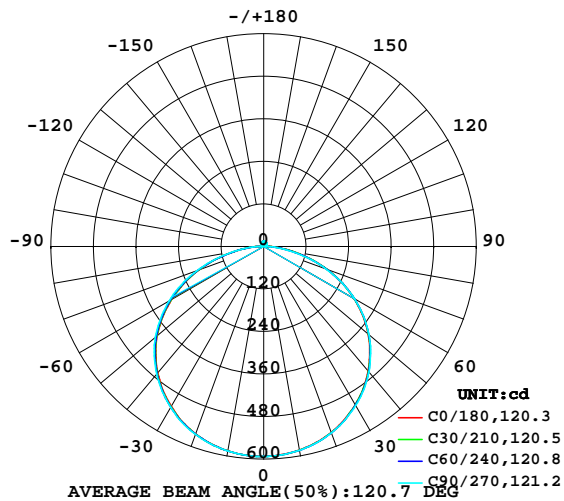


LUMINAIRE PHOTOMETRIC TEST REPORT

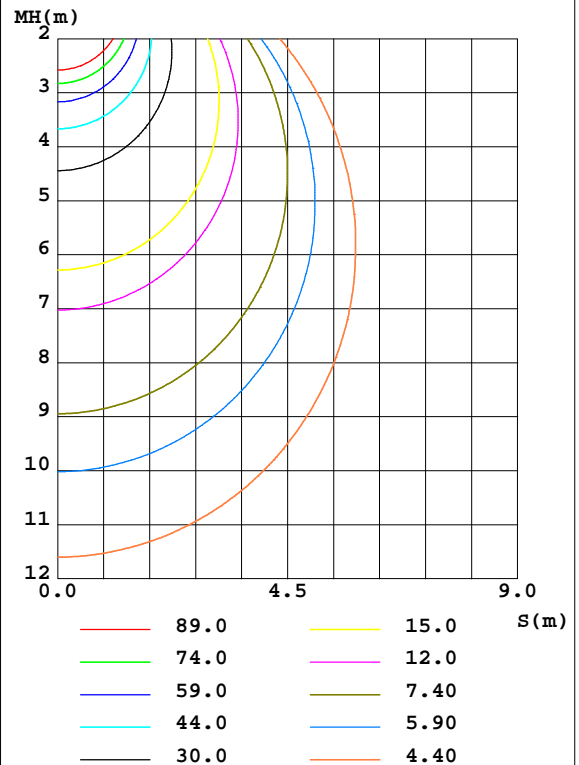
Test:U:24.000V I:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.31x1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 126.71 lm/W			
MODEL		I _{max} (cd)	592.7	S/MH(C0/180)	1.31
NOMINAL POWER(W)	15.1	LOR(%)	100.0	S/MH(C90/270)	1.32
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1913.3	η UP,DN(C0-180)	1.4,47.9
NOMINAL FLUX(lm)	1913.31	CIE CLASS	DIRECT	η UP,DN(C180-360)	1.5,49.1
LAMPS INSIDE	1	η up(%)	2.9	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	97.1	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:

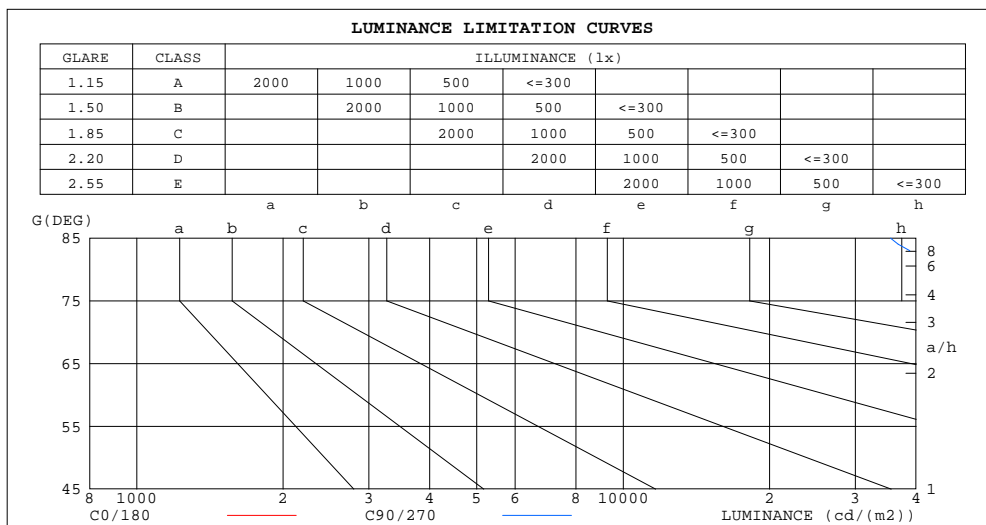
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	583.1	583.6	583.7	584.3	585.4	585.4	586.0	585.1	0- 10	56.18	56.18	2.94,2.94
20	558.1	559.1	559.6	560.3	562.6	563.0	563.9	562.5	10- 20	162.4	218.6	11.4,11.4
30	516.4	517.1	518.8	518.5	521.2	523.4	524.5	523.3	20- 30	250.4	469.0	24.5,24.5
40	459.0	460.3	462.2	461.5	465.3	467.6	470.0	468.2	30- 40	309.4	778.5	40.7,40.7
50	384.4	386.2	387.8	387.0	392.6	394.7	399.3	396.5	40- 50	331.4	1110	58,58
60	294.6	296.0	296.2	294.9	300.6	303.3	308.2	307.6	50- 60	310.4	1420	74.2,74.2
70	189.7	190.7	188.1	188.1	194.8	196.2	200.8	202.8	60- 70	245.6	1666	87.1,87.1
80	82.52	81.66	76.03	78.30	85.97	84.34	87.64	90.86	70- 80	145.6	1811	94.7,94.7
90	13.86	11.58	5.333	9.740	15.13	12.54	7.978	14.36	80- 90	45.40	1857	97.1,97.1
100	5.440	5.311	5.216	5.426	6.027	5.919	5.757	5.763	90-100	7.258	1864	97.4,97.4
110	6.634	6.639	6.731	6.834	7.006	7.148	7.107	6.999	100-110	6.553	1871	97.8,97.8
120	8.196	8.140	8.220	8.370	8.455	8.637	8.517	8.405	110-120	7.567	1878	98.2,98.2
130	9.715	9.587	9.681	9.896	9.863	10.09	9.908	9.812	120-130	8.155	1886	98.6,98.6
140	11.04	10.96	11.05	11.31	11.14	11.42	11.26	11.16	130-140	8.129	1895	99,99
150	12.24	12.23	12.37	12.59	12.24	12.59	12.48	12.38	140-150	7.400	1902	99.4,99.4
160	13.42	13.45	13.60	13.73	13.27	13.59	13.58	13.50	150-160	5.991	1908	99.7,99.7
170	14.39	14.47	14.57	14.65	14.23	14.45	14.48	14.53	160-170	3.964	1912	99.9,99.9
180	14.83	14.97	15.02	15.10	14.81	14.96	15.01	15.12	170-180	1.404	1913	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:0.6290A P:15.100W PF:1.0000 Freq:0Hz Lamp Flux:1913.3lx1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	45268	35437
80	47521	43784
75	52201	50745
70	55468	54988
65	57740	57760
60	58929	59239
55	59558	59971
50	59804	60338
45	59825	60310

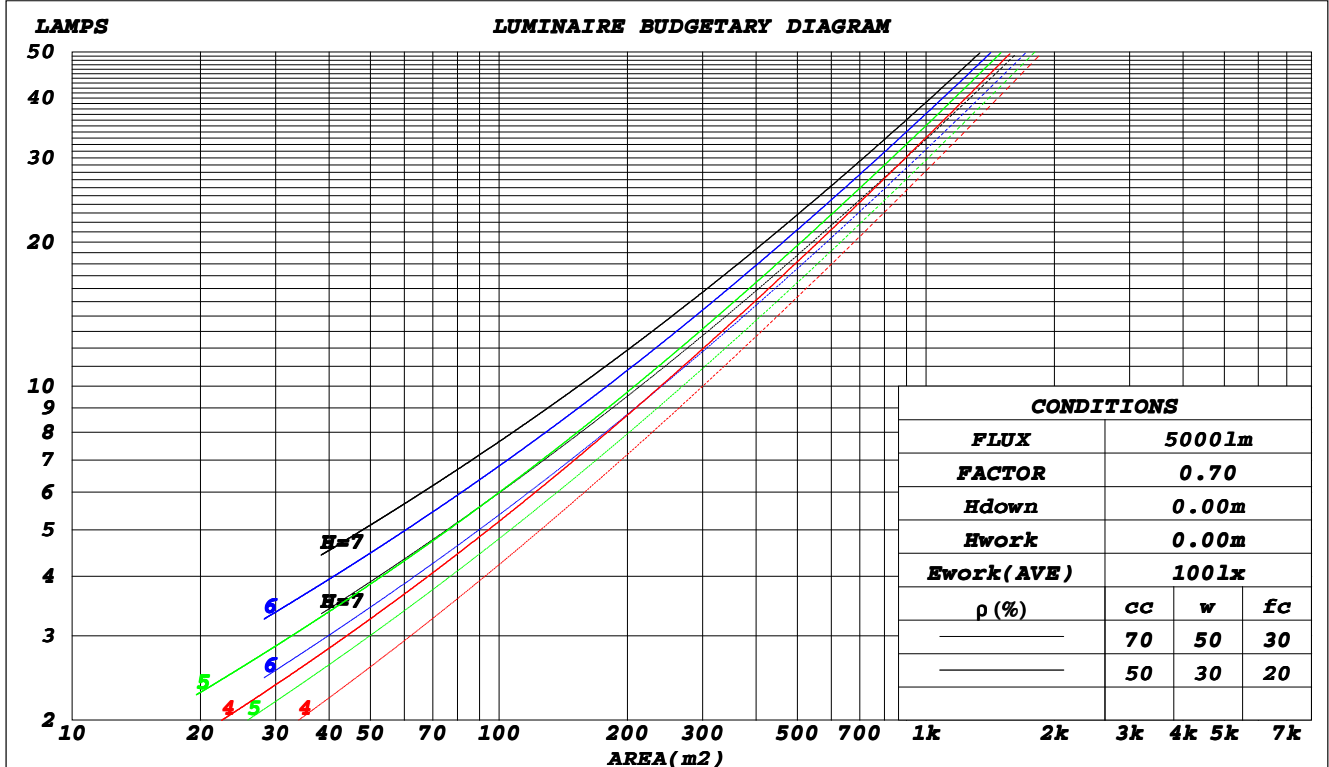
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2023-10-12

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:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.31x1 lm		
Name: 24V-CCT-90CRI-5000K	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	.72	.79	.74	.70	.75	.72	.68	.66
3.0	.78	.69	.62	.76	.68	.62	.72	.66	.60	.69	.64	.59	.66	.62	.57	.55
4.0	.68	.59	.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	.51	.44	.38	.50	.43	.38	.48	.42	.37	.35
7.0	.49	.41	.34	.49	.40	.34	.47	.39	.34	.45	.38	.33	.43	.37	.33	.31
8.0	.45	.36	.30	.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:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.31x1 lm		
Name: 24V-CCT-90CRI-5000K	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	.322	.183	.058	.314	.179	.057	.299	.171	.055	.285	.164	.053	.272	.158	.051		
2.0	.300	.165	.050	.293	.161	.050	.280	.156	.048	.268	.150	.047	.256	.145	.046		
3.0	.276	.147	.044	.270	.145	.044	.258	.140	.043	.247	.136	.042	.237	.131	.041		
4.0	.254	.132	.039	.249	.130	.038	.238	.126	.038	.228	.123	.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	.105	.030	.196	.102	.030	.189	.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	.173	.084	.024	.166	.082	.023	.160	.080	.023	.155	.079	.023		
10.0	.165	.079	.022	.162	.078	.022	.157	.077	.022	.151	.075	.021	.146	.074	.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	.118	.083	.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	.091	.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	.076	.042	.088	.054	.030	.051	.032	.018	.017	.010	.006	
10.0	.141	.084	.046	.122	.073	.040	.084	.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:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.3lx1 lm		
Name: 24V-CCT-90CRI-5000K	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	27.0	28.5	27.3	28.7	29.0	27.0	28.5	27.3	28.8	29.0
3H	28.6	30.0	29.0	30.3	30.6	28.6	30.0	29.0	30.3	30.6
4H	29.3	30.6	29.6	30.9	31.2	29.2	30.6	29.6	30.9	31.2
6H	29.7	31.0	30.1	31.3	31.7	29.7	30.9	30.0	31.2	31.6
8H	29.9	31.1	30.3	31.4	31.8	29.8	31.0	30.2	31.3	31.7
12H	30.0	31.2	30.4	31.5	31.9	29.8	31.0	30.2	31.4	31.7
4H 2H	27.6	29.0	28.0	29.3	29.6	27.6	29.0	28.0	29.3	29.6
3H	29.4	30.6	29.8	30.9	31.3	29.4	30.6	29.8	30.9	31.3
4H	30.2	31.3	30.6	31.7	32.1	30.2	31.2	30.6	31.6	32.0
6H	30.8	31.8	31.3	32.2	32.6	30.7	31.7	31.2	32.1	32.5
8H	31.0	31.9	31.5	32.3	32.8	30.9	31.8	31.4	32.2	32.7
12H	31.2	32.0	31.7	32.4	32.9	31.0	31.8	31.5	32.3	32.7
8H 4H	30.5	31.4	31.0	31.8	32.2	30.5	31.3	30.9	31.8	32.2
6H	31.2	32.0	31.7	32.4	32.9	31.2	31.9	31.7	32.4	32.8
8H	31.6	32.2	32.1	32.7	33.2	31.4	32.1	31.9	32.5	33.1
12H	31.8	32.4	32.3	32.9	33.4	31.6	32.2	32.1	32.7	33.2
12H 4H	30.5	31.3	31.0	31.8	32.2	30.5	31.3	31.0	31.7	32.2
6H	31.3	32.0	31.8	32.4	32.9	31.2	31.9	31.7	32.4	32.9
8H	31.7	32.2	32.2	32.7	33.3	31.5	32.1	32.0	32.6	33.1
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	+ 0.1 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 1913 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 2.3$)
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:0.6290A P:15.100W PF:1.0000 Freq:0Hz Lamp Flux:1913.3lx1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		

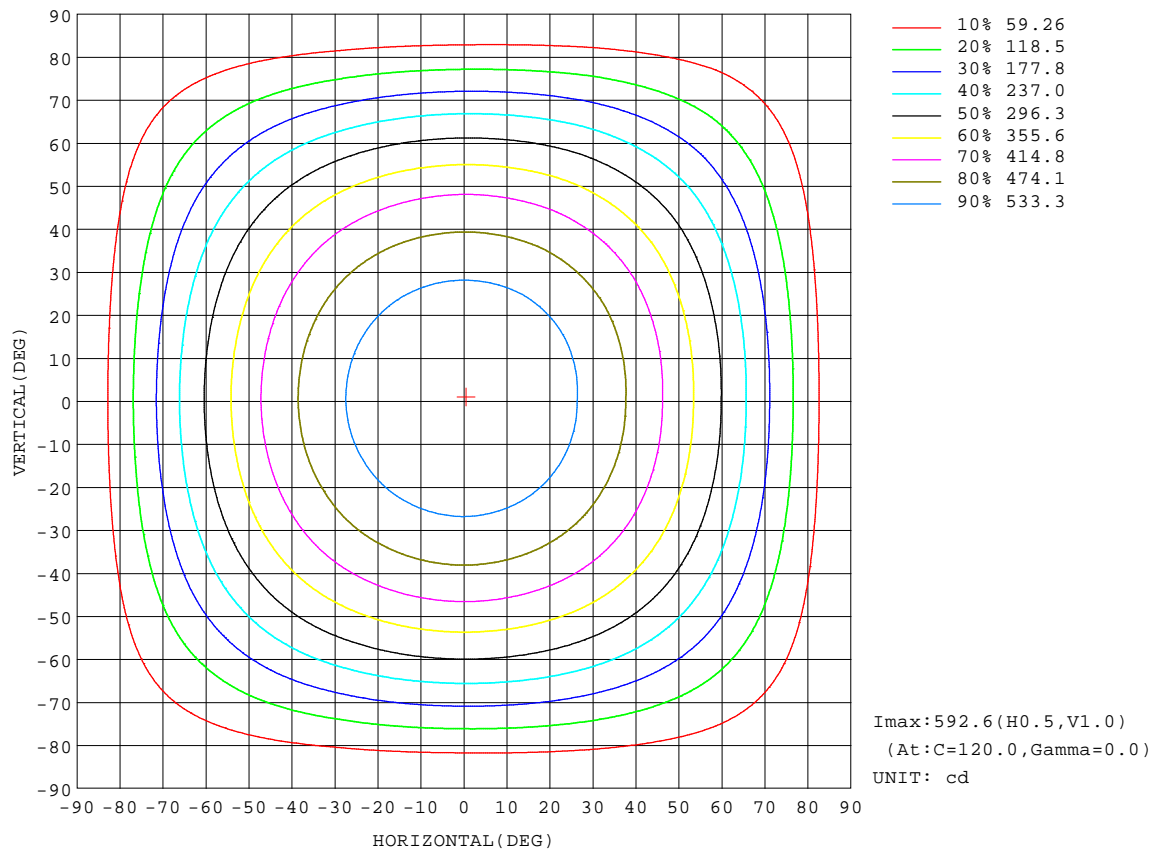
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	43	36	54	43	36	53	42	36	29
0.80	65	53	46	64	53	45	62	52	45	38
1.00	74	62	55	72	61	54	70	63	53	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	87	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	99	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:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.3lx1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		

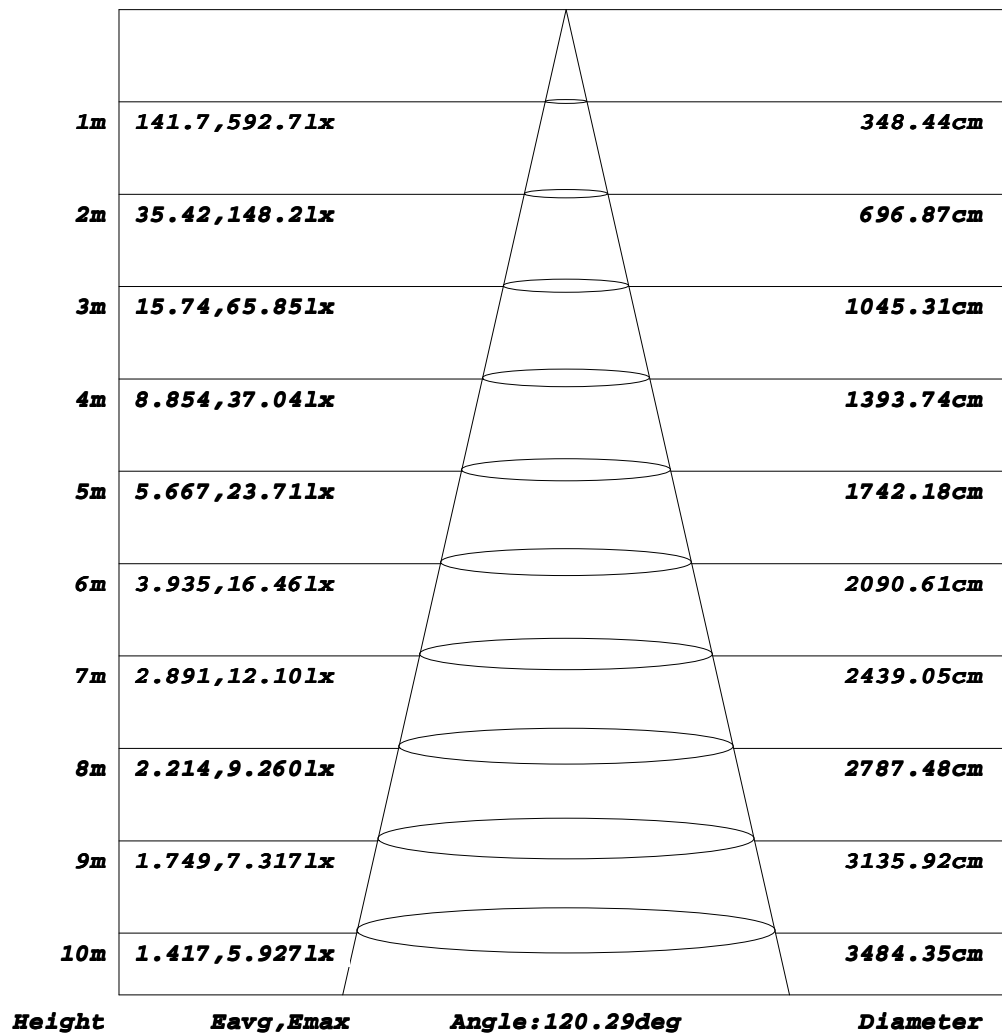


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-10-12

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:0.6290A P:15.100W PF:1.0000 Freq:0Hz Lamp Flux:1913.31x1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		

Flux out:1448 lm


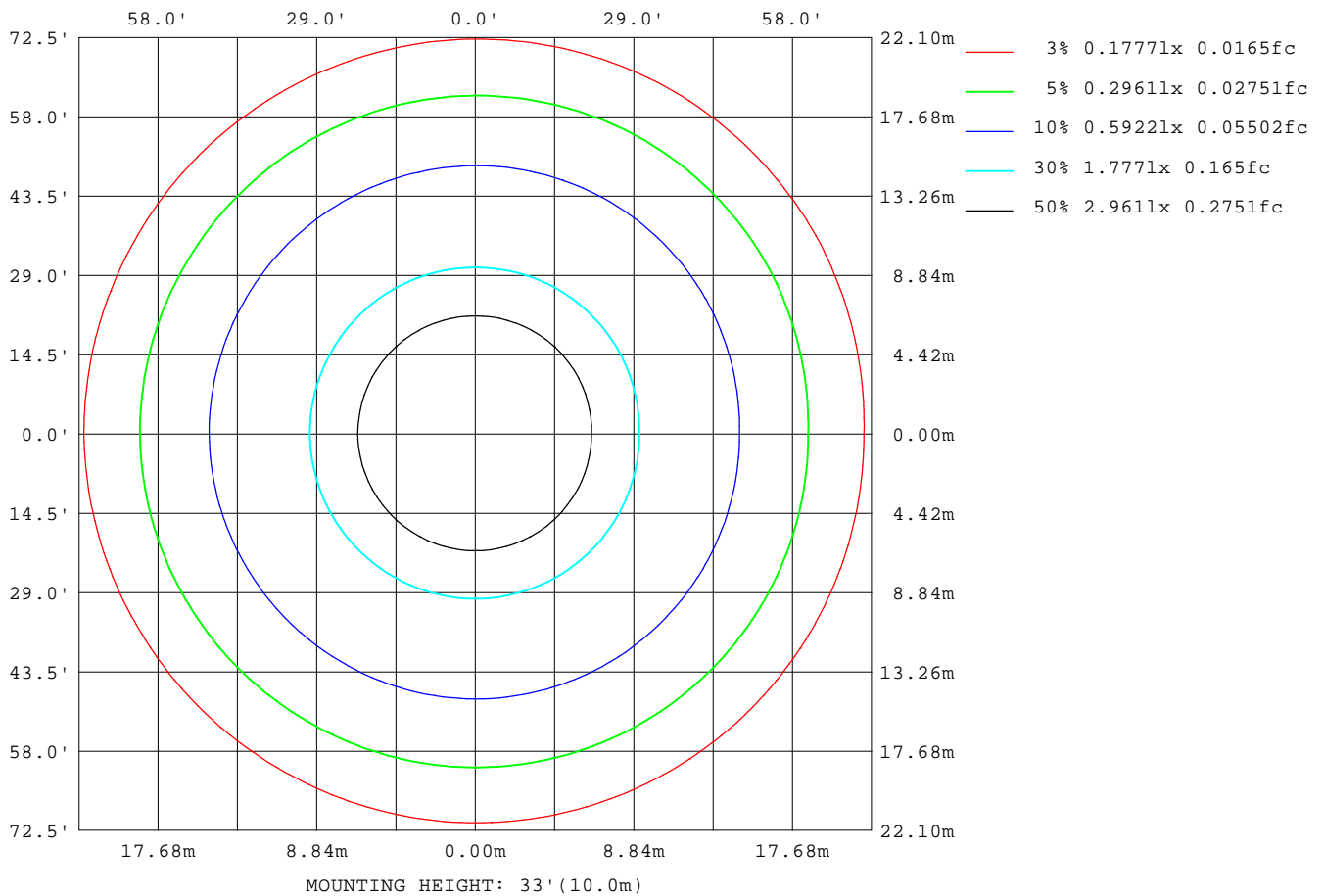
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

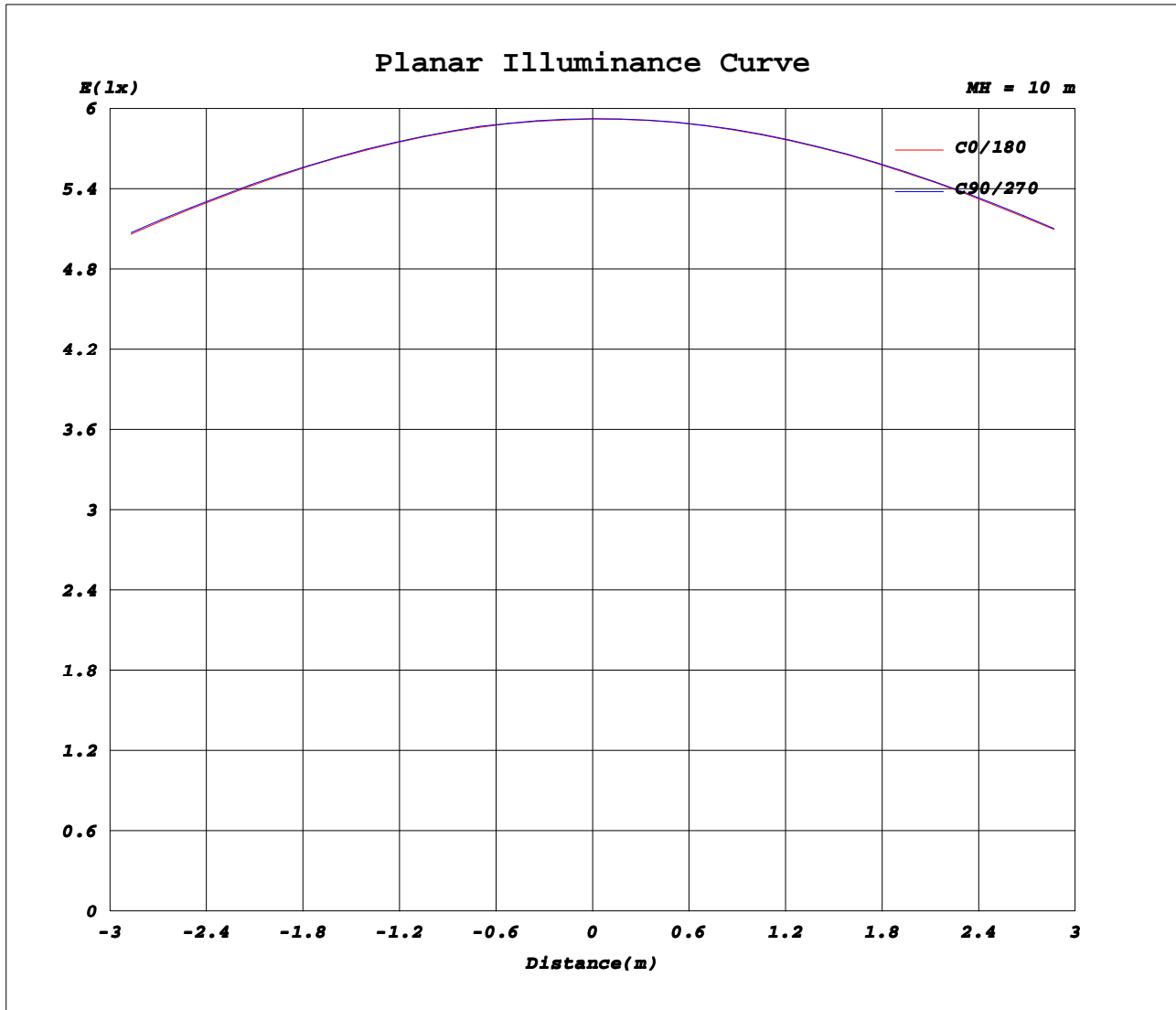
Test:U:24.000V I:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.3lx1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		



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:0.6290A P:15.100W PF:1.0000 Freq:0Hz		
Lamp Flux:1913.31x1 lm		
Name: 24V-CCT-90CRI-5000K	Type: LED	
MFR.:		

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	592	592	592	593	593	593	592	592	592	593	593	593							
5	590	590	590	590	590	591	591	591	591	591	591	591							
10	583	583	584	584	584	585	585	585	586	586	586	585							
15	573	573	574	574	574	575	576	576	577	577	577	575							
20	558	559	559	560	560	561	563	563	563	564	563	562							
25	539	541	541	542	542	543	545	545	546	547	546	544							
30	516	517	518	519	518	519	521	523	524	524	525	522							
35	490	490	491	493	492	493	496	497	498	499	499	496							
40	459	460	461	462	461	462	465	467	468	470	470	467							
45	423	424	426	426	426	427	430	432	434	437	436	432							
50	384	386	387	388	386	388	393	394	396	399	399	394							
55	342	343	344	344	342	344	348	350	352	356	356	352							
60	295	296	296	296	294	296	301	302	305	308	310	306							
65	244	245	245	244	242	244	249	251	253	256	259	255							
70	190	191	190	188	187	189	195	195	197	201	204	201							
75	135	136	134	131	130	133	139	139	140	143	147	146							
80	82.5	83.1	80.2	76.0	76.2	80.4	86.0	84.3	84.3	87.6	91.4	90.4							
85	39.5	39.1	35.5	30.9	31.9	36.5	41.8	40.0	38.9	40.6	44.0	44.2							
90	13.9	13.4	9.74	5.33	7.64	11.8	15.1	14.2	10.9	7.98	12.9	15.9							
95	6.09	5.96	5.29	4.51	4.88	5.96	7.09	6.74	5.85	5.16	6.01	6.52							
100	5.44	5.35	5.27	5.22	5.27	5.59	6.03	5.99	5.85	5.76	5.80	5.73							
105	5.93	5.87	5.90	5.98	6.00	6.14	6.37	6.44	6.45	6.42	6.39	6.24							
110	6.63	6.62	6.66	6.73	6.79	6.88	7.01	7.13	7.17	7.11	7.07	6.93							
115	7.42	7.38	7.41	7.48	7.55	7.64	7.74	7.88	7.90	7.80	7.75	7.64							
120	8.20	8.13	8.15	8.22	8.33	8.41	8.45	8.62	8.65	8.52	8.45	8.36							
125	8.96	8.86	8.86	8.95	9.08	9.16	9.19	9.37	9.39	9.22	9.16	9.08							
130	9.71	9.59	9.58	9.68	9.87	9.92	9.86	10.1	10.1	9.91	9.84	9.78							
135	10.4	10.3	10.3	10.4	10.6	10.6	10.5	10.7	10.8	10.6	10.5	10.5							
140	11.0	11.0	11.0	11.0	11.3	11.3	11.1	11.4	11.5	11.3	11.2	11.1							
145	11.7	11.6	11.6	11.7	12.0	11.9	11.7	12.0	12.1	11.9	11.8	11.8							
150	12.2	12.2	12.2	12.4	12.6	12.5	12.2	12.5	12.6	12.5	12.4	12.3							
155	12.8	12.8	12.9	13.0	13.2	13.1	12.7	13.0	13.2	13.0	13.0	12.9							
160	13.4	13.4	13.5	13.6	13.8	13.7	13.3	13.5	13.7	13.6	13.5	13.5							
165	13.9	14.0	14.0	14.1	14.3	14.1	13.8	14.0	14.1	14.1	14.1	14.0							
170	14.4	14.4	14.5	14.6	14.7	14.6	14.2	14.4	14.5	14.5	14.5	14.5							
175	14.7	14.8	14.9	14.9	15.1	14.9	14.6	14.7	14.8	14.8	14.9	14.9							
180	14.8	14.9	15.0	15.0	15.1	15.1	14.8	14.9	15.0	15.0	15.1	15.1							

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: