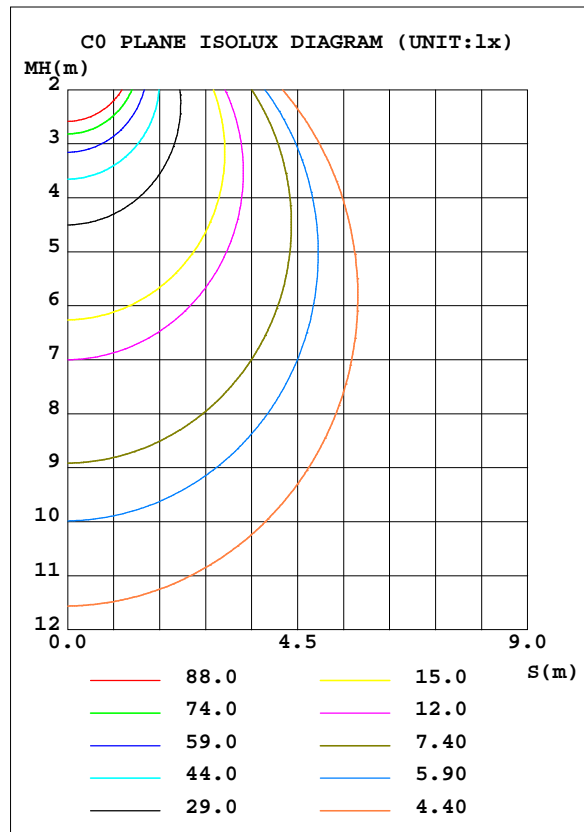
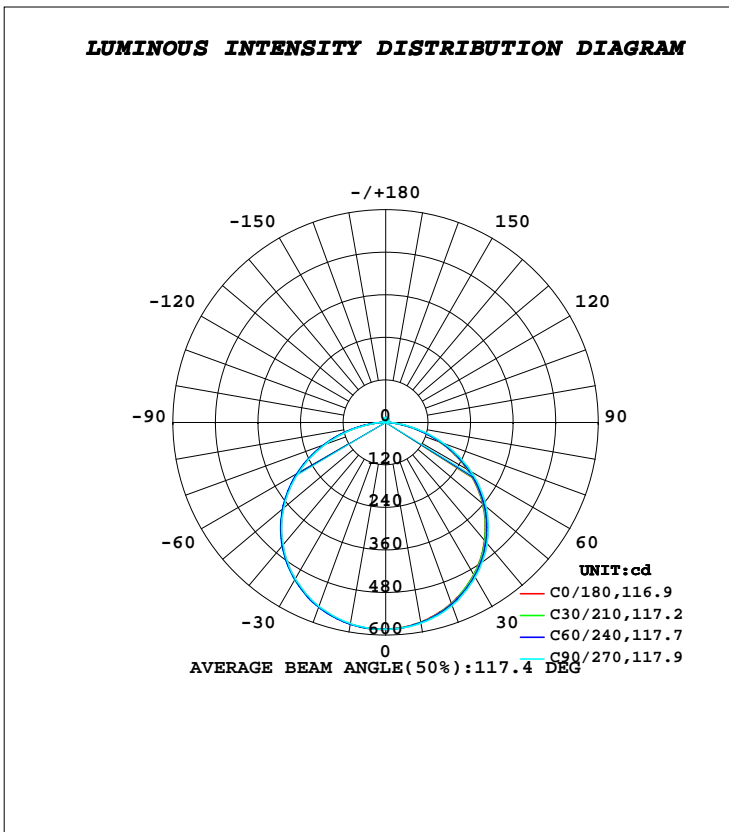


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.000V I:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 94.18 lm/W
MODEL		I _{max} (cd)	583.9	S/MH(C0/180)	1.27	
NOMINAL POWER(W)	19.2	LOR(%)	100.0	S/MH(C90/270)	1.29	
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1808.2	η UP, DN(C0-180)	1.4, 48.1	
NOMINAL FLUX(lm)	1808.22	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.5, 49.1	
LAMPS INSIDE	1	η up(%)	2.8	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	24	η down(%)	97.2	CIBSE SHR MAX	1.35	



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-12-15

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:

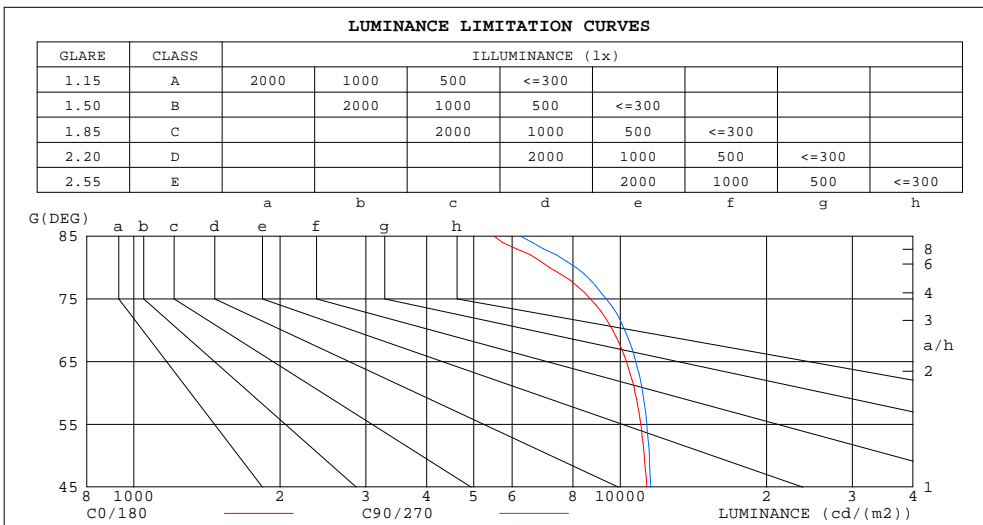
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	572.2	572.9	574.8	576.7	577.4	577.3	575.7	574.1	0- 10	55.31	55.31	3.06,3.06
20	542.7	545.1	549.3	552.4	553.6	553.9	551.4	546.9	10- 20	159.4	214.7	11.9,11.9
30	496.5	499.3	505.0	509.4	510.7	512.3	509.5	501.9	20- 30	244.1	458.8	25.4,25.4
40	434.5	438.4	445.6	450.5	452.3	454.0	450.4	441.5	30- 40	299.0	757.8	41.9,41.9
50	357.3	361.5	370.0	375.0	378.5	379.9	375.5	365.7	40- 50	316.2	1074	59.4,59.4
60	266.3	270.5	279.0	284.4	287.7	288.9	283.9	274.2	50- 60	291.7	1366	75.5,75.5
70	163.9	167.4	175.3	181.1	185.5	185.7	180.1	171.3	60- 70	226.2	1592	88,88
80	61.70	64.30	70.68	75.87	81.14	80.11	73.80	65.66	70- 80	129.7	1722	95.2,95.2
90	4.899	5.326	3.815	5.037	5.965	7.001	5.402	6.741	80- 90	35.42	1757	97.2,97.2
100	4.869	4.925	4.958	4.769	5.632	5.767	5.974	5.895	90-100	5.453	1763	97.5,97.5
110	6.099	6.205	6.271	6.094	6.748	6.907	7.019	6.984	100-110	6.272	1769	97.8,97.8
120	7.446	7.499	7.575	7.506	7.927	8.117	8.095	8.102	110-120	7.103	1776	98.2,98.2
130	8.806	8.789	8.873	8.880	9.117	9.340	9.227	9.219	120-130	7.538	1784	98.6,98.6
140	10.03	10.04	10.17	10.19	10.25	10.48	10.37	10.32	130-140	7.454	1791	99,99
150	11.20	11.23	11.44	11.41	11.32	11.56	11.52	11.40	140-150	6.779	1798	99.4,99.4
160	12.35	12.41	12.67	12.54	12.37	12.56	12.60	12.44	150-160	5.514	1803	99.7,99.7
170	13.29	13.40	13.66	13.46	13.28	13.40	13.50	13.36	160-170	3.663	1807	99.9,99.9
180	13.79	13.93	14.18	13.97	13.88	13.97	14.00	13.95	170-180	1.302	1808	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:2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5509	6240
80	7162	8118
75	8683	9357
70	9660	10223
65	10301	10769
60	10737	11126
55	11023	11343
50	11204	11479
45	11341	11556

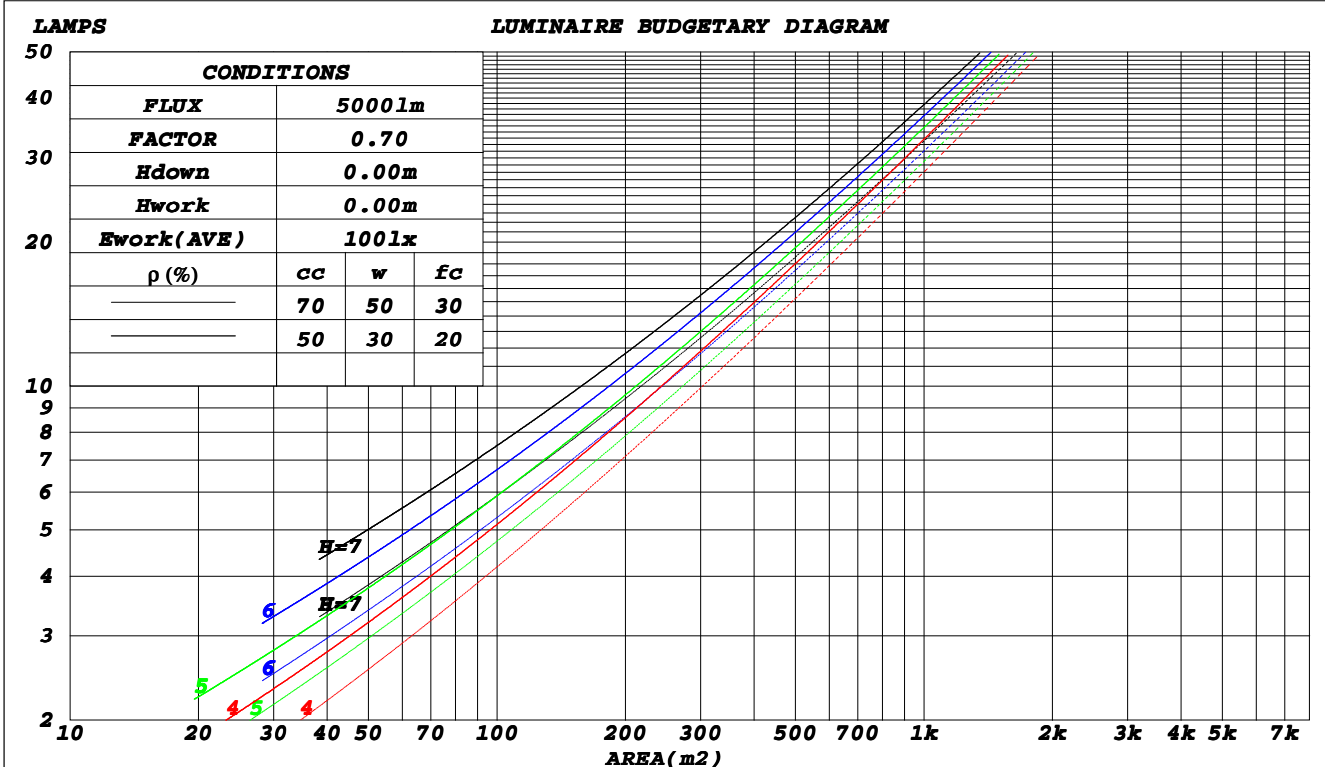
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

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	1.10	1.10	1.10	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.03	.99	.95	1.00	.96	.93	.96	.92	.89	.91	.89	.86	.87	.85	.83	.81
2.0	.89	.82	.77	.87	.81	.76	.83	.78	.73	.80	.75	.71	.76	.72	.69	.67
3.0	.78	.70	.63	.76	.69	.63	.73	.67	.61	.70	.64	.60	.67	.62	.58	.56
4.0	.69	.60	.53	.68	.59	.53	.65	.58	.52	.62	.56	.51	.60	.54	.50	.48
5.0	.62	.53	.46	.60	.52	.45	.58	.50	.45	.56	.49	.44	.53	.48	.43	.41
6.0	.55	.46	.40	.54	.46	.40	.52	.45	.39	.50	.44	.38	.48	.42	.38	.36
7.0	.50	.41	.35	.49	.41	.35	.47	.40	.34	.46	.39	.34	.44	.38	.33	.31
8.0	.46	.37	.31	.45	.37	.31	.43	.36	.31	.42	.35	.30	.40	.34	.30	.28
9.0	.42	.34	.28	.41	.33	.28	.40	.33	.28	.38	.32	.27	.37	.31	.27	.25
10.0	.39	.31	.25	.38	.30	.25	.37	.30	.25	.36	.29	.25	.35	.29	.24	.23



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

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	.314	.178	.057	.306	.174	.055	.291	.167	.053	.277	.160	.051	.265	.153	.049	
2.0	.295	.162	.050	.288	.159	.049	.275	.153	.047	.262	.147	.046	.251	.142	.045	
3.0	.272	.145	.043	.266	.143	.043	.254	.138	.042	.244	.133	.041	.233	.129	.040	
4.0	.251	.131	.038	.246	.129	.038	.235	.125	.037	.225	.121	.037	.216	.118	.036	
5.0	.232	.118	.034	.227	.117	.034	.218	.113	.033	.209	.110	.033	.201	.107	.032	
6.0	.215	.108	.031	.210	.106	.031	.202	.104	.030	.194	.101	.030	.187	.098	.029	
7.0	.200	.099	.028	.196	.098	.028	.188	.095	.027	.181	.093	.027	.175	.091	.027	
8.0	.187	.091	.026	.183	.090	.025	.176	.088	.025	.170	.086	.025	.164	.084	.024	
9.0	.175	.084	.024	.171	.084	.023	.165	.082	.023	.159	.080	.023	.154	.078	.023	
10.0	.164	.079	.022	.161	.078	.022	.156	.076	.021	.150	.075	.021	.145	.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																
1.0	.212	.212	.212	.181	.181	.181	.124	.124	.124	.071	.071	.071	.023	.023	.023	
2.0	.194	.154	.119	.167	.132	.103	.114	.092	.072	.066	.053	.042	.021	.017	.014	
3.0	.187	.136	.096	.160	.118	.083	.110	.082	.058	.064	.048	.034	.020	.015	.011	
4.0	.179	.123	.080	.154	.106	.070	.106	.074	.049	.061	.043	.029	.020	.014	.010	
5.0	.172	.113	.069	.148	.098	.060	.102	.068	.042	.059	.040	.025	.019	.013	.008	
6.0	.165	.104	.061	.142	.090	.053	.098	.063	.038	.057	.037	.022	.018	.012	.007	
7.0	.158	.098	.055	.136	.085	.048	.094	.059	.034	.055	.035	.020	.018	.011	.007	
8.0	.152	.092	.051	.130	.080	.044	.090	.056	.031	.053	.033	.019	.017	.011	.006	
9.0	.146	.087	.047	.125	.075	.041	.087	.053	.029	.051	.031	.018	.016	.010	.006	
10.0	.140	.083	.045	.121	.072	.039	.084	.051	.028	.049	.030	.017	.016	.010	.005	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

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	21.0	22.5	21.3	22.8	23.0	21.1	22.6	21.5	22.9	23.2
3H	22.5	23.9	22.9	24.2	24.5	22.7	24.1	23.0	24.4	24.7
4H	23.1	24.4	23.5	24.7	25.0	23.3	24.6	23.7	24.9	25.2
6H	23.5	24.7	23.8	25.0	25.4	23.7	24.9	24.1	25.3	25.6
8H	23.5	24.7	23.9	25.1	25.4	23.8	25.0	24.2	25.3	25.7
12H	23.6	24.7	24.0	25.1	25.4	23.9	25.0	24.3	25.4	25.7
4H 2H	21.6	23.0	22.0	23.3	23.6	21.7	23.0	22.1	23.4	23.7
3H	23.3	24.5	23.7	24.8	25.2	23.5	24.6	23.9	25.0	25.3
4H	24.0	25.1	24.4	25.4	25.8	24.2	25.2	24.6	25.6	26.0
6H	24.5	25.4	24.9	25.8	26.2	24.7	25.6	25.1	26.0	26.4
8H	24.6	25.5	25.1	25.9	26.3	24.8	25.7	25.3	26.1	26.6
12H	24.7	25.5	25.1	25.9	26.4	24.9	25.7	25.4	26.2	26.6
8H 4H	24.2	25.1	24.7	25.5	26.0	24.4	25.3	24.9	25.7	26.1
6H	24.8	25.6	25.3	26.0	26.5	25.0	25.7	25.5	26.2	26.7
8H	25.0	25.7	25.5	26.2	26.7	25.3	25.9	25.8	26.4	26.9
12H	25.2	25.7	25.7	26.2	26.8	25.4	25.9	25.9	26.4	27.0
12H 4H	24.2	25.0	24.7	25.5	25.9	24.4	25.2	24.9	25.6	26.1
6H	24.9	25.5	25.4	26.0	26.5	25.1	25.7	25.6	26.2	26.7
8H	25.1	25.7	25.6	26.2	26.7	25.3	25.9	25.8	26.4	26.9
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.2 / - 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, 1808 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 2.1)
 Area: 0.05 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

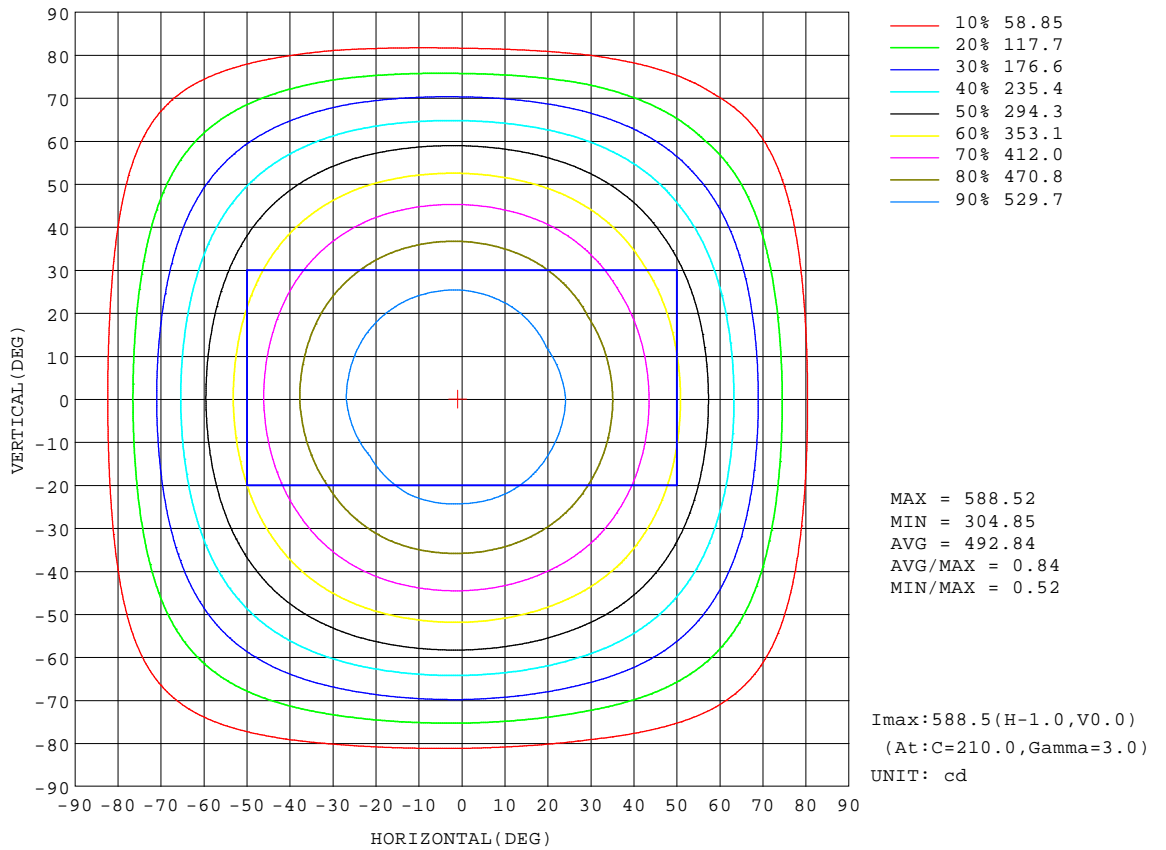
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	44	37	55	44	37	54	43	37	30
0.80	66	54	47	65	54	46	63	53	46	39
1.00	74	63	56	73	62	55	70	63	54	47
1.25	81	71	63	80	70	63	77	68	62	54
1.50	87	76	69	85	75	69	81	73	67	59
2.00	94	85	78	92	83	77	88	81	75	67
2.50	98	90	83	95	88	82	91	85	80	71
3.00	101	94	88	99	92	87	94	89	84	75
4.00	105	99	94	103	97	93	98	93	90	80
5.00	108	103	98	105	100	97	100	96	93	83
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:2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	



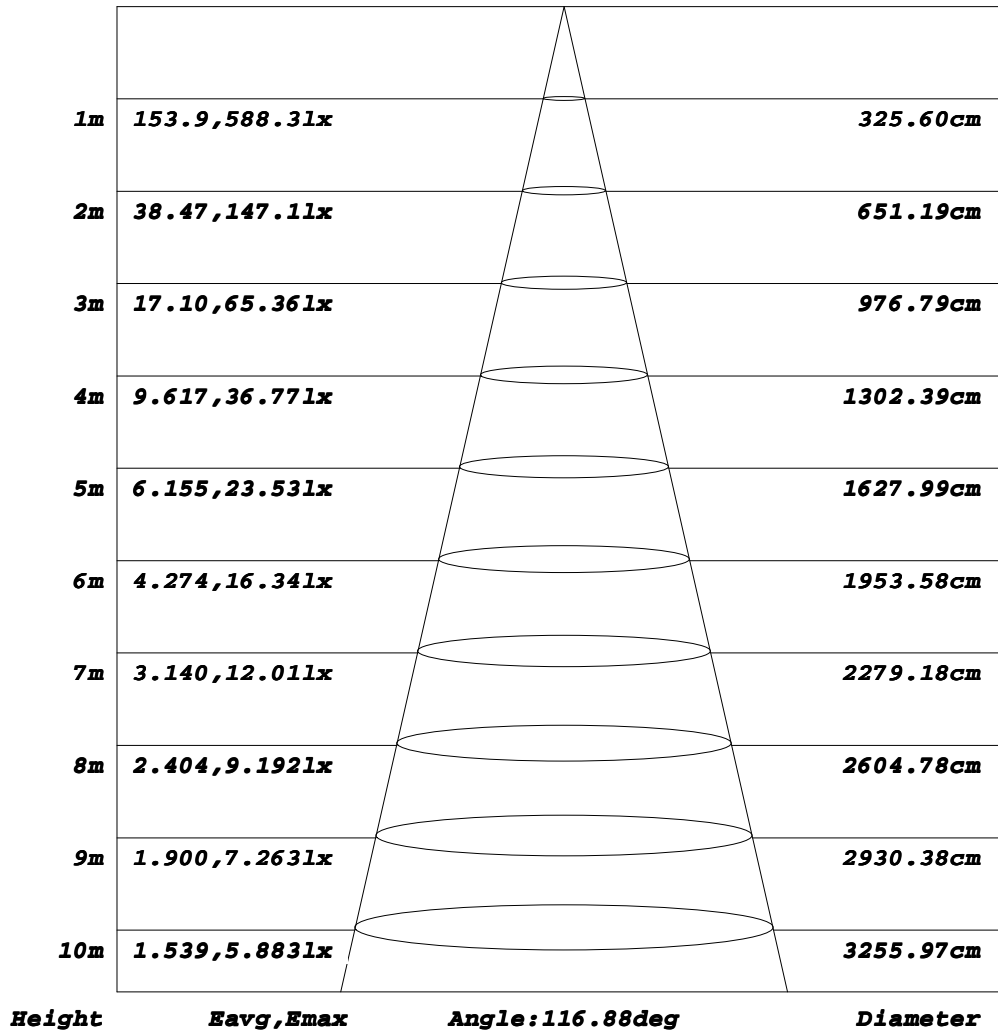
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

Flux out:1339 lm



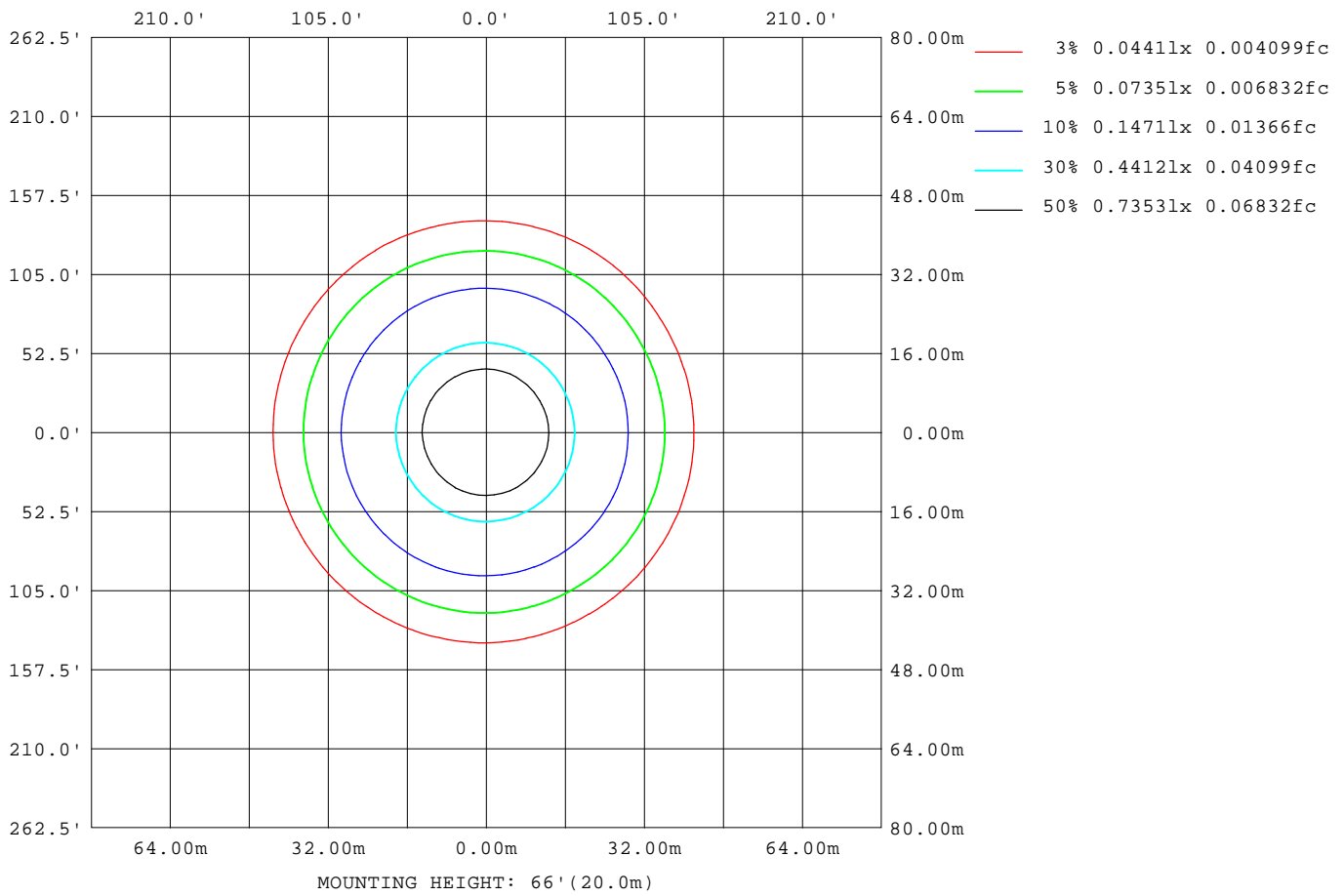
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-12-15

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

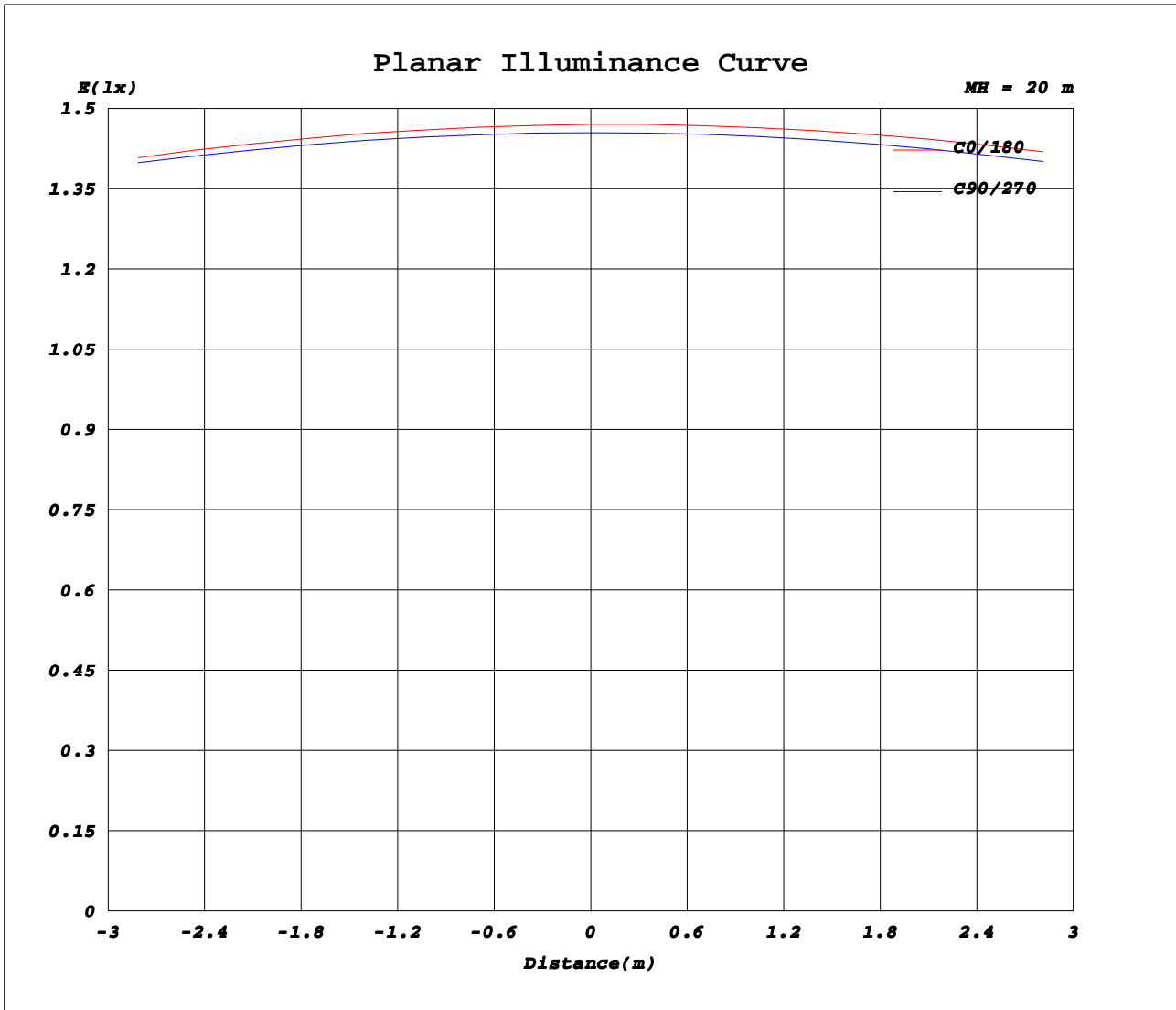
Test:U:24.000V I:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-12-15

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: 2020-12-15

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:0.7990A P:19.200W PF:1.0000 Freq:0Hz		
Lamp Flux:1808.22x1 lm		
NAME: FLS200W-DUAL-WW	TYPE: LED	
MFR.:	DIM.: 1m	

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	584	584	584	584	584	584	584	584	584	584	584	584							
5	580	580	581	581	582	583	583	582	583	582	581	581							
10	572	573	573	575	576	577	577	577	577	576	575	573							
15	559	561	562	564	566	568	568	568	568	566	564	562							
20	543	544	546	549	551	554	554	554	554	551	549	545							
25	522	522	526	528	532	533	535	535	535	533	528	524							
30	497	497	501	505	508	510	511	513	512	509	504	500							
35	468	469	473	477	481	484	484	486	485	482	476	472							
40	434	436	441	446	449	452	452	454	454	450	445	438							
45	398	400	404	410	413	416	417	419	419	415	409	402							
50	357	359	364	370	373	377	378	379	380	376	370	361							
55	314	316	320	326	330	334	334	336	336	332	326	318							
60	266	269	272	279	282	286	288	289	289	284	278	270							
65	216	218	221	228	232	236	238	238	239	233	228	220							
70	164	166	168	175	178	184	186	186	186	180	175	167							
75	111	114	115	121	124	130	133	132	132	126	122	109							
80	61.7	64.5	64.1	70.7	72.4	79.3	81.1	80.1	80.2	73.8	70.7	60.6							
85	23.8	24.6	25.0	27.3	29.8	33.9	35.4	35.1	35.2	30.8	27.3	25.6							
90	4.90	5.38	5.27	3.81	5.11	4.96	5.96	6.40	7.60	5.40	7.06	6.42							
95	4.30	4.46	4.34	4.34	4.28	4.14	5.14	5.32	5.32	5.47	5.44	5.57							
100	4.87	4.94	4.91	4.96	4.87	4.67	5.63	5.76	5.78	5.97	5.81	5.98							
105	5.44	5.54	5.56	5.62	5.53	5.28	6.17	6.31	6.34	6.50	6.36	6.46							
110	6.10	6.21	6.20	6.27	6.21	5.98	6.75	6.89	6.92	7.02	6.93	7.04							
115	6.77	6.88	6.84	6.92	6.89	6.71	7.32	7.49	7.51	7.54	7.49	7.59							
120	7.45	7.54	7.46	7.57	7.56	7.45	7.93	8.11	8.12	8.09	8.04	8.17							
125	8.13	8.19	8.10	8.22	8.24	8.16	8.51	8.73	8.73	8.65	8.60	8.73							
130	8.81	8.83	8.74	8.87	8.92	8.84	9.12	9.36	9.32	9.23	9.15	9.29							
135	9.44	9.46	9.38	9.53	9.58	9.50	9.70	9.93	9.89	9.80	9.69	9.84							
140	10.0	10.1	10.0	10.2	10.2	10.2	10.3	10.5	10.5	10.4	10.3	10.4							
145	10.6	10.6	10.6	10.8	10.8	10.8	10.8	11.0	11.0	10.9	10.8	10.9							
150	11.2	11.2	11.2	11.4	11.4	11.4	11.3	11.5	11.6	11.5	11.4	11.4							
155	11.8	11.8	11.9	12.1	12.0	12.0	11.9	12.0	12.1	12.1	11.9	11.9							
160	12.4	12.3	12.5	12.7	12.6	12.5	12.4	12.5	12.6	12.6	12.5	12.4							
165	12.9	12.9	13.0	13.2	13.1	13.0	12.9	12.9	13.1	13.1	13.0	12.9							
170	13.3	13.3	13.5	13.7	13.5	13.4	13.3	13.3	13.5	13.5	13.4	13.3							
175	13.6	13.6	13.8	14.0	13.8	13.8	13.7	13.7	13.8	13.8	13.7	13.7							
180	13.8	13.8	14.0	14.2	14.0	13.9	13.9	13.9	14.1	14.0	13.9	13.9							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2020-12-15

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: