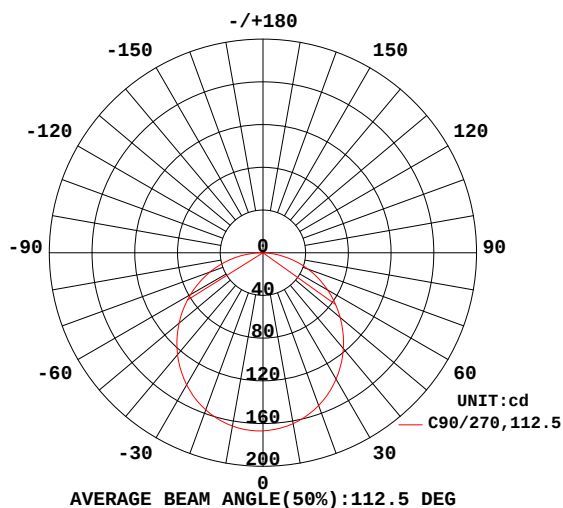


LUMINAIRE PHOTOMETRIC TEST REPORT

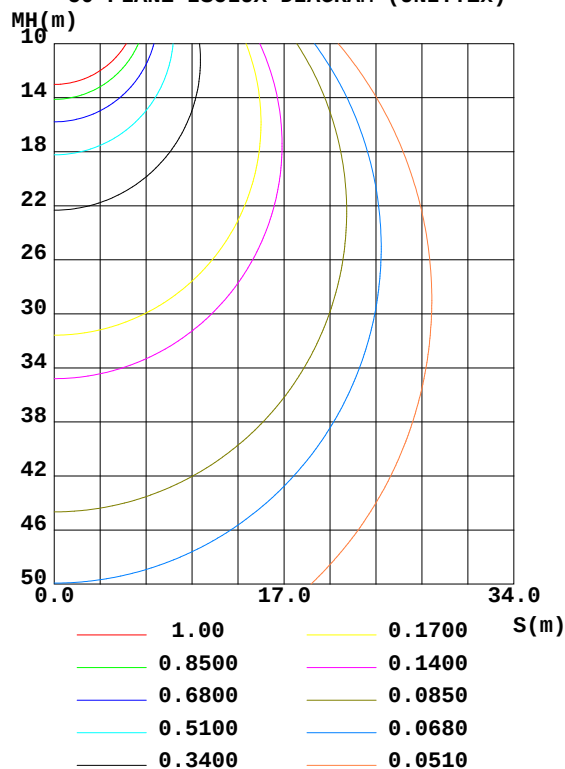
NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-RGB	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 30.47 lm/W			
MODEL	5050	I _{max} (cd)	169.5	S/MH(C0/180)	1.26
NOMINAL POWER(W)	16.5	LOR(%)	103.7	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	497.81	η UP, DN(C0-180)	0.6, 49.7
NOMINAL FLUX(lm)	480.07	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.6, 52.8
LAMPS INSIDE	1	η up(%)	1.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	102.5	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	166.3	164.2	162.5	163.7	166.7	166.1	164.8	165.2	0- 10	15.89	15.89	3.19, 3.31
20	157.1	154.5	152.3	154.0	157.9	158.0	156.7	156.9	10- 20	45.46	61.35	12.3, 12.8
30	142.4	139.5	136.8	139.0	143.6	144.3	143.0	142.9	20- 30	68.79	130.1	26.1, 27.1
40	123.3	120.1	117.1	119.7	124.7	125.8	124.6	124.4	30- 40	82.86	213.0	42.8, 44.4
50	100.7	97.57	94.34	97.27	102.5	103.8	102.6	102.3	40- 50	86.14	299.1	60.1, 62.3
60	75.91	73.09	70.07	73.02	78.00	79.36	78.38	77.94	50- 60	78.82	378.0	75.9, 78.7
70	49.81	47.57	44.93	47.71	52.25	53.71	52.96	52.32	60- 70	62.44	440.4	88.5, 91.7
80	22.88	21.19	19.05	21.52	25.24	26.96	26.62	25.66	70- 80	39.07	479.5	96.3, 99.9
90	1.047	1.535	0.6258	1.810	2.120	3.010	2.925	2.149	80- 90	12.42	491.9	98.8, 102
100	0.9352	1.227	0.2962	1.472	2.064	1.640	0.8860	1.026	90-100	1.533	493.4	99.1, 103
110	0.9072	1.056	0.2068	1.227	1.914	1.296	0.7777	0.7607	100-110	1.205	494.6	99.4, 103
120	1.006	0.8982	0.1172	1.092	1.731	0.8967	0.1376	0.4537	110-120	0.9439	495.6	99.6, 103
130	1.018	0.8533	0.1358	1.018	1.549	0.8673	0.0588	0.5170	120-130	0.7088	496.3	99.7, 103
140	0.9477	0.7932	0.1513	0.9151	1.324	0.8210	0.0926	0.5261	130-140	0.5797	496.9	99.8, 103
150	0.8642	0.7237	0.2501	0.8424	1.092	0.7423	0.2036	0.4722	140-150	0.4341	497.3	99.9, 104
160	0.7470	0.6543	0.3428	0.7160	0.8947	0.6713	0.3456	0.4815	150-160	0.2939	497.6	100, 104
170	0.6267	0.5709	0.4629	0.6203	0.6819	0.5789	0.4566	0.4770	160-170	0.1669	497.8	100, 104
180	0.5185	0.5062	0.5123	0.4861	0.5092	0.5000	0.5463	0.4907	170-180	0.0516	497.8	100, 104
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 264.99 lm

%lum = 53.2%

%lamp = 55.2%

Conical surface Flux(120deg): 377.96 lm

%lum = 75.9%

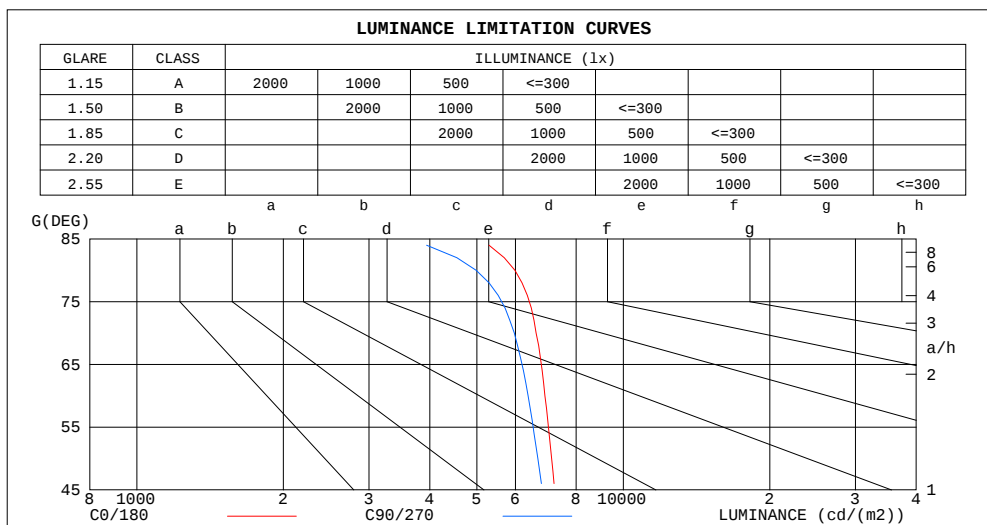
%lamp = 78.7%

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- RGBE :		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	6349	4728
80	5988	4985
75	6889	6083
70	6620	5971
65	7063	6465
60	6901	6370
55	7209	6716
50	7122	6671
45	7368	6960

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- RGBE :	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	.333	.190	.060	.325	.186	.059	.311	.178	.057	.298	.172	.055	.285	.165	.053		
2.0	.310	.170	.052	.303	.167	.051	.291	.162	.050	.279	.156	.049	.268	.151	.048		
3.0	.285	.152	.045	.279	.150	.045	.268	.145	.044	.257	.141	.043	.248	.137	.042		
4.0	.262	.136	.040	.257	.134	.040	.247	.131	.039	.237	.127	.038	.229	.124	.038		
5.0	.242	.123	.036	.237	.122	.035	.228	.119	.035	.220	.116	.034	.212	.113	.034		
6.0	.224	.112	.032	.219	.111	.032	.211	.108	.032	.204	.106	.031	.197	.104	.031		
7.0	.208	.103	.029	.204	.102	.029	.197	.100	.029	.190	.097	.028	.184	.095	.028		
8.0	.194	.095	.027	.190	.094	.027	.184	.092	.026	.178	.090	.026	.172	.088	.026		
9.0	.182	.088	.025	.178	.087	.024	.173	.085	.024	.167	.084	.024	.162	.082	.024		
10.0	.171	.082	.023	.168	.081	.023	.162	.080	.022	.158	.078	.022	.153	.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	.207	.207	.207	.177	.177	.177	.121	.121	.121	.069	.069	.069	.022	.022	.022	
1.0	.197	.171	.148	.169	.147	.127	.115	.101	.088	.066	.059	.051	.021	.019	.017	
2.0	.189	.146	.110	.162	.126	.095	.111	.087	.066	.064	.051	.039	.021	.016	.013	
3.0	.181	.128	.086	.155	.111	.074	.107	.077	.052	.062	.045	.031	.020	.015	.010	
4.0	.173	.114	.070	.149	.099	.060	.102	.069	.043	.059	.040	.025	.019	.013	.008	
5.0	.165	.104	.058	.142	.090	.051	.098	.063	.036	.057	.037	.021	.018	.012	.007	
6.0	.158	.095	.050	.136	.082	.044	.094	.058	.031	.054	.034	.018	.018	.011	.006	
7.0	.151	.088	.044	.130	.076	.038	.090	.053	.027	.052	.031	.016	.017	.010	.005	
8.0	.144	.082	.039	.124	.071	.034	.086	.050	.024	.050	.029	.014	.016	.010	.005	
9.0	.138	.077	.036	.119	.067	.031	.082	.047	.022	.048	.028	.013	.015	.009	.004	
10.0	.132	.072	.033	.114	.063	.029	.079	.044	.020	.046	.026	.012	.015	.009	.004	

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- RGBE						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		22.0	23.6	22.3	23.8	24.0	21.7	23.3	22.0	23.5	23.7
3H		23.7	25.1	24.0	25.4	25.6	23.3	24.7	23.6	25.0	25.2
4H		24.4	25.8	24.7	26.0	26.3	23.9	25.3	24.3	25.6	25.8
6H		24.9	26.2	25.3	26.5	26.8	24.4	25.7	24.7	26.0	26.3
8H		25.1	26.3	25.5	26.6	27.0	24.5	25.7	24.9	26.0	26.4
12H		25.2	26.4	25.6	26.7	27.0	24.6	25.7	24.9	26.1	26.4
4H 2H		22.6	24.0	23.0	24.3	24.5	22.4	23.8	22.7	24.0	24.3
3H		24.5	25.7	24.9	26.0	26.3	24.2	25.3	24.5	25.7	26.0
4H		25.3	26.4	25.7	26.8	27.1	24.9	26.0	25.3	26.4	26.7
6H		26.0	27.0	26.4	27.3	27.7	25.5	26.5	25.9	26.8	27.2
8H		26.2	27.1	26.7	27.5	27.9	25.7	26.6	26.1	27.0	27.4
12H		26.4	27.2	26.8	27.6	28.0	25.8	26.6	26.2	27.0	27.4
8H 4H		25.6	26.5	26.0	26.9	27.3	25.3	26.2	25.7	26.5	27.0
6H		26.4	27.2	26.9	27.6	28.1	26.0	26.7	26.5	27.2	27.6
8H		26.8	27.4	27.2	27.9	28.4	26.2	26.9	26.7	27.4	27.8
12H		27.0	27.6	27.5	28.0	28.5	26.4	27.0	26.9	27.4	27.9
12H 4H		25.6	26.4	26.1	26.9	27.3	25.3	26.1	25.7	26.5	26.9
6H		26.5	27.2	27.0	27.6	28.1	26.1	26.7	26.5	27.2	27.7
8H		26.9	27.4	27.4	27.9	28.4	26.4	26.9	26.9	27.4	27.9
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.1 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.1 / - 0.2					+ 0.1 / - 0.3				

CIE Pub.117, 480.1 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.5)
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- RGBE	WEIGHT: 0.590kg/m
SPEC.: DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR SUR.: 22*1000mm	Shielding Angle:

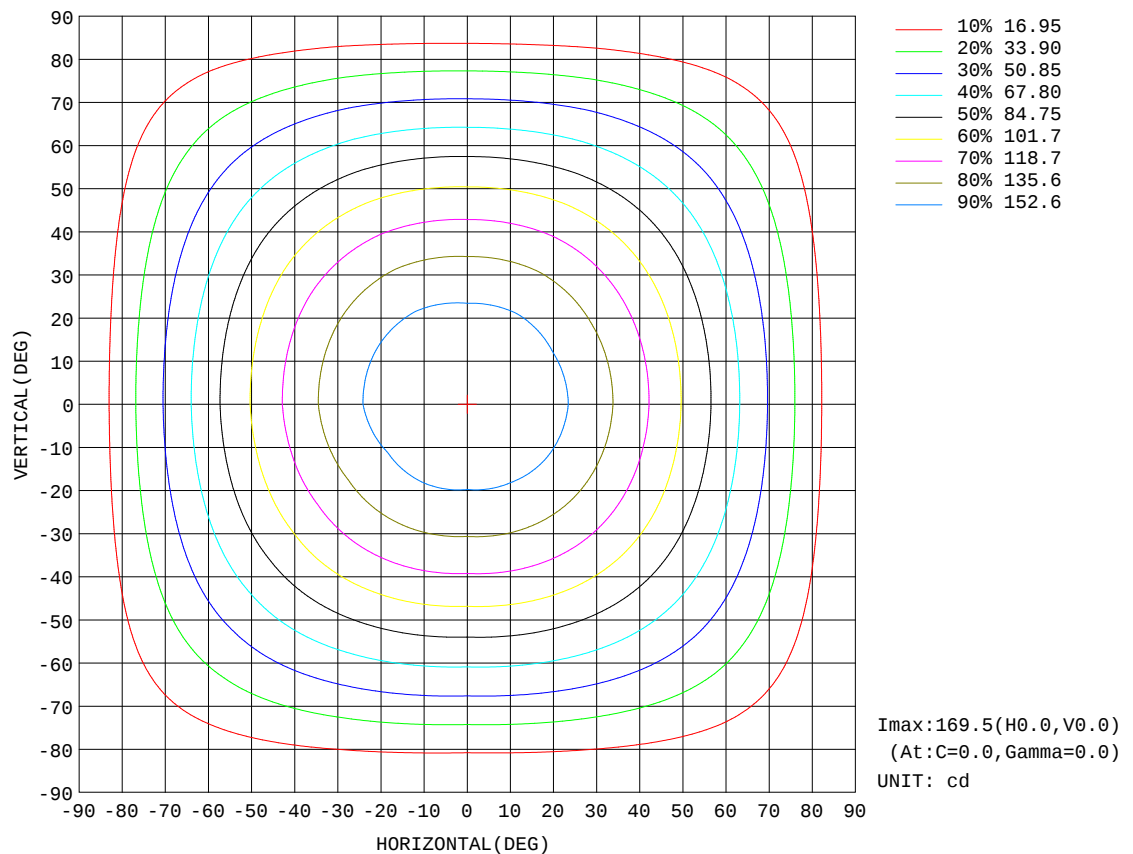
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	59	46	39	58	46	39	57	46	39	32
0.80	69	57	49	68	56	49	66	55	48	41
1.00	77	66	58	76	65	58	74	66	57	49
1.25	85	74	66	83	73	66	80	71	65	57
1.50	90	79	72	88	78	71	85	77	70	62
2.00	97	88	81	95	87	80	91	84	79	70
2.50	101	93	87	99	92	86	95	89	83	74
3.00	105	98	92	103	96	90	98	93	88	79
4.00	109	103	98	107	101	96	102	97	94	84
5.00	112	107	102	109	104	100	104	100	97	87
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004					Suspended			SHRNM = 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- RGBE	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

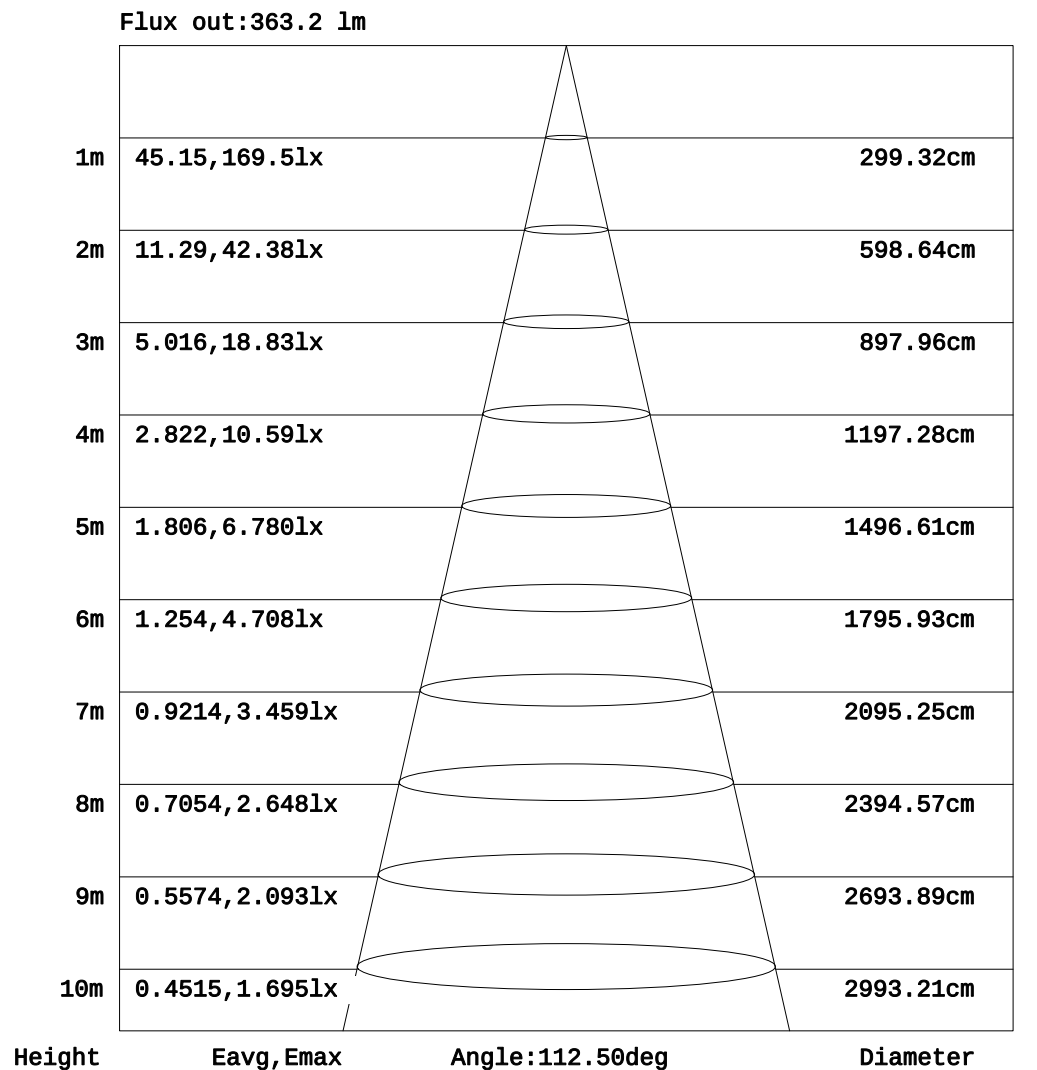


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

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- RGBE	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

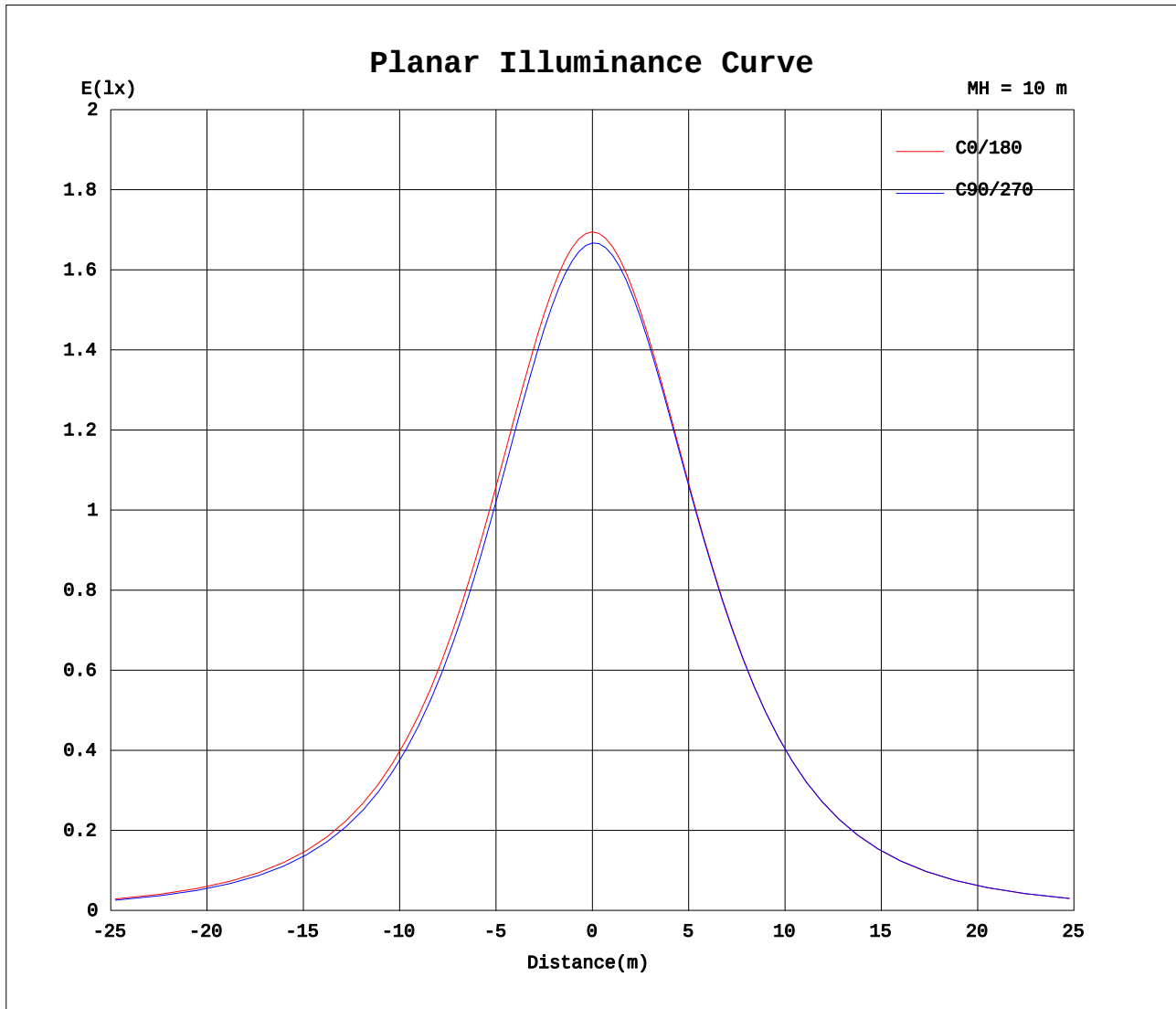


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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-RGBE:	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	170	169	168	167	168	167	170	169	168	167	168	167						
5	169	168	167	166	167	167	169	169	168	167	167	167						
10	166	165	163	162	164	164	167	166	166	165	165	165						
15	163	162	160	159	160	161	164	164	163	162	163	162						
20	157	155	153	152	154	154	158	158	158	157	157	156						
25	152	150	148	147	148	149	153	153	153	152	152	151						
30	142	140	139	137	138	140	144	144	144	143	143	142						
35	135	133	131	129	131	133	137	137	138	136	137	135						
40	123	121	119	117	119	121	125	126	126	125	125	124						
45	115	112	110	108	110	112	116	117	117	116	116	115						
50	101	98.6	96.5	94.3	96.2	98.3	103	104	104	103	103	102						
55	91.0	89.0	86.9	84.7	86.6	88.8	93.0	94.1	94.4	93.1	93.4	92.2						
60	75.9	74.1	72.0	70.1	71.9	74.2	78.0	79.2	79.6	78.4	78.5	77.3						
65	65.7	64.0	62.0	60.1	61.9	64.1	67.8	69.0	69.4	68.3	68.4	67.2						
70	49.8	48.6	46.6	44.9	46.6	48.8	52.3	53.5	53.9	53.0	53.0	51.7						
75	39.2	38.0	36.2	34.6	36.3	38.4	41.6	42.9	43.3	42.5	42.5	41.1						
80	22.9	22.0	20.4	19.0	20.6	22.5	25.2	26.6	27.3	26.6	26.4	24.9						
85	12.2	11.5	10.2	9.07	10.4	12.1	14.4	15.9	16.7	16.1	15.8	14.3						
90	1.05	1.60	1.47	0.63	1.57	2.05	2.12	2.79	3.23	2.92	2.67	1.63						
95	1.04	1.44	1.29	0.40	1.33	1.91	2.13	2.02	1.52	1.02	1.16	1.08						
100	0.94	1.31	1.15	0.30	1.17	1.78	2.06	1.90	1.38	0.89	1.03	1.02						
105	0.90	1.25	1.07	0.27	1.06	1.68	2.02	1.84	1.31	0.83	0.99	0.98						
110	0.91	1.14	0.97	0.21	0.94	1.52	1.91	1.39	1.21	0.78	0.92	0.60						
115	0.96	1.14	0.88	0.19	0.89	1.50	1.85	1.36	1.12	0.73	0.82	0.64						
120	1.01	1.08	0.72	0.12	0.76	1.43	1.73	1.28	0.51	0.14	0.27	0.64						
125	1.02	1.09	0.71	0.11	0.75	1.40	1.68	1.29	0.52	0.08	0.29	0.70						
130	1.02	1.03	0.68	0.14	0.73	1.31	1.55	1.19	0.54	0.06	0.34	0.70						
135	0.99	1.00	0.68	0.16	0.71	1.24	1.47	1.14	0.55	0.07	0.36	0.69						
140	0.95	0.94	0.65	0.15	0.71	1.12	1.32	1.05	0.59	0.09	0.33	0.72						
145	0.90	0.89	0.64	0.21	0.70	1.06	1.23	0.98	0.58	0.13	0.27	0.72						
150	0.86	0.83	0.62	0.25	0.70	0.98	1.09	0.90	0.58	0.20	0.25	0.69						
155	0.82	0.79	0.60	0.29	0.65	0.91	0.99	0.83	0.60	0.24	0.25	0.69						
160	0.75	0.75	0.56	0.34	0.64	0.79	0.89	0.77	0.58	0.35	0.31	0.66						
165	0.69	0.68	0.52	0.40	0.61	0.74	0.77	0.69	0.58	0.37	0.31	0.62						
170	0.63	0.62	0.52	0.46	0.60	0.64	0.68	0.61	0.55	0.46	0.36	0.59						
175	0.59	0.56	0.48	0.49	0.57	0.60	0.62	0.60	0.58	0.46	0.41	0.54						
180	0.52	0.53	0.48	0.51	0.48	0.50	0.51	0.52	0.48	0.55	0.48	0.50						

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: