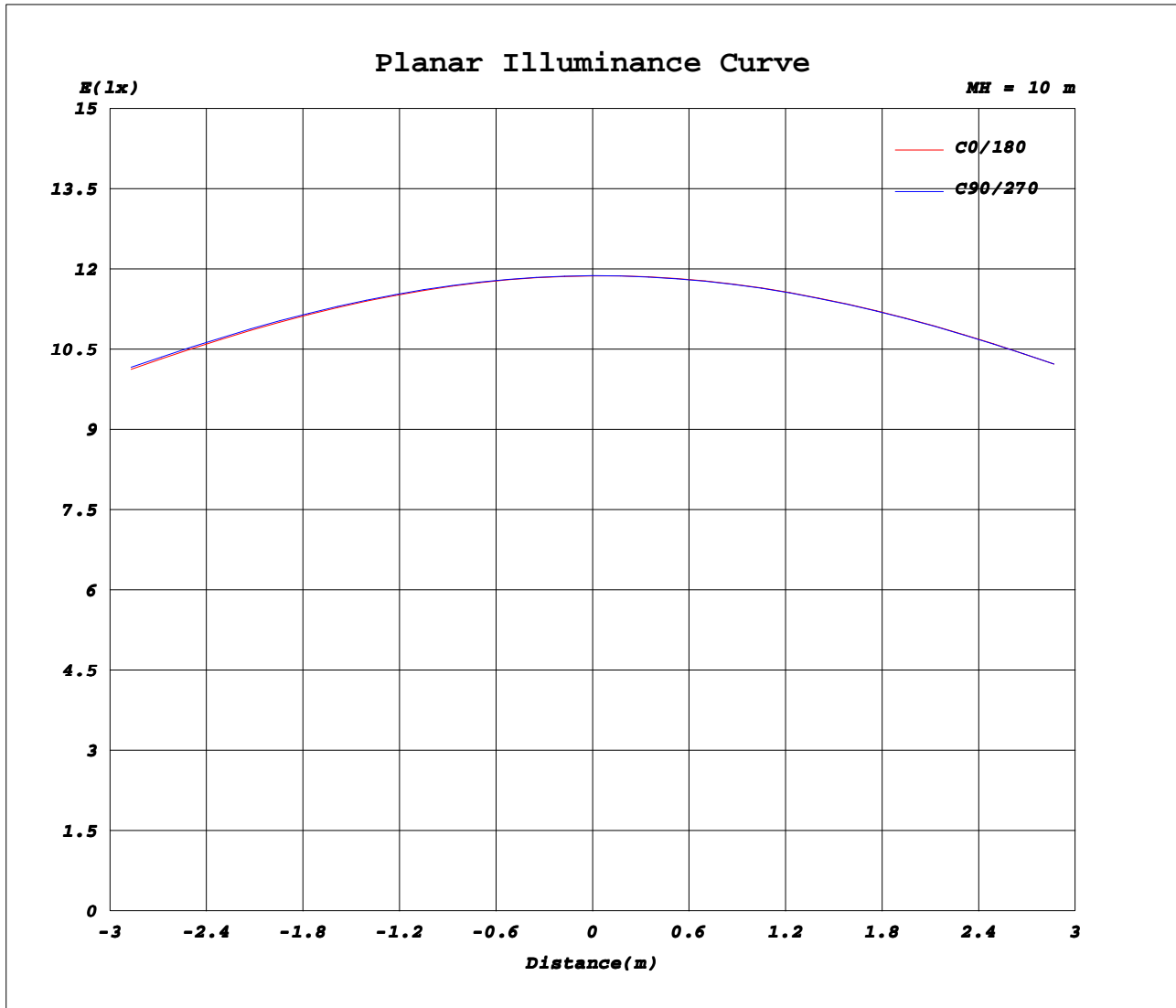
Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-10-12

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.443
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: 2023-10-12

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.000V I:1.2690A P:30.400W PF:1.0000 Freq:0Hz		
Lamp Flux:3823.39x1 lm		
Name: 24V-CCT-90CRI-4000K	Type: LED	
MFR.:		

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	1187	1188	1188	1188	1187	1187	1187	1188	1188	1188	1187	1187						
5	1181	1182	1182	1183	1183	1184	1185	1185	1185	1185	1184	1183						
10	1168	1168	1169	1170	1170	1172	1175	1174	1174	1174	1172	1170						
15	1145	1147	1148	1149	1150	1153	1156	1156	1156	1156	1154	1150						
20	1115	1117	1118	1120	1121	1124	1129	1129	1129	1129	1127	1122						
25	1076	1079	1081	1083	1084	1088	1093	1093	1093	1094	1091	1085						
30	1030	1033	1036	1038	1039	1043	1050	1050	1051	1052	1048	1041						
35	975	979	982	984	985	990	996	997	999	1001	997	988						
40	913	917	920	923	923	928	935	936	938	941	937	928						
45	841	846	849	851	851	857	866	866	869	874	870	859						
50	763	767	770	773	772	778	789	789	792	799	794	782						
55	677	680	683	685	684	689	700	701	705	711	709	697						
60	583	586	588	588	587	593	604	606	610	617	616	605						
65	482	484	485	484	482	488	500	503	507	513	515	506						
70	376	377	376	373	371	378	390	393	397	403	408	400						
75	266	267	264	259	258	265	279	280	283	290	296	290						
80	161	163	157	149	149	158	172	171	172	179	185	180						
85	76.3	76.2	69.0	59.5	60.7	70.4	82.7	81.3	80.3	83.4	89.5	88.4						
90	26.4	26.8	20.0	11.0	15.2	23.1	29.6	29.1	22.9	16.6	26.0	31.4						
95	12.1	12.6	11.1	9.05	10.00	12.1	13.9	13.9	12.3	10.4	12.4	13.5						
100	11.0	11.0	10.8	10.5	10.6	11.2	12.0	12.3	12.0	11.6	11.9	11.9						
105	11.9	11.8	11.9	12.0	12.0	12.3	12.7	12.9	13.0	12.9	12.8	12.5						
110	13.3	13.3	13.4	13.5	13.6	13.8	14.0	14.3	14.4	14.3	14.2	13.9						
115	14.9	14.8	14.9	15.0	15.1	15.3	15.5	15.8	15.8	15.6	15.5	15.3						
120	16.5	16.3	16.4	16.5	16.7	16.8	16.9	17.3	17.3	17.1	17.0	16.8						
125	18.0	17.8	17.8	17.9	18.2	18.3	18.4	18.8	18.8	18.4	18.3	18.2						
130	19.5	19.3	19.3	19.4	19.8	19.9	19.8	20.2	20.2	19.8	19.7	19.6						
135	20.9	20.7	20.7	20.8	21.2	21.3	21.1	21.5	21.6	21.2	21.1	21.0						
140	22.2	22.0	22.0	22.2	22.6	22.6	22.3	22.8	22.9	22.6	22.4	22.3						
145	23.4	23.3	23.3	23.5	24.0	23.9	23.5	24.0	24.2	23.8	23.7	23.6						
150	24.6	24.5	24.6	24.8	25.3	25.1	24.5	25.1	25.3	25.0	24.9	24.8						
155	25.7	25.7	25.9	26.1	26.5	26.3	25.5	26.1	26.4	26.1	26.0	25.9						
160	26.9	26.9	27.0	27.3	27.6	27.3	26.6	27.1	27.4	27.2	27.1	27.0						
165	28.0	28.0	28.1	28.3	28.7	28.3	27.6	28.0	28.3	28.2	28.2	28.1						
170	28.8	28.9	29.1	29.2	29.5	29.2	28.5	28.8	29.1	29.0	29.1	29.1						
175	29.5	29.7	29.8	29.9	30.2	29.9	29.2	29.5	29.7	29.7	29.8	29.8						
180	29.7	30.0	30.1	30.1	30.3	30.2	29.7	29.9	30.1	30.1	30.3	30.3						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-10-12

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.443
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks: