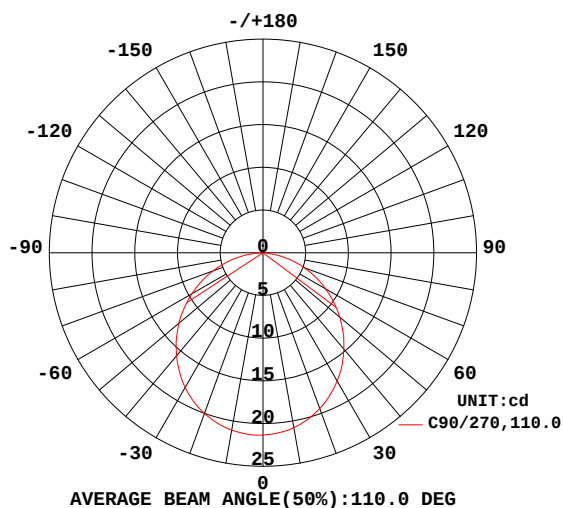


LUMINAIRE PHOTOMETRIC TEST REPORT

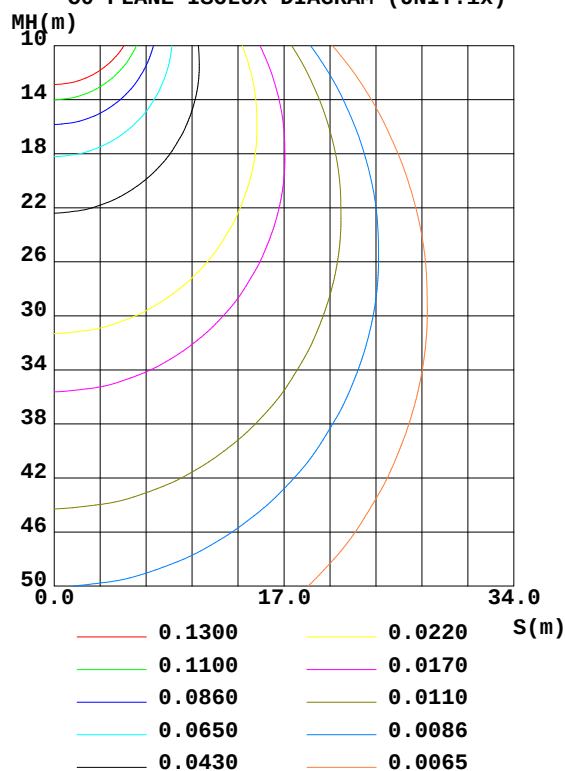
NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-B	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 9.42 lm/W
MODEL	5050	I _{max} (cd)	21.57	S/MH(C0/180)	1.25	
NOMINAL POWER(W)	16.5	LOR(%)	104.2	S/MH(C90/270)	1.27	
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	60.421	η UP, DN(C0-180)	0.0, 50.4	
NOMINAL FLUX(lm)	57.984	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 53.8	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	24	η down(%)	104.2	CIBSE SHR MAX	1.35	

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:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [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	21.11	20.96	20.77	21.00	21.19	21.22	21.10	21.19	0- 10	2.031	2.031	3.36,3.5
20	19.90	19.66	19.43	19.72	20.04	20.15	20.07	20.07	10- 20	5.806	7.837	13,13.5
30	17.96	17.65	17.34	17.71	18.16	18.34	18.21	18.21	20- 30	8.755	16.59	27.5,28.6
40	15.44	15.08	14.72	15.14	15.66	15.91	15.76	15.74	30- 40	10.49	27.08	44.8,46.7
50	12.45	12.09	11.74	12.15	12.76	12.98	12.88	12.81	40- 50	10.80	37.88	62.7,65.3
60	9.191	8.836	8.474	8.904	9.497	9.748	9.615	9.574	50- 60	9.730	47.61	78.8,82.1
70	5.745	5.475	5.159	5.574	6.128	6.359	6.247	6.168	60- 70	7.486	55.10	91.2,95
80	2.256	2.035	1.778	2.100	2.585	2.855	2.823	2.663	70- 80	4.367	59.47	98.4,103
90	0	0	0	0	0	0.0003	0.0009	0.0001	80- 90	0.9528	60.42	100,104
100	0	0	0	0	0	0	0	0	90-100	0.0000	60.42	100,104
110	0	0	0	0	0	0	0	0	100-110	0	60.42	100,104
120	0	0	0	0	0	0	0	0	110-120	0	60.42	100,104
130	0	0	0	0	0	0	0	0	120-130	0	60.42	100,104
140	0	0	0	0	0	0	0	0	130-140	0	60.42	100,104
150	0	0	0	0	0	0	0	0	140-150	0	60.42	100,104
160	0	0	0	0	0	0	0	0	150-160	0	60.42	100,104
170	0	0	0	0	0	0	0	0	160-170	0	60.42	100,104
180	0	0	0	0	0	0	0	0	170-180	0	60.42	100,104
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 33.617 lm

%lum = 55.6%

%lamp = 58.0%

Conical surface Flux(120deg): 47.615 lm

%lum = 78.8%

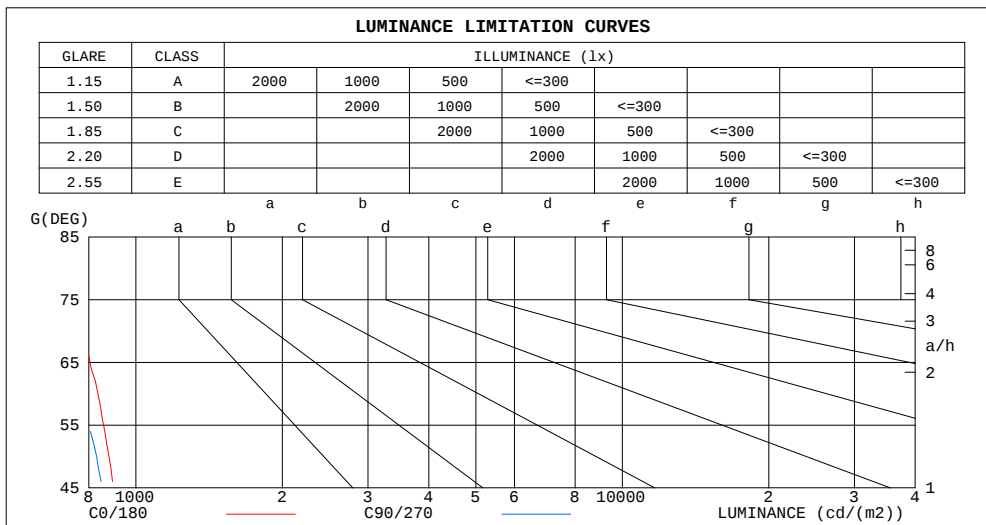
%lamp = 82.1%

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:		WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	452	225
80	591	465
75	771	666
70	764	686
65	839	770
60	836	770
55	885	827
50	881	830
45	916	874

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Dillon
Test Date: 22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 6.950m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

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	.182	.058	.313	.179	.057	.299	.172	.055	.287	.165	.053	.275	.159	.051		
2.0	.303	.166	.051	.297	.163	.050	.284	.158	.049	.273	.153	.048	.263	.149	.047		
3.0	.281	.149	.045	.275	.147	.044	.264	.143	.044	.254	.139	.043	.245	.136	.042		
4.0	.259	.135	.040	.254	.133	.039	.245	.130	.039	.236	.127	.038	.228	.124	.038		
5.0	.240	.122	.035	.235	.121	.035	.227	.118	.035	.219	.115	.034	.211	.113	.034		
6.0	.222	.111	.032	.218	.110	.032	.211	.108	.031	.204	.106	.031	.197	.104	.031		
7.0	.207	.102	.029	.203	.101	.029	.197	.099	.029	.190	.098	.028	.184	.096	.028		
8.0	.193	.094	.027	.190	.094	.026	.184	.092	.026	.178	.090	.026	.173	.089	.026		
9.0	.181	.088	.024	.178	.087	.024	.173	.085	.024	.168	.084	.024	.163	.083	.024		
10.0	.170	.082	.023	.168	.081	.023	.163	.080	.022	.158	.079	.022	.154	.077	.022		

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	.198	.198	.198	.170	.170	.170	.116	.116	.116	.067	.067	.067	.021	.021	.021	
1.0	.188	.163	.140	.161	.140	.121	.110	.096	.083	.063	.056	.049	.020	.018	.016	
2.0	.179	.137	.102	.154	.118	.088	.105	.082	.062	.061	.048	.036	.019	.015	.012	
3.0	.171	.119	.077	.147	.103	.067	.101	.071	.047	.058	.042	.028	.019	.014	.009	
4.0	.163	.105	.061	.140	.091	.053	.096	.063	.037	.056	.037	.022	.018	.012	.007	
5.0	.156	.094	.049	.134	.082	.043	.092	.057	.030	.053	.033	.018	.017	.011	.006	
6.0	.148	.086	.041	.127	.074	.036	.088	.052	.025	.051	.031	.015	.016	.010	.005	
7.0	.141	.078	.035	.121	.068	.030	.084	.048	.021	.049	.028	.013	.016	.009	.004	
8.0	.134	.072	.030	.116	.063	.026	.080	.044	.019	.047	.026	.011	.015	.009	.004	
9.0	.128	.067	.026	.110	.058	.023	.076	.041	.016	.044	.024	.010	.014	.008	.003	
10.0	.122	.063	.023	.105	.055	.020	.073	.038	.014	.043	.023	.009	.014	.007	.003	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:						WEIGHT: 0.590kg/m					
SPEC.:						DIM.: 22*22mm			SERIAL No.:		
MFR.: CLEAR						SUR.: 22*1000mm			Shielding Angle:		
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		22.1	23.6	22.4	23.8	24.0	21.8	23.4	22.1	23.6	23.8
3H		23.7	25.1	24.0	25.3	25.5	23.3	24.7	23.6	24.9	25.1
4H		24.3	25.6	24.6	25.9	26.1	23.8	25.1	24.1	25.4	25.6
6H		24.7	25.9	25.0	26.2	26.5	24.1	25.4	24.4	25.6	25.9
8H		24.8	26.0	25.1	26.3	26.5	24.1	25.3	24.5	25.6	25.9
12H		24.7	25.9	25.1	26.2	26.5	24.1	25.3	24.4	25.6	25.9
4H 2H		22.7	24.0	23.0	24.3	24.5	22.5	23.8	22.8	24.1	24.3
3H		24.4	25.6	24.8	25.9	26.2	24.1	25.3	24.4	25.5	25.9
4H		25.1	26.2	25.5	26.5	26.9	24.7	25.8	25.1	26.1	26.5
6H		25.7	26.6	26.1	27.0	27.3	25.1	26.1	25.5	26.4	26.8
8H		25.8	26.7	26.2	27.0	27.4	25.2	26.1	25.6	26.4	26.8
12H		25.8	26.6	26.2	27.0	27.4	25.2	26.0	25.6	26.4	26.8
8H 4H		25.4	26.3	25.8	26.6	27.0	25.0	25.9	25.4	26.3	26.6
6H		26.0	26.7	26.4	27.1	27.6	25.5	26.3	26.0	26.7	27.1
8H		26.2	26.8	26.6	27.3	27.7	25.6	26.3	26.1	26.7	27.1
12H		26.2	26.8	26.7	27.2	27.7	25.6	26.2	26.1	26.6	27.1
12H 4H		25.4	26.2	25.8	26.6	27.0	25.0	25.8	25.4	26.2	26.6
6H		26.0	26.7	26.5	27.1	27.6	25.6	26.2	26.0	26.6	27.1
8H		26.2	26.8	26.7	27.2	27.7	25.7	26.2	26.1	26.7	27.2
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.2					+ 0.2 / - 0.3				

CIE Pub.117, 57.98 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -9.9)
Area: 0.022 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

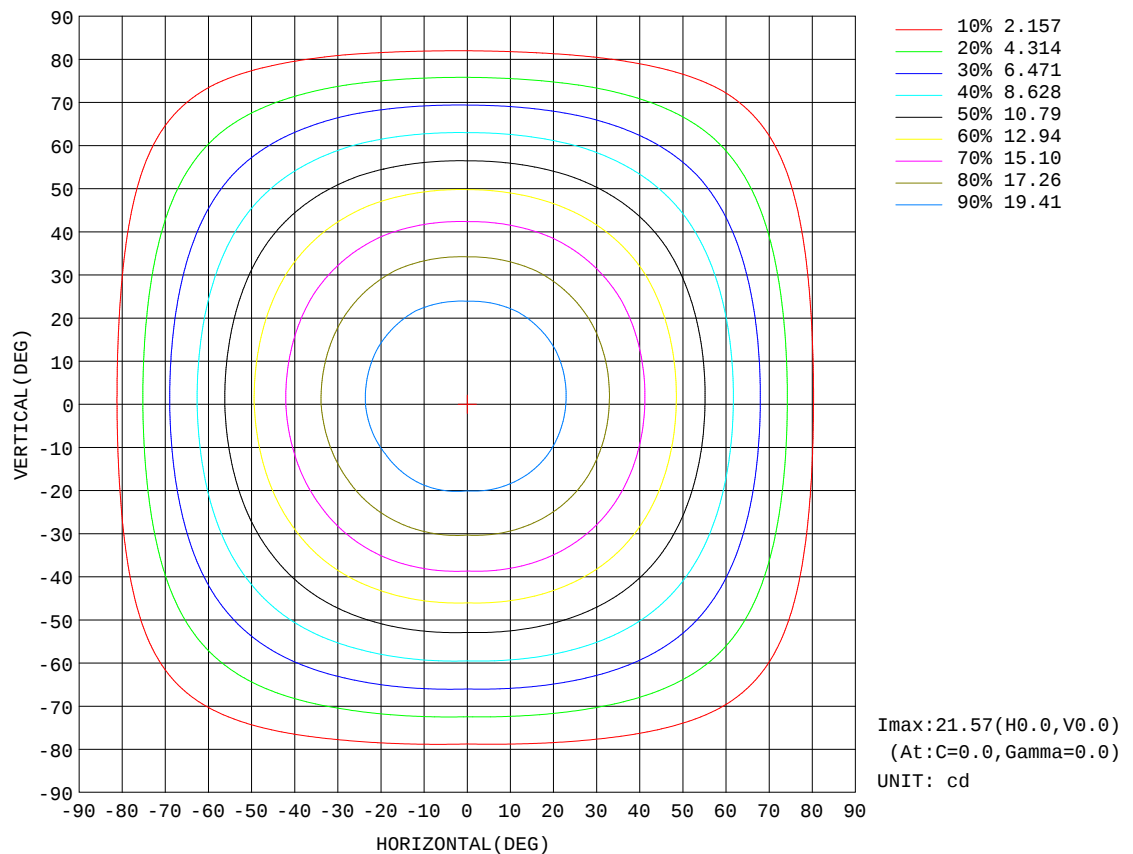
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	60	48	41	59	48	41	58	47	40	34
0.80	71	58	51	69	58	51	68	57	50	43
1.00	79	68	60	78	67	60	76	69	59	52
1.25	87	76	68	85	75	68	82	73	67	59
1.50	92	82	74	90	81	74	87	79	73	65
2.00	99	90	83	97	89	83	93	87	81	73
2.50	103	95	89	101	94	88	97	91	86	77
3.00	107	99	94	104	98	93	100	95	90	82
4.00	111	105	100	108	103	99	104	100	96	87
5.00	113	108	104	111	106	102	106	103	99	90
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:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

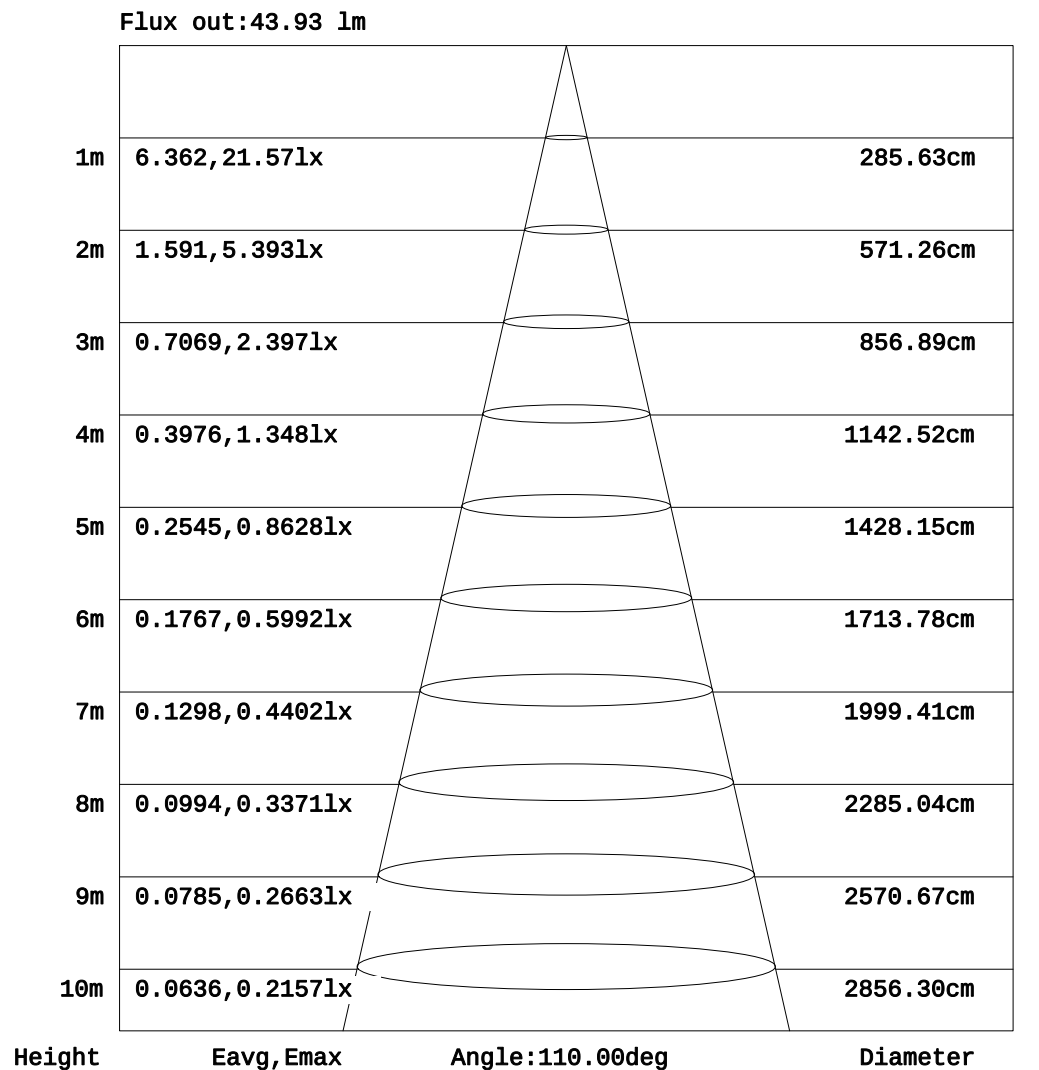


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Dillon
Test Date: 22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 6.950m [K=1.0000]
Remarks:

AAI Figure

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

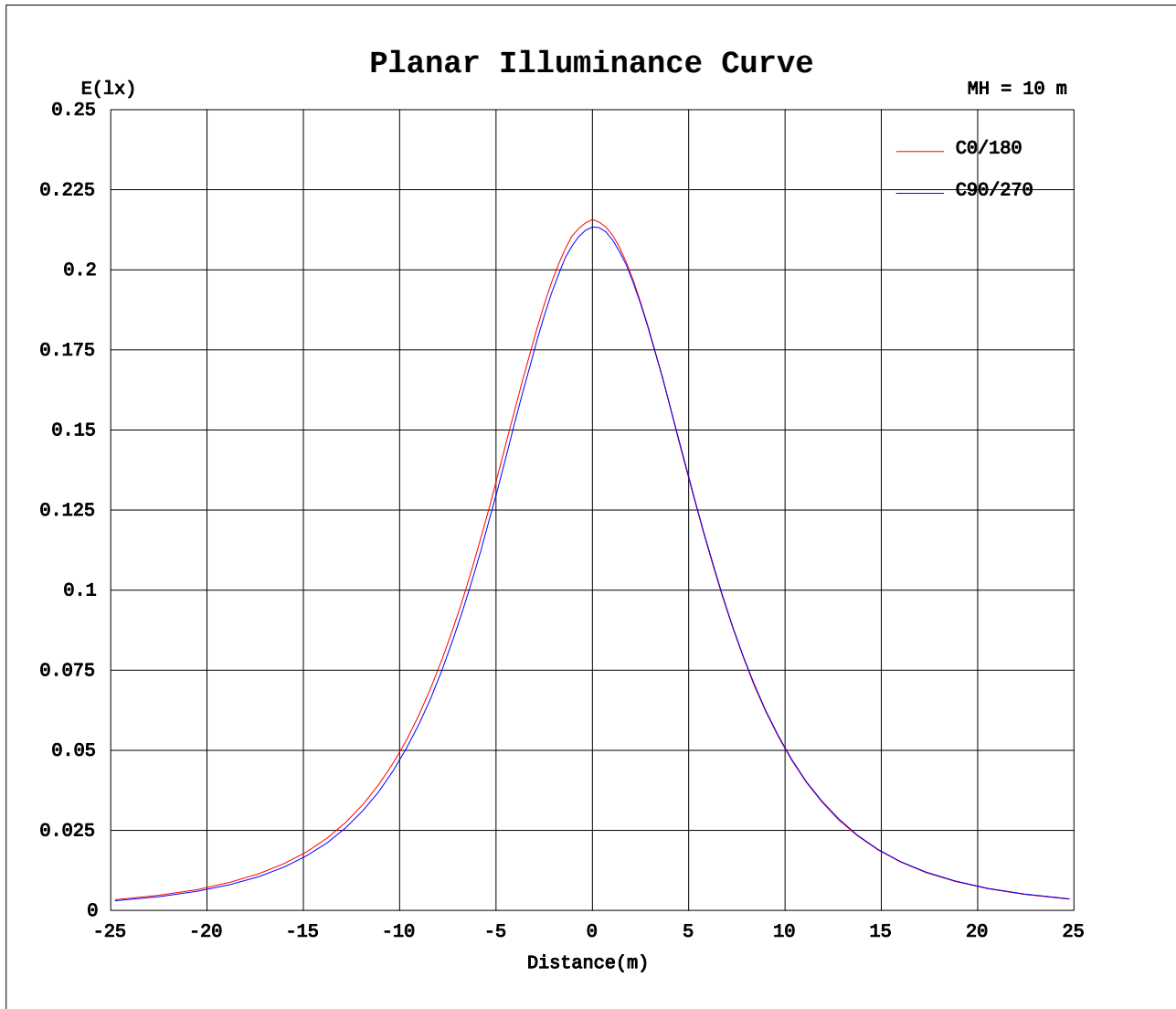


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Dillon
Test Date: 22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity: 65.0%
Test Distance: 6.950m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-BYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	21.6	21.5	21.5	21.3	21.5	21.5	21.6	21.5	21.5	21.3	21.5	21.5						
5	21.5	21.4	21.3	21.2	21.4	21.4	21.5	21.5	21.5	21.3	21.5	21.5						
10	21.1	21.0	20.9	20.8	21.0	21.0	21.2	21.2	21.2	21.1	21.2	21.2						
15	20.7	20.6	20.4	20.3	20.5	20.6	20.8	20.9	20.9	20.8	20.9	20.8						
20	19.9	19.8	19.6	19.4	19.6	19.8	20.0	20.1	20.2	20.1	20.1	20.0						
25	19.2	19.0	18.8	18.7	18.9	19.1	19.3	19.5	19.5	19.4	19.5	19.4						
30	18.0	17.8	17.5	17.3	17.6	17.8	18.2	18.3	18.4	18.2	18.3	18.2						
35	17.0	16.8	16.6	16.4	16.6	16.9	17.2	17.4	17.5	17.3	17.4	17.2						
40	15.4	15.2	15.0	14.7	15.0	15.3	15.7	15.9	15.9	15.8	15.8	15.7						
45	14.2	14.1	13.8	13.6	13.8	14.1	14.6	14.8	14.8	14.6	14.7	14.6						
50	12.5	12.2	12.0	11.7	12.0	12.3	12.8	12.9	13.0	12.9	12.8	12.8						
55	11.2	10.9	10.7	10.4	10.7	11.0	11.5	11.7	11.7	11.6	11.6	11.5						
60	9.19	8.96	8.72	8.47	8.73	9.08	9.50	9.72	9.77	9.62	9.62	9.53						
65	7.81	7.62	7.38	7.16	7.44	7.74	8.16	8.34	8.43	8.28	8.29	8.12						
70	5.75	5.59	5.36	5.16	5.43	5.72	6.13	6.34	6.38	6.25	6.24	6.10						
75	4.39	4.22	3.98	3.79	4.01	4.35	4.74	4.95	5.00	4.90	4.89	4.67						
80	2.26	2.14	1.93	1.78	1.95	2.25	2.58	2.81	2.90	2.82	2.75	2.58						
85	0.87	0.77	0.58	0.43	0.61	0.84	1.19	1.39	1.52	1.45	1.39	1.18						
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks: