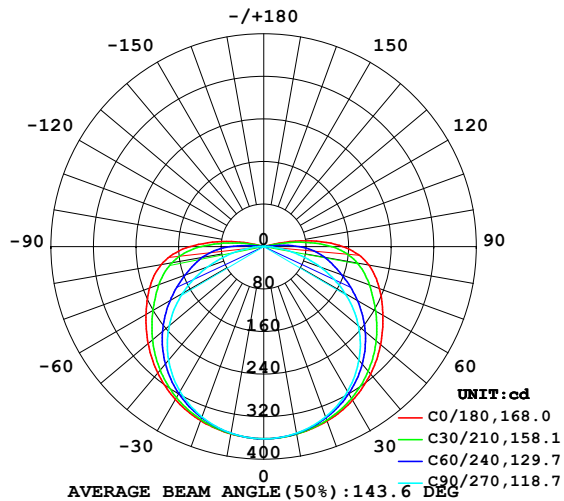


LUMINAIRE PHOTOMETRIC TEST REPORT

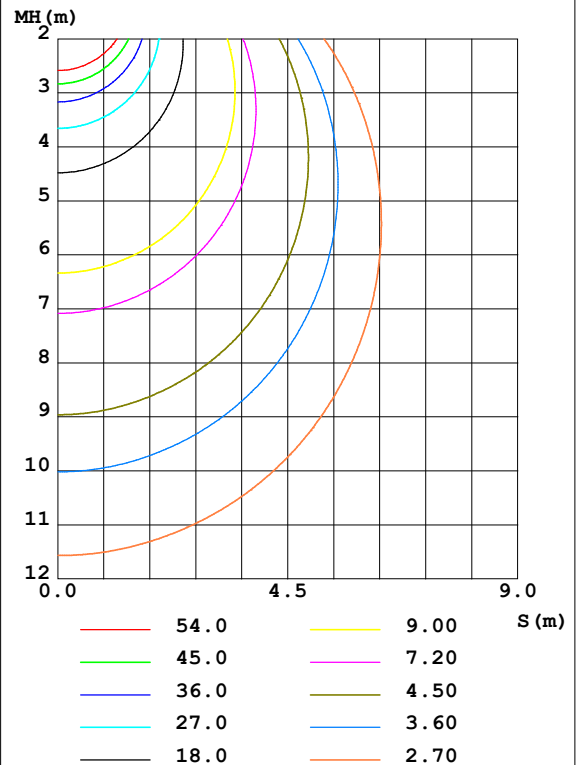
Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.59 lm/W			
MODEL		I _{max} (cd)	361.8	S/MH (C0/180)	1.38
NOMINAL POWER (W)	14.4	LOR (%)	100.0	S/MH (C90/270)	1.30
RATED VOLTAGE (V)	24	TOTAL FLUX (lm)	1477.3	η UP, DN (C0-180)	2.5, 47.6
NOMINAL FLUX (lm)	1477.32	CIE CLASS	DIRECT	η UP, DN (C180-360)	2.6, 47.3
LAMPS INSIDE	1	η up (%)	5.1	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	24	η down (%)	94.9	CIBSE SHR MAX	1.55

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: 2024-12-04

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=0.7125]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	357.9	357.3	356.2	356.9	357.5	356.8	356.1	357.8	0- 10	34.30	34.30	2.32,2.32
20	349.0	345.0	340.7	344.1	348.1	344.2	340.6	345.8	10- 20	99.46	133.8	9.05,9.05
30	333.9	325.0	314.9	323.4	332.2	323.7	314.8	326.0	20- 30	154.8	288.6	19.5,19.5
40	312.8	297.2	278.8	295.1	310.3	295.5	278.6	298.6	30- 40	194.9	483.5	32.7,32.7
50	286.9	262.7	232.7	260.1	283.8	260.8	232.3	264.3	40- 50	215.7	699.2	47.3,47.3
60	258.8	223.5	177.0	221.0	255.7	221.9	176.5	222.3	50- 60	215.8	915.0	61.9,61.9
70	231.6	184.2	113.4	182.2	228.7	183.7	112.8	181.2	60- 70	198.0	1113	75.3,75.3
80	200.7	147.6	48.32	144.9	195.8	146.3	47.31	136.8	70- 80	166.5	1280	86.6,86.6
90	149.1	97.31	3.748	90.92	138.8	91.02	3.493	88.30	80- 90	122.8	1402	94.9,94.9
100	60.81	21.08	0.9329	19.24	54.02	19.01	2.020	22.64	90-100	59.70	1462	99,99
110	1.448	1.235	0.8662	1.183	2.705	2.212	1.880	2.404	100-110	8.489	1471	99.5,99.5
120	1.267	1.127	0.9238	1.137	2.260	2.053	1.840	2.241	110-120	1.660	1472	99.7,99.7
130	1.183	1.064	0.9731	1.138	2.046	1.939	1.860	2.074	120-130	1.408	1474	99.7,99.7
140	1.320	1.186	1.108	1.307	2.014	1.959	1.889	2.155	130-140	1.218	1475	99.8,99.8
150	1.408	1.327	1.241	1.432	2.037	1.982	1.922	2.102	140-150	1.043	1476	99.9,99.9
160	1.549	1.475	1.415	1.576	2.024	1.975	1.920	2.059	150-160	0.7965	1477	100,100
170	1.686	1.650	1.591	1.743	1.937	1.916	1.854	1.976	160-170	0.5050	1477	100,100
180	1.818	1.777	1.721	1.884	1.807	1.795	1.737	1.866	170-180	0.1724	1477	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 590.05 lm

%lum = 39.9%

%lamp = 39.9%

Conical surface Flux(120deg): 914.99 lm

%lum = 61.9%

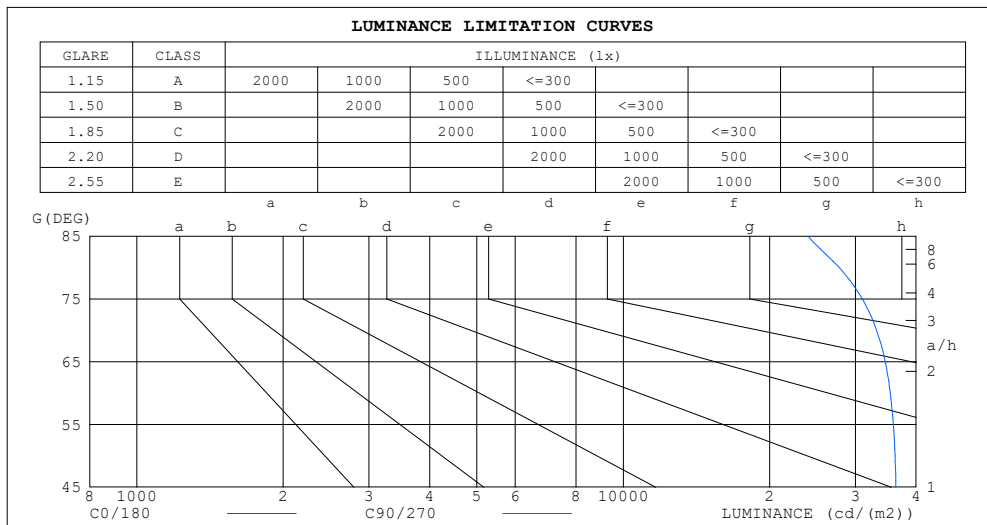
%lamp = 61.9%

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2024-12-04

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=0.7125]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	205267	23996
80	115599	27825
75	83955	31027
70	67717	33165
65	58009	34562
60	51761	35398
55	47579	35915
50	44638	36204
45	42469	36343

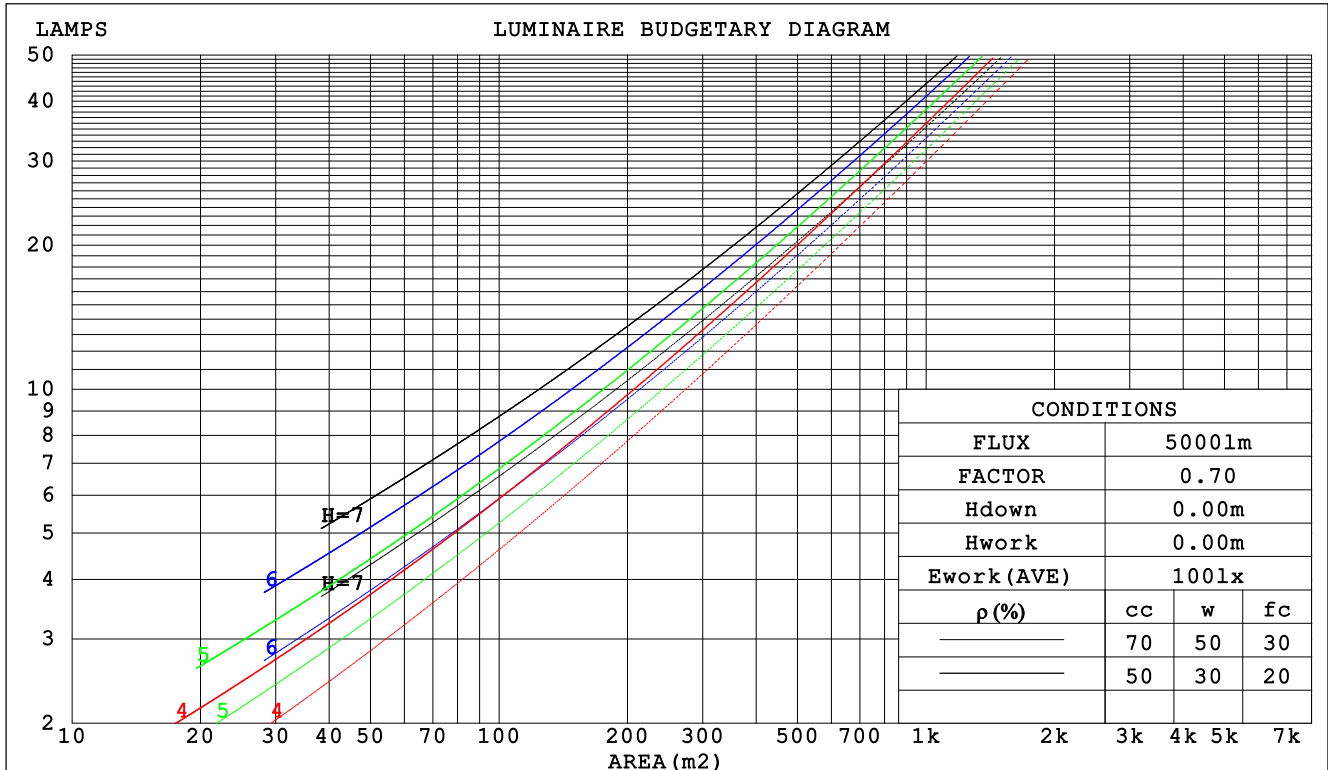
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	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	1.08	1.08	1.08	1.03	1.03	1.03	.97	.97	.97	.95
1.0	.98	.92	.87	.95	.90	.85	.90	.85	.81	.85	.81	.78	.80	.77	.75	.72
2.0	.83	.75	.68	.81	.73	.67	.76	.70	.64	.72	.67	.62	.68	.64	.60	.57
3.0	.72	.63	.55	.70	.61	.54	.66	.59	.53	.63	.56	.51	.59	.54	.49	.47
4.0	.63	.53	.46	.61	.52	.45	.58	.50	.44	.55	.48	.43	.52	.46	.42	.39
5.0	.56	.46	.39	.55	.45	.38	.52	.44	.37	.49	.42	.37	.47	.41	.36	.33
6.0	.50	.40	.33	.49	.40	.33	.46	.38	.32	.44	.37	.32	.42	.36	.31	.29
7.0	.45	.36	.29	.44	.35	.29	.42	.34	.28	.40	.33	.28	.38	.32	.27	.25
8.0	.41	.32	.26	.40	.32	.26	.38	.31	.25	.37	.30	.25	.35	.29	.24	.22
9.0	.38	.29	.23	.37	.29	.23	.35	.28	.23	.34	.27	.22	.32	.26	.22	.20
10.0	.35	.26	.21	.34	.26	.21	.33	.25	.20	.31	.25	.20	.30	.24	.20	.18



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks:

WEC AND CCEC

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.404	.230	.073	.395	.226	.072	.379	.217	.069	.364	.210	.067	.349	.203	.065		
2.0	.349	.191	.059	.341	.188	.058	.326	.181	.056	.313	.175	.055	.300	.170	.053		
3.0	.309	.165	.049	.302	.162	.049	.289	.157	.048	.276	.151	.046	.265	.147	.045		
4.0	.277	.144	.042	.271	.142	.042	.259	.137	.041	.248	.133	.040	.238	.129	.039		
5.0	.252	.128	.037	.246	.126	.037	.235	.123	.036	.225	.119	.035	.216	.115	.035		
6.0	.230	.115	.033	.225	.114	.033	.215	.110	.032	.206	.107	.032	.198	.104	.031		
7.0	.212	.105	.030	.207	.103	.029	.199	.100	.029	.191	.098	.028	.183	.095	.028		
8.0	.196	.096	.027	.192	.095	.027	.184	.092	.026	.177	.090	.026	.170	.087	.025		
9.0	.183	.088	.025	.179	.087	.024	.172	.085	.024	.165	.083	.024	.159	.081	.023		
10.0	.171	.082	.023	.167	.081	.023	.161	.079	.022	.155	.077	.022	.149	.075	.022		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.229	.229	.229	.196	.196	.196	.134	.134	.134	.077	.077	.077	.025	.025	.025	
1.0	.226	.194	.166	.193	.167	.143	.132	.115	.099	.076	.066	.057	.024	.021	.019	
2.0	.219	.171	.130	.188	.147	.113	.129	.102	.079	.074	.059	.046	.024	.019	.015	
3.0	.211	.154	.108	.181	.133	.094	.124	.092	.066	.072	.054	.039	.023	.018	.013	
4.0	.203	.141	.094	.175	.122	.081	.120	.085	.057	.069	.050	.034	.022	.016	.011	
5.0	.195	.131	.084	.168	.114	.073	.116	.079	.051	.067	.047	.031	.022	.015	.010	
6.0	.188	.123	.077	.161	.107	.067	.111	.075	.047	.065	.044	.028	.021	.014	.009	
7.0	.180	.116	.071	.155	.101	.062	.107	.071	.044	.062	.042	.026	.020	.014	.009	
8.0	.173	.111	.067	.149	.096	.059	.103	.067	.042	.060	.040	.025	.019	.013	.008	
9.0	.167	.106	.064	.144	.092	.056	.100	.064	.040	.058	.038	.024	.019	.012	.008	
10.0	.161	.101	.062	.139	.088	.054	.096	.062	.038	.056	.037	.023	.018	.012	.008	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz Lamp Flux:1477.32x1 lm										
Name: FLS70W-NW-COB					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	26.3	27.9	26.6	28.2	28.5	24.8	26.4	25.1	26.7	27.0
3H	29.0	30.5	29.4	30.8	31.2	26.5	28.0	26.9	28.3	28.7
4H	30.6	32.0	30.9	32.3	32.7	27.2	28.7	27.6	29.0	29.4
6H	32.2	33.6	32.7	34.0	34.4	27.8	29.1	28.2	29.5	29.9
8H	33.2	34.5	33.6	34.8	35.3	28.0	29.3	28.4	29.7	30.1
12H	34.2	35.4	34.6	35.8	36.3	28.1	29.3	28.5	29.7	30.2
4H 2H	27.0	28.4	27.3	28.7	29.1	25.9	27.3	26.3	27.6	28.0
3H	29.9	31.2	30.4	31.6	32.0	27.8	29.1	28.3	29.5	29.9
4H	31.7	32.8	32.1	33.2	33.7	28.8	29.9	29.2	30.4	30.8
6H	33.6	34.6	34.0	35.1	35.5	29.6	30.6	30.1	31.1	31.6
8H	34.6	35.6	35.1	36.0	36.6	29.9	30.9	30.4	31.3	31.8
12H	35.8	36.7	36.3	37.2	37.7	30.1	31.0	30.6	31.5	32.0
8H 4H	32.1	33.1	32.6	33.5	34.0	29.8	30.8	30.3	31.2	31.7
6H	34.3	35.1	34.8	35.6	36.2	31.0	31.8	31.5	32.3	32.9
8H	35.6	36.3	36.1	36.8	37.4	31.5	32.3	32.1	32.8	33.4
12H	37.0	37.6	37.5	38.2	38.8	32.0	32.6	32.5	33.2	33.7
12H 4H	32.1	33.0	32.6	33.5	34.1	30.1	31.0	30.6	31.5	32.0
6H	34.4	35.2	35.0	35.7	36.3	31.5	32.3	32.1	32.8	33.4
8H	35.8	36.5	36.4	37.0	37.6	32.2	32.9	32.8	33.4	34.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117, 1477 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.4$)
Area: 0.01 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		

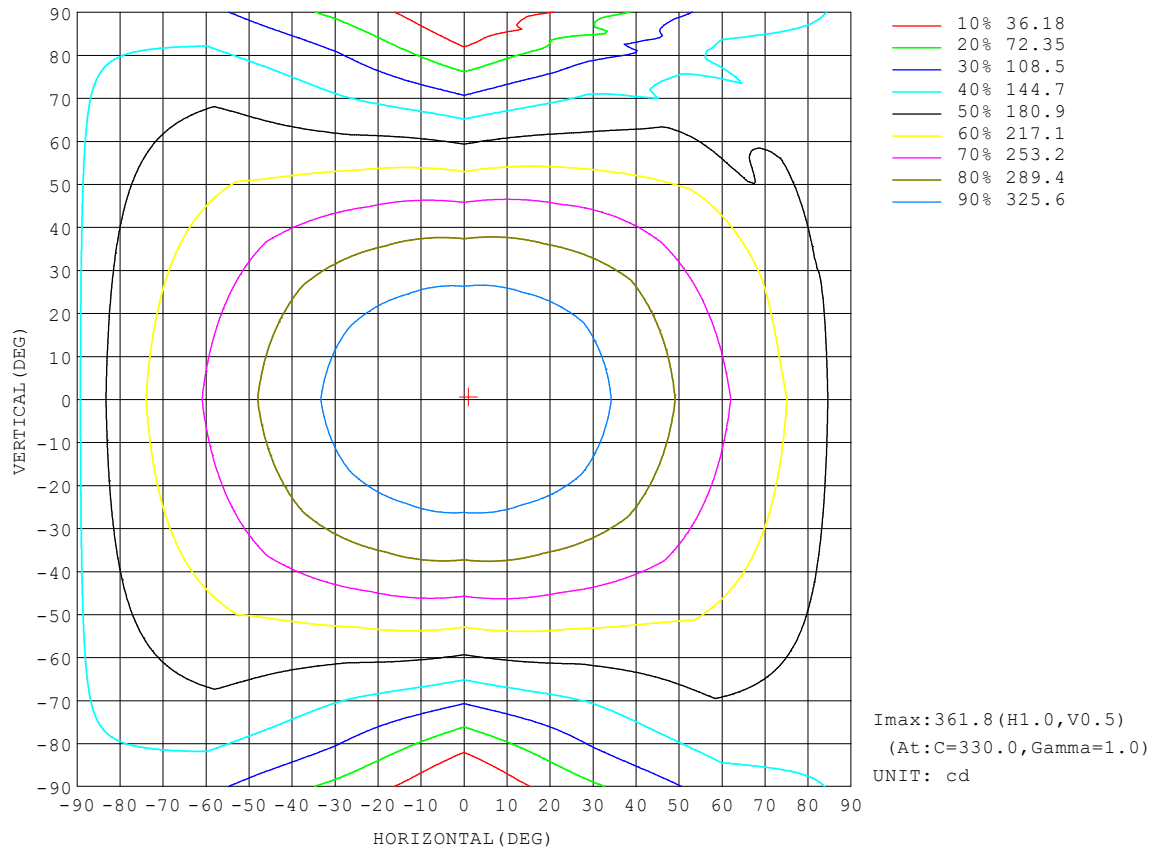
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	51	38	31	50	38	31	49	37	30	24
0.80	60	47	39	59	47	39	57	46	38	31
1.00	68	55	47	67	54	46	64	56	46	38
1.25	75	62	54	73	62	53	70	60	53	44
1.50	80	68	59	78	67	59	74	65	58	49
2.00	87	76	68	85	75	67	81	72	66	56
2.50	92	82	74	89	80	73	85	77	71	61
3.00	95	86	79	93	84	78	88	81	75	65
4.00	100	92	86	97	90	84	92	86	81	70
5.00	103	96	90	100	94	89	95	90	85	74
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:2024-12-04

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=0.7125]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		

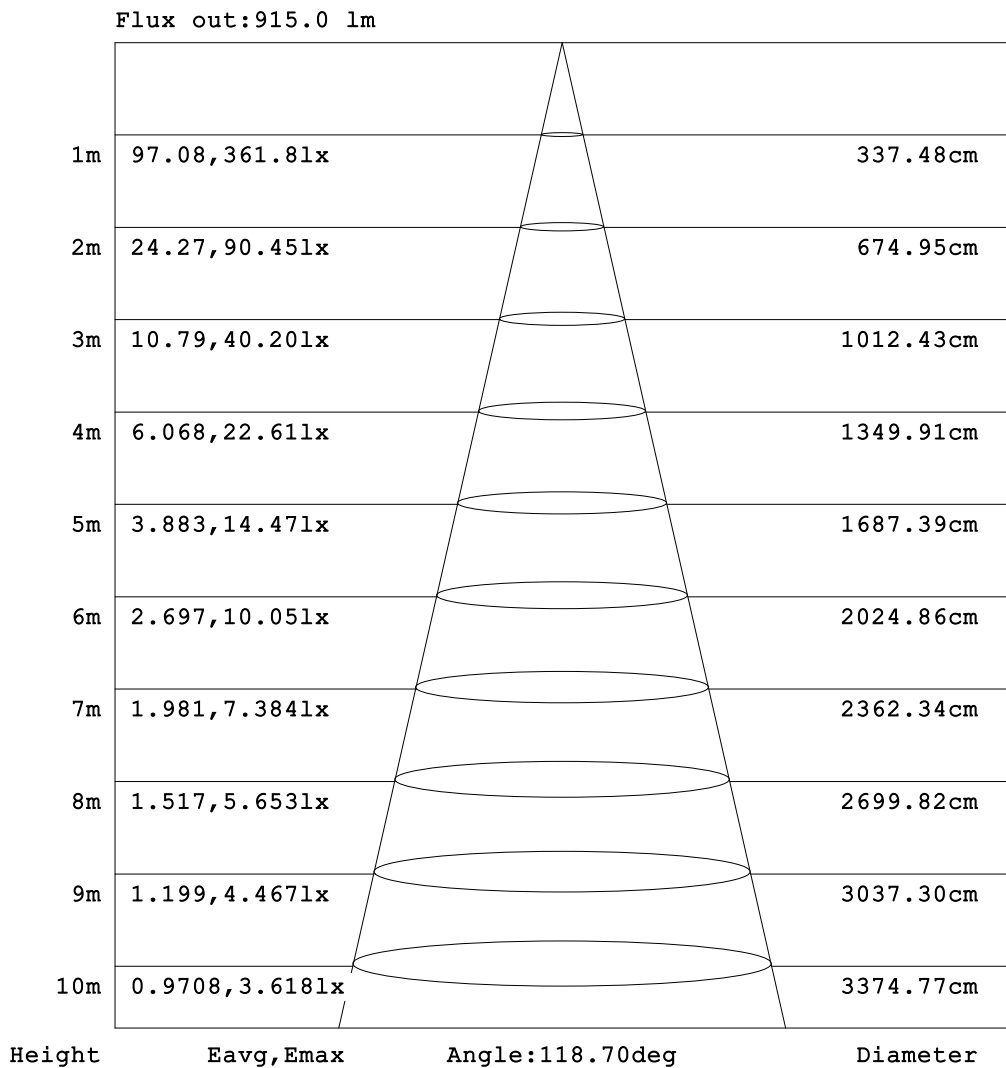


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks:

AAI Figure

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz		
Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		



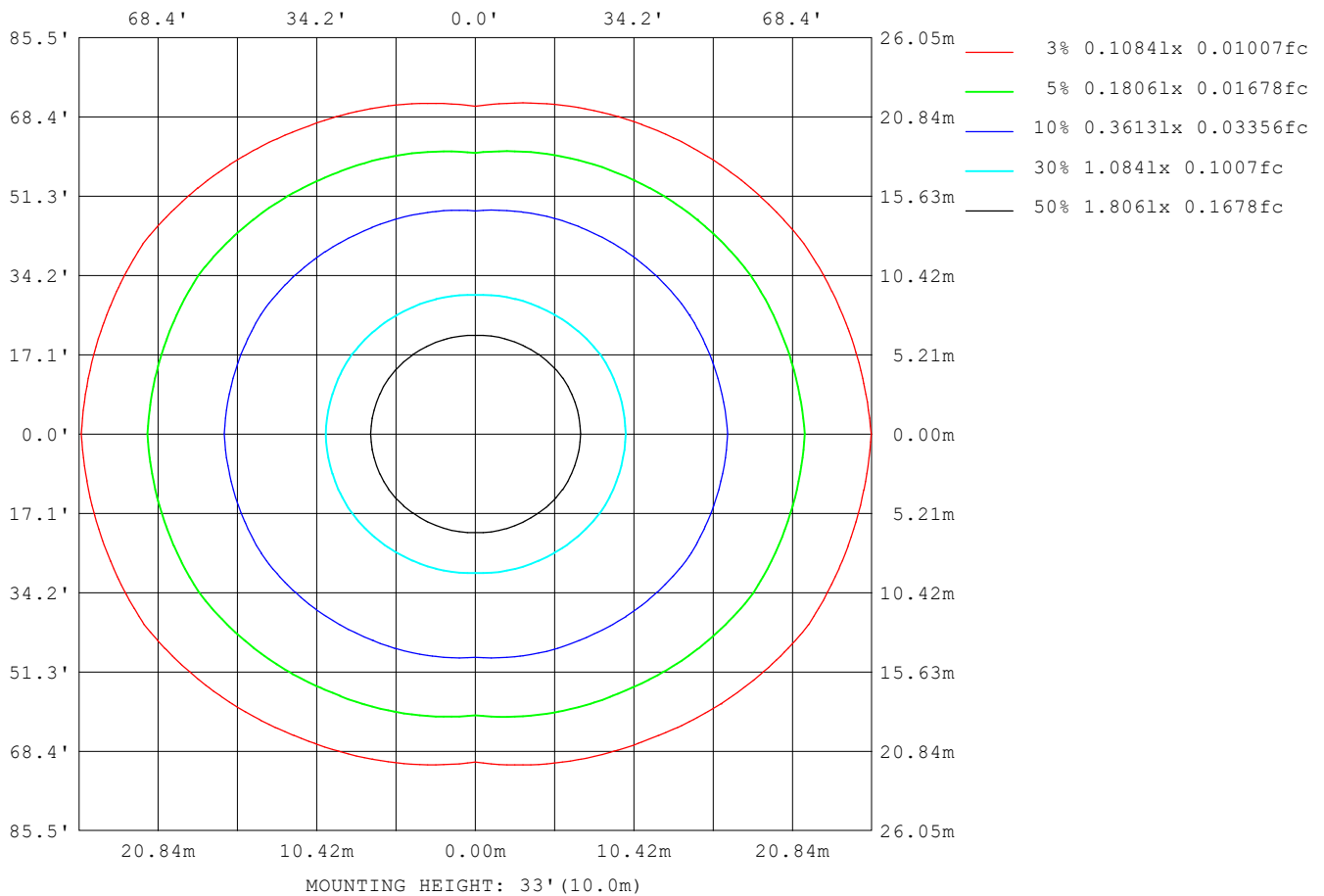
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2024-12-04

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=0.7125]
 Remarks:

ISOLUX DIAGRAM

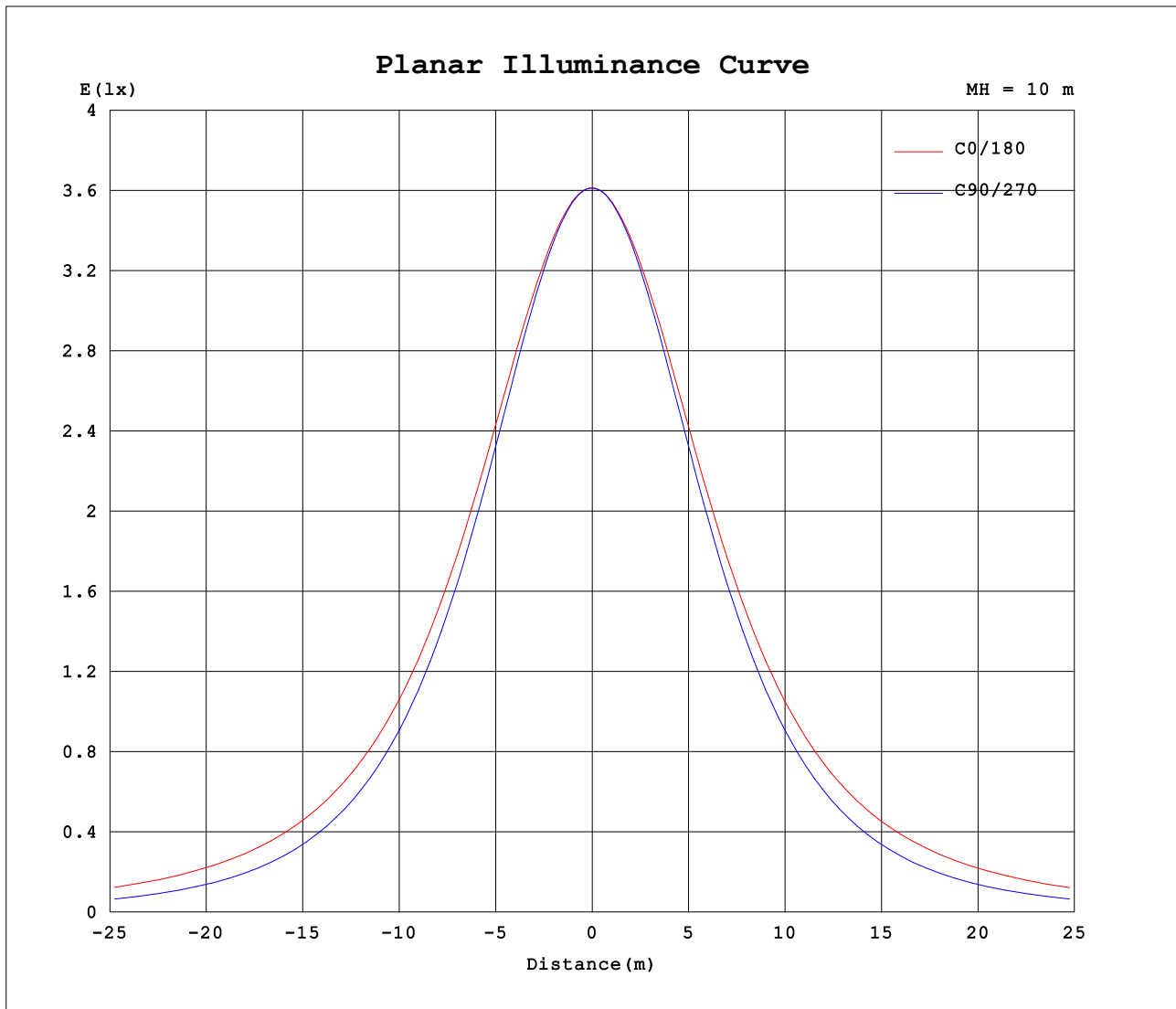
Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-12-04

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=0.7125]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.6030A P:14.400W PF:1.000 Freq:0Hz Lamp Flux:1477.32x1 lm		
Name: FLS70W-NW-COB	Type: LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	361	361	361	361	362	362	361	361	361	361	362	362							
5	360	361	360	360	360	361	360	360	360	360	361	361							
10	358	358	357	356	356	357	358	357	356	356	357	358							
15	354	353	351	350	350	353	354	352	350	350	351	354							
20	349	347	343	341	342	346	348	346	342	341	343	348							
25	342	340	332	329	332	338	341	338	332	329	333	341							
30	334	330	320	315	319	328	332	328	319	315	321	331							
35	324	319	305	298	304	316	322	316	305	298	306	320							
40	313	306	288	279	287	303	310	303	288	279	290	308							
45	300	292	270	257	268	288	297	289	269	257	271	294							
50	287	276	249	233	248	272	284	273	248	232	251	278							
55	273	260	227	206	226	256	270	257	226	206	229	257							
60	259	243	204	177	202	239	256	241	203	177	206	239							
65	245	227	180	146	179	224	242	225	180	145	182	222							
70	232	212	157	113	156	209	229	210	157	113	159	203							
75	217	196	135	80.3	135	193	214	194	137	79.6	135	160							
80	201	179	116	48.3	116	174	196	175	117	47.3	110	164							
85	179	157	94.6	20.9	92.8	150	172	151	93.8	20.4	81.2	152							
90	149	128	67.0	3.75	63.8	118	139	118	63.9	3.49	50.9	126							
95	109	88.4	29.7	0.99	27.5	77.0	96.7	76.3	26.9	2.15	32.6	88.6							
100	60.8	40.7	1.40	0.93	2.12	36.4	54.0	35.2	2.79	2.02	2.60	42.7							
105	12.8	3.47	1.15	0.90	1.07	5.56	18.0	5.81	2.14	1.93	2.30	4.89							
110	1.45	1.37	1.10	0.87	1.04	1.32	2.70	2.34	2.09	1.88	2.20	2.61							
115	1.33	1.30	1.09	0.87	1.05	1.26	2.36	2.25	2.03	1.85	2.12	2.53							
120	1.27	1.23	1.02	0.92	1.06	1.21	2.26	2.15	1.96	1.84	2.06	2.43							
125	1.21	1.16	0.98	0.93	1.08	1.19	2.14	2.05	1.90	1.85	1.97	2.30							
130	1.18	1.12	1.00	0.97	1.08	1.20	2.05	1.98	1.90	1.86	1.95	2.20							
135	1.21	1.15	1.06	1.03	1.13	1.26	2.00	1.97	1.91	1.87	1.95	2.28							
140	1.32	1.23	1.14	1.11	1.21	1.41	2.01	2.00	1.92	1.89	1.95	2.36							
145	1.34	1.30	1.21	1.17	1.25	1.47	2.03	2.01	1.94	1.91	1.96	2.32							
150	1.41	1.37	1.28	1.24	1.33	1.53	2.04	2.01	1.95	1.92	1.97	2.24							
155	1.48	1.43	1.35	1.32	1.42	1.57	2.03	2.01	1.96	1.92	1.98	2.20							
160	1.55	1.51	1.44	1.41	1.51	1.64	2.02	2.00	1.95	1.92	1.97	2.15							
165	1.61	1.59	1.53	1.50	1.60	1.71	2.00	1.98	1.94	1.90	1.95	2.10							
170	1.69	1.68	1.62	1.59	1.70	1.79	1.94	1.94	1.89	1.85	1.91	2.04							
175	1.76	1.77	1.70	1.67	1.80	1.87	1.85	1.85	1.81	1.78	1.85	1.97							
180	1.82	1.81	1.74	1.72	1.83	1.93	1.81	1.83	1.76	1.74	1.82	1.92							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-12-04

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=0.7125]
Remarks: