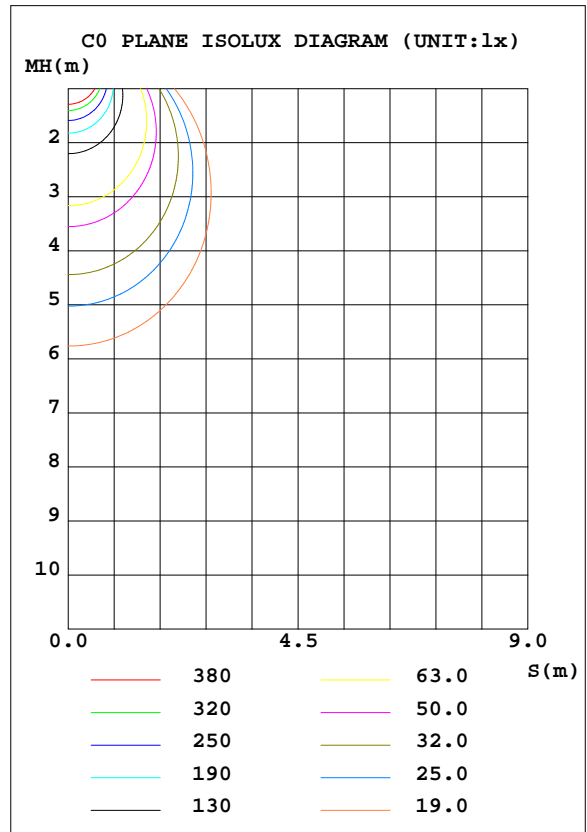
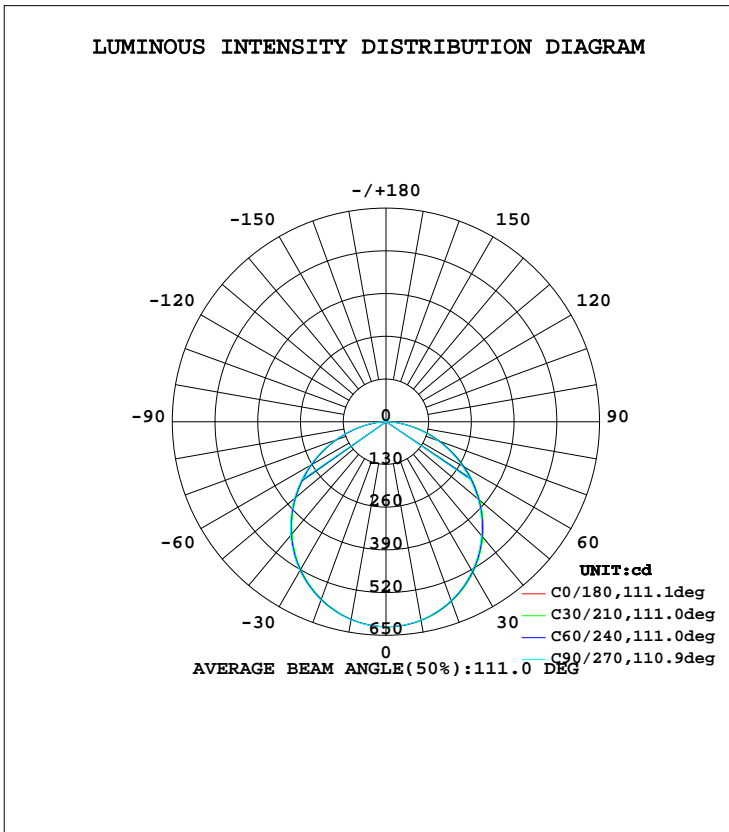


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 94.06 lm/W			
MODEL	CP20W-WW	I _{max} (cd)	624.0	S/MH(C0/180)	1.26
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.25
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1787.2	η UP, DN(C0-180)	0.8, 49.3
NOMINAL FLUX(lm)	1787.19	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.8, 49.1
LAMPS INSIDE	1	η up(%)	1.6	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.2	η down(%)	98.4	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [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	613.8	613.6	612.1	610.6	610.7	610.9	612.2	614.1	0- 10	59.00	59.00	3.3,3.3
20	581.5	581.0	578.2	575.1	575.3	575.7	578.3	581.6	10- 20	168.7	227.7	12.7,12.7
30	528.4	527.9	523.8	519.5	519.8	520.4	524.0	528.7	20- 30	255.1	482.8	27,27
40	457.1	456.4	451.4	445.9	446.4	447.2	451.7	457.3	30- 40	306.4	789.2	44.2,44.2
50	371.1	370.2	364.6	358.1	359.3	359.8	364.6	371.3	40- 50	316.0	1105	61.8,61.8
60	275.0	273.3	266.4	260.6	261.1	262.0	267.7	274.3	50- 60	283.1	1388	77.7,77.7
70	174.1	172.0	165.7	159.5	161.0	161.2	166.2	173.5	60- 70	214.9	1603	89.7,89.7
80	77.82	73.57	70.12	61.24	66.42	63.99	71.29	74.06	70- 80	123.7	1727	96.6,96.6
90	1.306	1.196	0.7864	0.8362	1.054	1.038	1.003	1.420	80- 90	32.29	1759	98.4,98.4
100	1.626	1.620	1.669	1.757	2.026	2.010	1.942	1.856	90-100	1.452	1761	98.5,98.5
110	2.729	2.727	2.802	2.887	3.239	3.198	3.113	3.001	100-110	2.505	1763	98.7,98.7
120	3.930	3.918	3.998	4.095	4.458	4.420	4.330	4.227	110-120	3.528	1767	98.9,98.9
130	5.142	5.139	5.234	5.313	5.683	5.641	5.572	5.457	120-130	4.279	1771	99.1,99.1
140	6.333	6.347	6.432	6.493	6.808	6.794	6.730	6.629	130-140	4.630	1776	99.4,99.4
150	7.405	7.426	7.489	7.533	7.826	7.782	7.703	7.648	140-150	4.446	1780	99.6,99.6
160	8.341	8.342	8.400	8.420	8.631	8.569	8.549	8.506	150-160	3.712	1784	99.8,99.8
170	9.151	9.150	9.156	9.187	9.282	9.249	9.215	9.220	160-170	2.497	1786	100,100
180	9.519	9.529	9.534	9.537	9.554	9.523	9.498	9.537	170-180	0.8929	1787	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

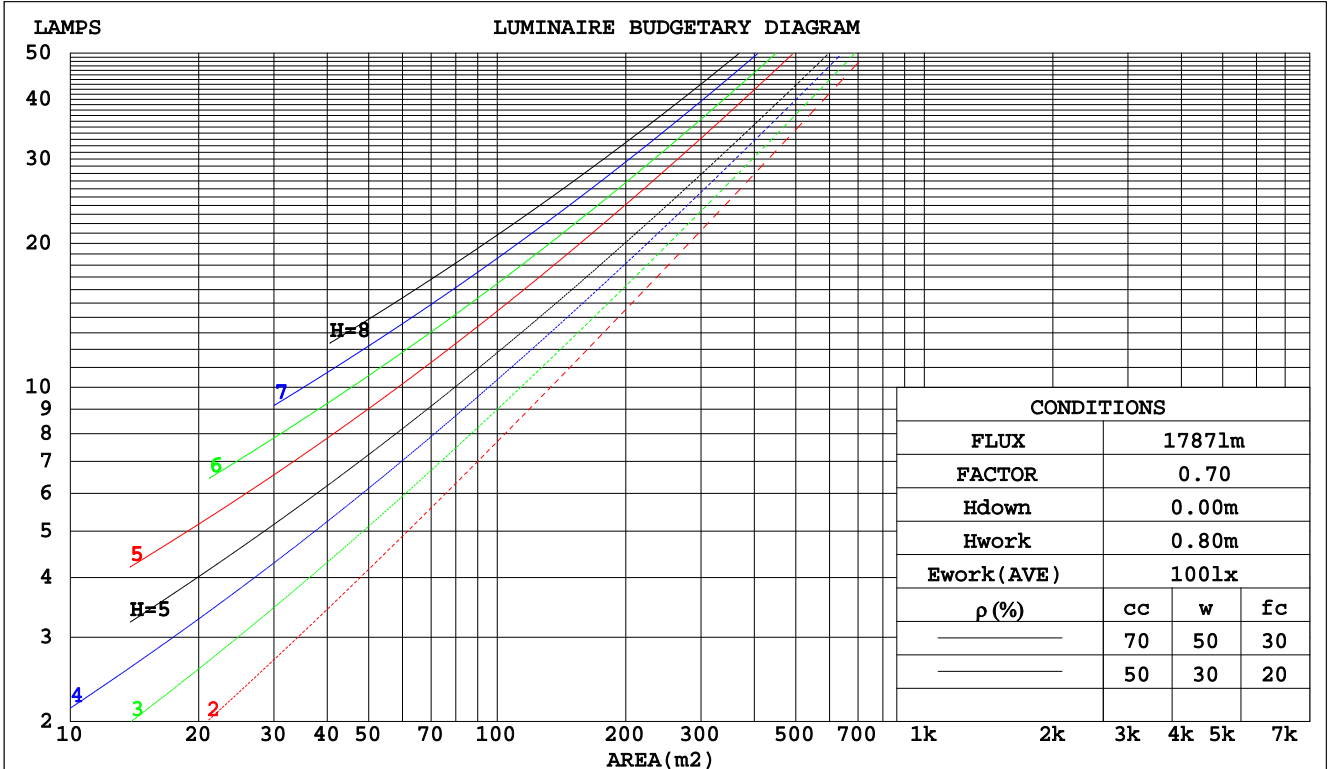
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Coefficients of Utilization(CU)															
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	.98
1.0	1.04	.99	.95	1.01	.97	.94	.97	.93	.90	.92	.90	.87	.89	.87	.85	.82
2.0	.90	.83	.78	.88	.82	.77	.84	.79	.75	.81	.76	.73	.78	.74	.71	.69
3.0	.79	.71	.64	.77	.70	.64	.74	.68	.62	.71	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.55	.69	.60	.54	.66	.59	.53	.63	.57	.52	.61	.56	.51	.49
5.0	.63	.54	.47	.61	.53	.47	.59	.52	.46	.57	.50	.45	.55	.49	.45	.43
6.0	.56	.47	.41	.55	.47	.41	.53	.46	.40	.52	.45	.40	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.40	.35	.45	.39	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.32	.42	.36	.31	.29
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.28	.39	.33	.28	.26
10.0	.39	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.308	.175	.056	.301	.171	.054	.286	.164	.052	.273	.158	.051	.261	.152	.049	
2.0	.290	.159	.049	.284	.156	.048	.271	.151	.047	.259	.146	.046	.249	.141	.044	
3.0	.269	.143	.043	.263	.141	.042	.252	.136	.041	.241	.132	.041	.232	.128	.040	
4.0	.248	.129	.038	.243	.127	.038	.233	.124	.037	.224	.120	.036	.215	.117	.036	
5.0	.229	.117	.034	.225	.115	.034	.216	.112	.033	.208	.110	.033	.200	.107	.032	
6.0	.213	.107	.031	.209	.105	.030	.201	.103	.030	.193	.100	.030	.186	.098	.029	
7.0	.198	.098	.028	.194	.097	.028	.187	.095	.027	.181	.093	.027	.174	.091	.027	
8.0	.185	.090	.025	.182	.089	.025	.175	.088	.025	.169	.086	.025	.164	.084	.024	
9.0	.173	.084	.023	.170	.083	.023	.165	.081	.023	.159	.080	.023	.154	.078	.023	
10.0	.163	.078	.022	.160	.077	.022	.155	.076	.021	.150	.075	.021	.146	.073	.021	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.202	.202	.202	.173	.173	.173	.118	.118	.118	.068	.068	.068	.022	.022	.022	
1.0	.192	.168	.147	.164	.144	.126	.112	.099	.087	.065	.057	.051	.021	.018	.016	
2.0	.184	.144	.110	.158	.124	.095	.108	.086	.066	.062	.050	.039	.020	.016	.013	
3.0	.176	.126	.087	.151	.109	.075	.104	.076	.053	.060	.044	.031	.019	.014	.010	
4.0	.169	.113	.071	.145	.098	.061	.100	.068	.043	.058	.040	.026	.019	.013	.008	
5.0	.161	.103	.060	.139	.089	.052	.095	.062	.037	.055	.036	.022	.018	.012	.007	
6.0	.154	.094	.052	.133	.082	.045	.091	.057	.032	.053	.034	.019	.017	.011	.006	
7.0	.147	.088	.046	.127	.076	.040	.088	.053	.028	.051	.031	.017	.016	.010	.006	
8.0	.141	.082	.041	.121	.071	.036	.084	.050	.025	.049	.029	.015	.016	.010	.005	
9.0	.135	.077	.038	.116	.067	.033	.081	.047	.023	.047	.028	.014	.015	.009	.005	
10.0	.129	.073	.035	.111	.063	.030	.077	.044	.022	.045	.026	.013	.015	.009	.004	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm										
NAME: CP20W-WW					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:3000K			SERIAL No.:1		
MFR.:					SUR.:0.085			PROTECTION 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	24.2	25.7	24.5	25.9	26.1	24.0	25.5	24.3	25.7	26.0
3H	25.7	27.1	26.1	27.4	27.6	25.5	26.9	25.8	27.1	27.4
4H	26.4	27.7	26.7	28.0	28.3	26.1	27.4	26.4	27.7	28.0
6H	26.9	28.1	27.2	28.4	28.7	26.5	27.8	26.9	28.1	28.4
8H	27.0	28.2	27.4	28.5	28.8	26.6	27.8	27.0	28.2	28.5
12H	27.1	28.3	27.5	28.6	28.9	26.7	27.9	27.1	28.2	28.5
4H 2H	24.8	26.1	25.1	26.4	26.7	24.6	26.0	25.0	26.2	26.5
3H	26.5	27.7	26.9	28.0	28.3	26.3	27.5	26.7	27.8	28.1
4H	27.3	28.3	27.7	28.7	29.1	27.0	28.1	27.4	28.4	28.8
6H	27.9	28.8	28.3	29.2	29.6	27.6	28.5	28.0	28.9	29.3
8H	28.1	29.0	28.6	29.4	29.8	27.8	28.6	28.2	29.0	29.4
12H	28.3	29.1	28.7	29.5	29.9	27.9	28.7	28.3	29.1	29.5
8H 4H	27.6	28.4	28.0	28.8	29.2	27.3	28.2	27.8	28.6	29.0
6H	28.3	29.0	28.8	29.5	29.9	28.0	28.7	28.5	29.2	29.6
8H	28.6	29.3	29.1	29.7	30.2	28.3	28.9	28.8	29.4	29.9
12H	28.9	29.4	29.4	29.9	30.4	28.5	29.0	29.0	29.5	30.0
12H 4H	27.6	28.4	28.0	28.8	29.2	27.3	28.1	27.8	28.6	29.0
6H	28.4	29.0	28.9	29.5	29.9	28.1	28.7	28.6	29.2	29.7
8H	28.7	29.3	29.2	29.7	30.2	28.4	28.9	28.9	29.4	29.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 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 Corrected 1787 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.0)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

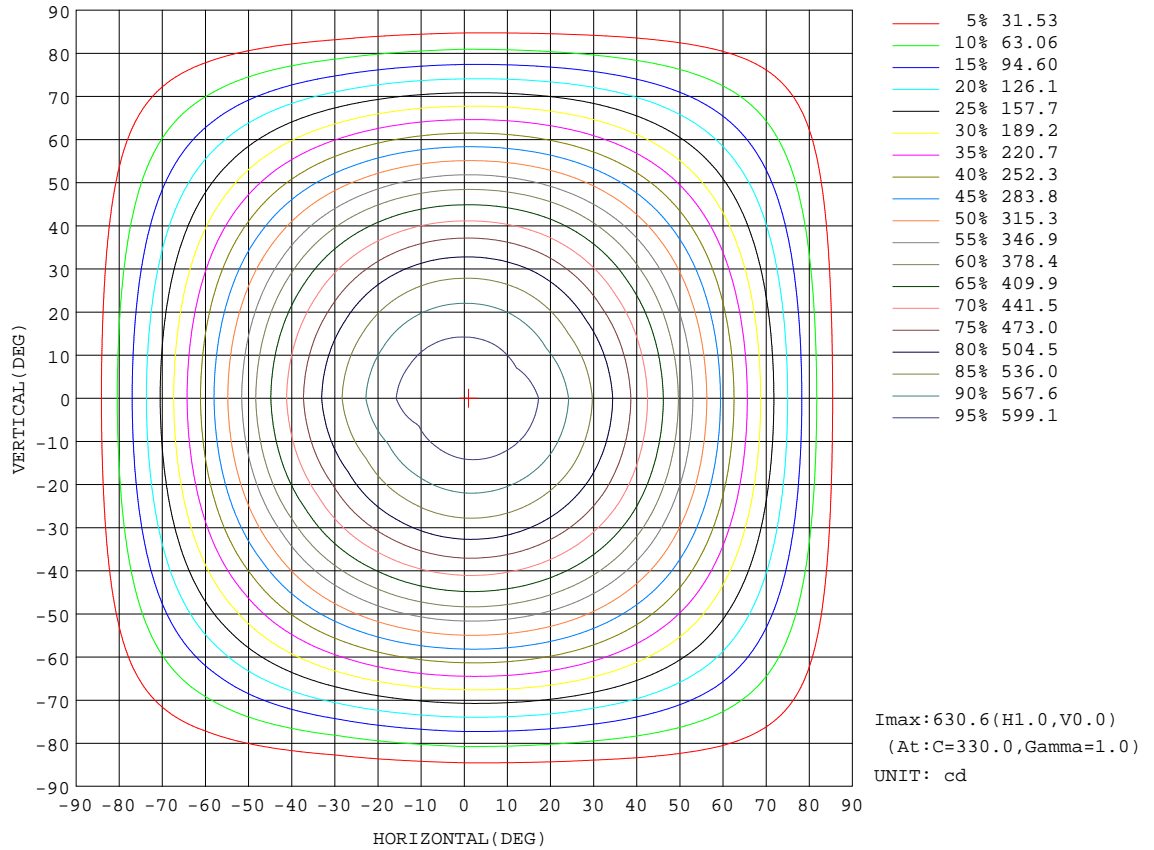
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	46	39	56	45	39	55	45	38	32
0.80	67	56	48	66	55	48	64	54	48	41
1.00	76	65	57	74	64	57	72	65	56	49
1.25	83	72	65	81	71	65	78	70	64	56
1.50	88	78	71	86	77	70	83	75	69	61
2.00	95	86	80	93	85	79	89	82	77	69
2.50	98	91	85	96	89	84	92	86	82	73
3.00	102	95	89	100	93	88	95	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	97	94	85
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:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

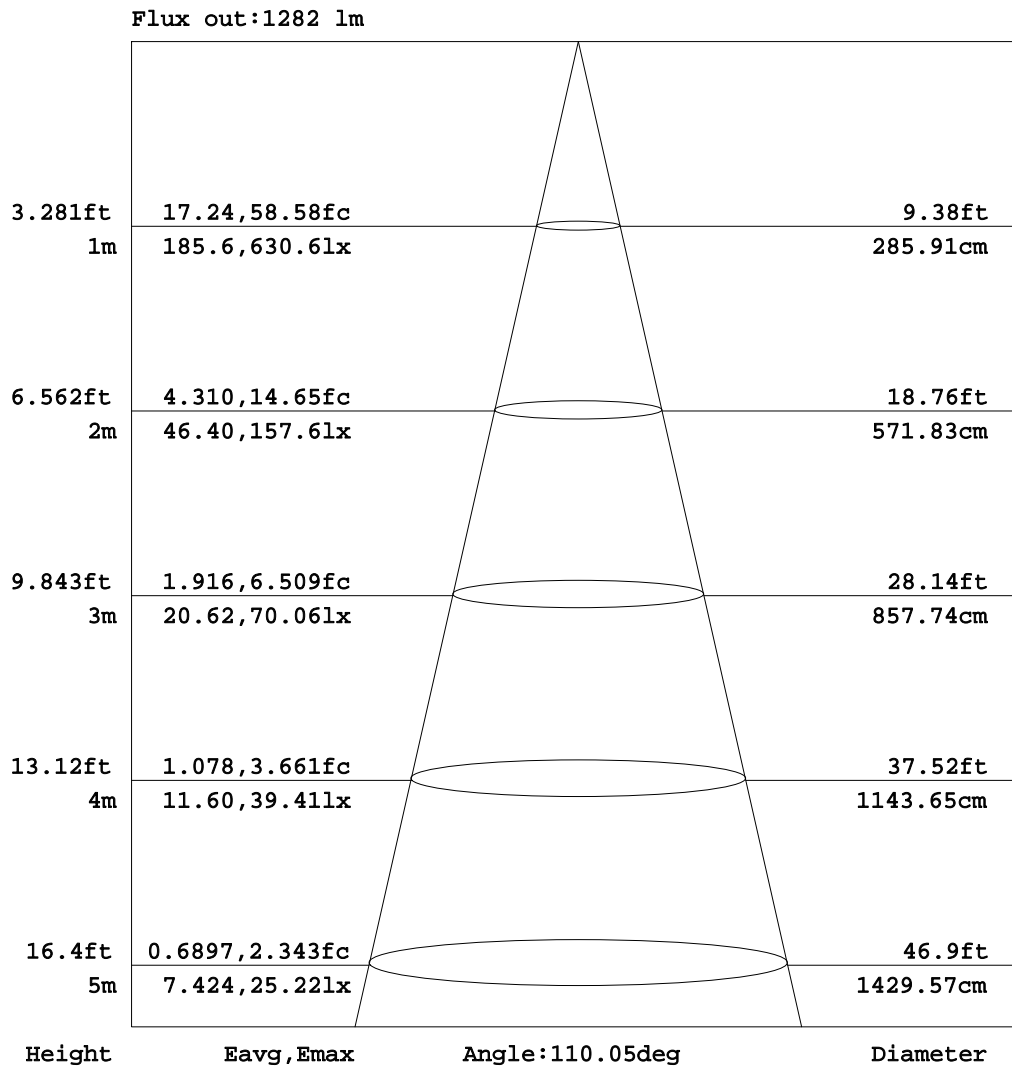


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

AAI Figure

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:



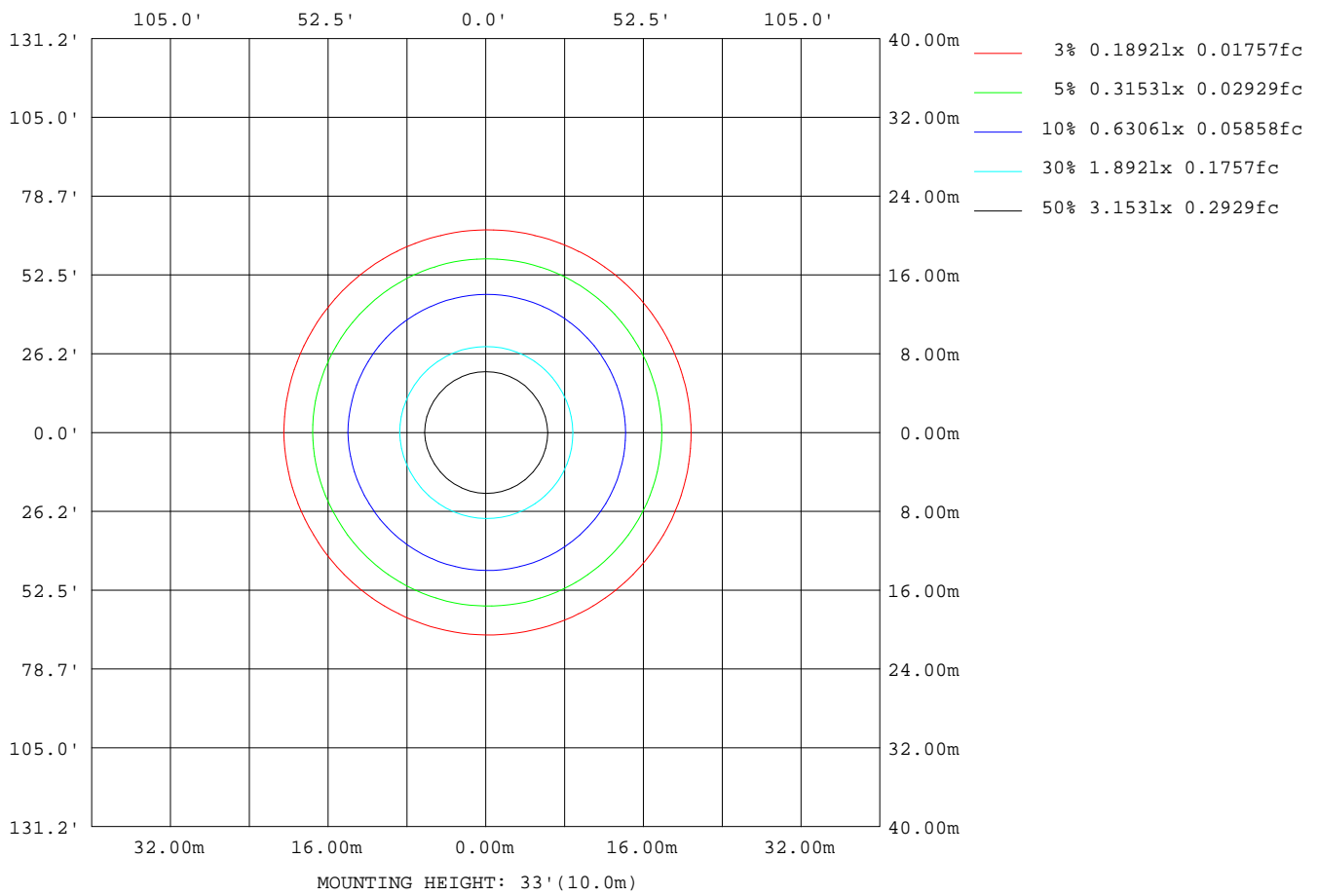
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

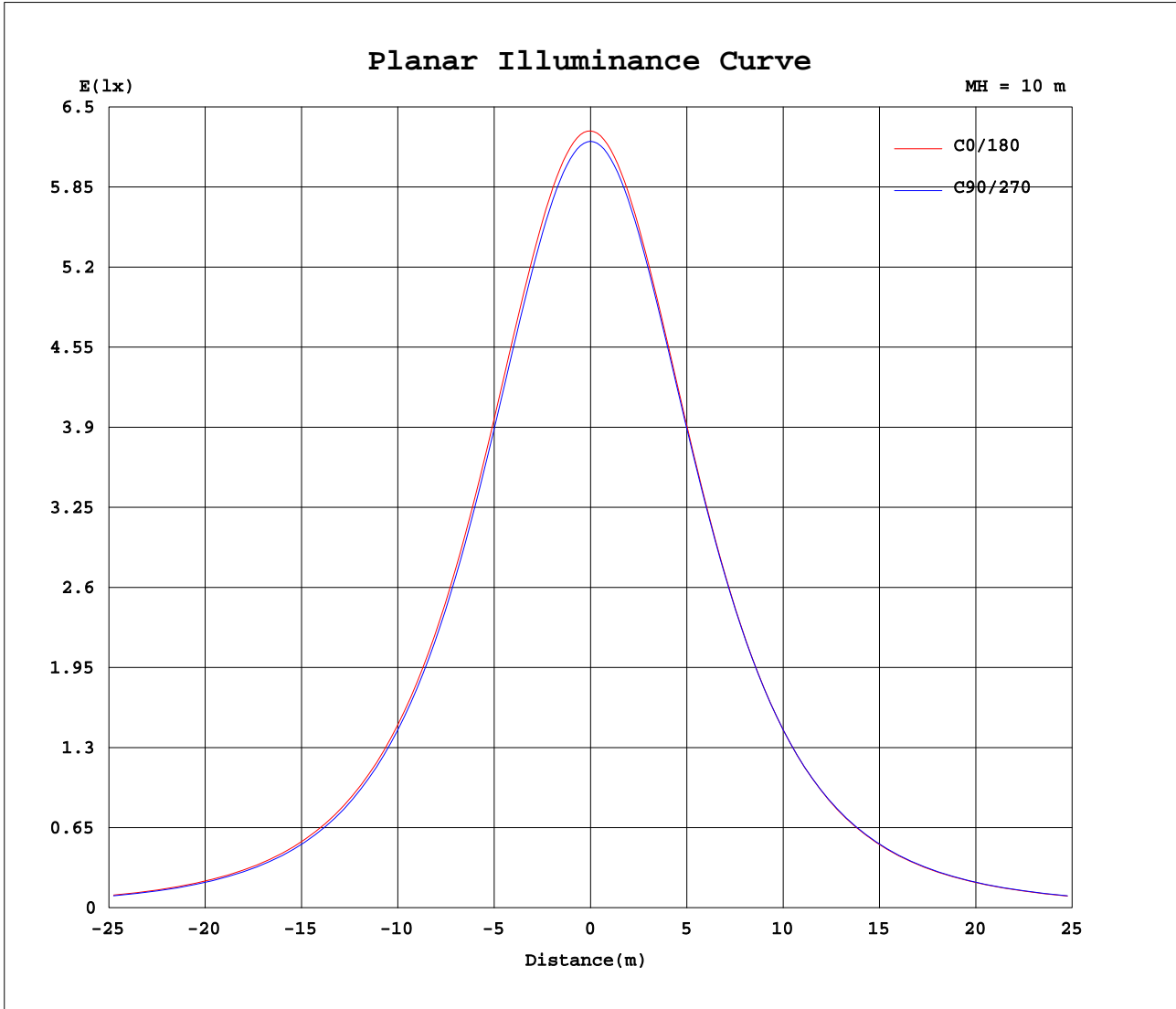
Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.3V I:0.0830A P:19.00W PF:0.9500 Lamp Flux:1787.19x1 lm		
NAME: CP20W-WW	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.085	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	624	624	624	624	624	624	624	624	624	624	624	624							
5	622	622	621	621	620	620	620	620	620	621	622	622							
10	614	614	613	612	611	610	611	611	611	612	614	614							
15	600	601	599	598	596	595	596	595	597	598	600	601							
20	581	582	580	578	576	575	575	575	577	578	581	582							
25	557	558	556	553	550	549	550	549	551	554	557	558							
30	528	529	526	524	520	519	520	519	522	524	528	529							
35	495	496	493	490	485	484	485	484	487	490	495	496							
40	457	458	455	451	447	445	446	446	449	452	457	458							
45	416	417	413	409	404	403	404	403	406	410	415	417							
50	371	372	368	365	359	357	359	358	362	365	370	372							
55	324	324	321	316	311	309	310	310	312	317	322	325							
60	275	275	272	266	262	260	261	261	263	268	273	276							
65	225	225	221	216	211	209	211	211	213	217	222	226							
70	174	175	170	166	160	159	161	160	162	166	172	175							
75	125	125	120	116	110	109	112	111	112	117	122	125							
80	77.8	76.0	71.1	70.1	61.3	61.2	66.4	63.6	64.4	71.3	72.4	75.7							
85	34.5	33.4	29.5	28.0	22.6	21.6	24.2	23.1	24.7	29.2	31.3	33.4							
90	1.31	1.40	0.99	0.79	0.82	0.85	1.05	1.05	1.02	1.00	1.28	1.56							
95	1.15	1.12	1.13	1.20	1.23	1.27	1.49	1.52	1.47	1.41	1.37	1.34							
100	1.63	1.61	1.63	1.67	1.75	1.76	2.03	2.04	1.98	1.94	1.87	1.84							
105	2.15	2.13	2.17	2.22	2.28	2.32	2.61	2.62	2.56	2.51	2.43	2.39							
110	2.73	2.71	2.74	2.80	2.86	2.91	3.24	3.22	3.18	3.11	3.02	2.98							
115	3.33	3.30	3.32	3.40	3.47	3.50	3.85	3.83	3.78	3.71	3.64	3.60							
120	3.93	3.92	3.91	4.00	4.09	4.10	4.46	4.44	4.40	4.33	4.25	4.20							
125	4.54	4.51	4.54	4.61	4.69	4.71	5.08	5.05	5.01	4.95	4.88	4.81							
130	5.14	5.11	5.16	5.23	5.31	5.32	5.68	5.65	5.63	5.57	5.49	5.42							
135	5.75	5.73	5.78	5.86	5.92	5.92	6.27	6.25	6.24	6.17	6.11	6.03							
140	6.33	6.31	6.38	6.43	6.49	6.49	6.81	6.80	6.79	6.73	6.67	6.59							
145	6.88	6.88	6.94	6.97	7.02	7.04	7.33	7.32	7.31	7.25	7.20	7.11							
150	7.41	7.42	7.44	7.49	7.52	7.55	7.83	7.79	7.77	7.70	7.67	7.63							
155	7.90	7.91	7.91	7.97	7.98	8.01	8.25	8.18	8.18	8.15	8.10	8.07							
160	8.34	8.34	8.34	8.40	8.42	8.42	8.63	8.56	8.58	8.55	8.52	8.49							
165	8.77	8.76	8.76	8.80	8.81	8.83	8.98	8.95	8.93	8.90	8.90	8.86							
170	9.15	9.16	9.14	9.16	9.17	9.21	9.28	9.26	9.24	9.22	9.23	9.21							
175	9.41	9.41	9.37	9.40	9.38	9.43	9.50	9.45	9.46	9.41	9.44	9.44							
180	9.52	9.54	9.52	9.53	9.53	9.55	9.55	9.51	9.54	9.50	9.54	9.53							

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-04-27

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks: