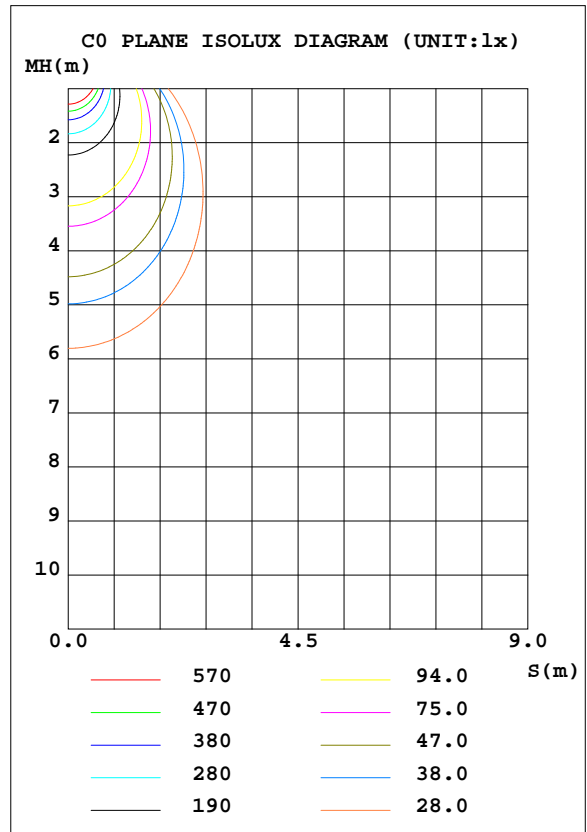
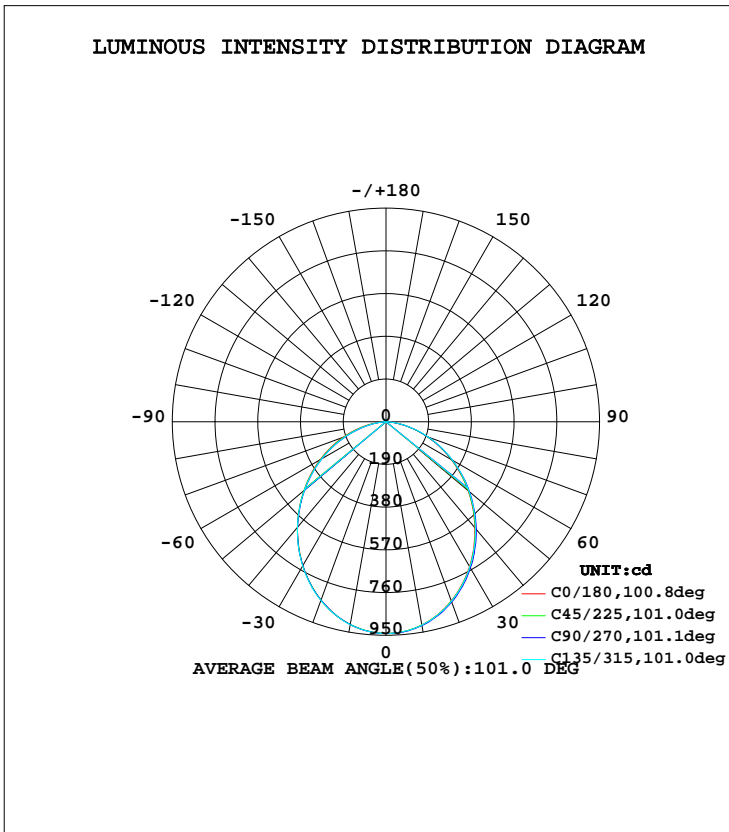


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 108.13 lm/W			
MODEL	CP20W-CC	I <sub>max</sub> (cd)	942.0	S/MH(C0/180)	1.18
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.18
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2378.8	η UP, DN(C0-180)	0.7, 49.1
NOMINAL FLUX(lm)	2378.83	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.6, 49.7
LAMPS INSIDE	1	η up(%)	1.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.1	η down(%)	98.8	CIBSE SHR MAX	1.35



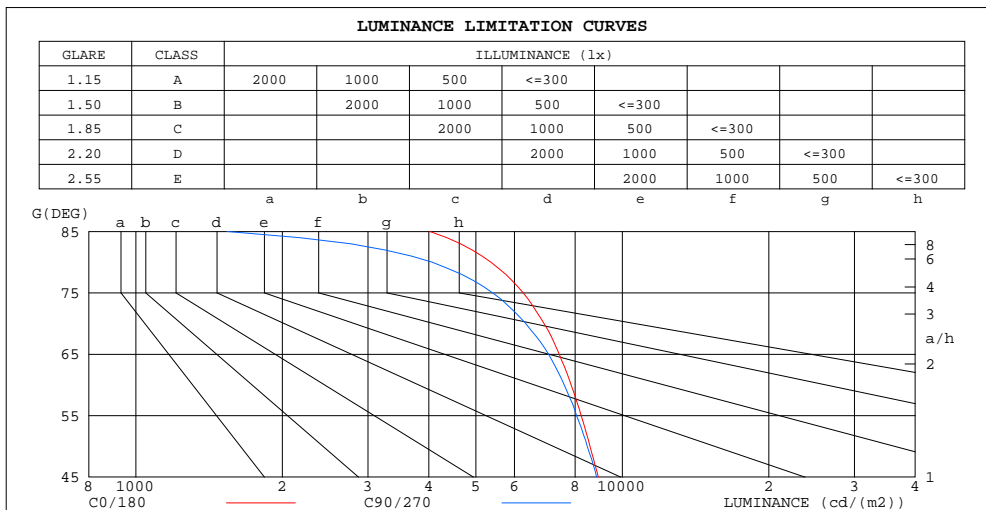
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
10	916.5	915.1	915.7	916.5	917.7	917.0	921.0	918.6	0- 10	88.72	88.72	3.73,3.73
20	844.8	844.2	844.8	846.5	848.1	849.5	854.0	850.2	10- 20	250.1	338.8	14.2,14.2
30	739.5	739.5	739.3	740.6	742.9	746.1	751.0	745.3	20- 30	367.8	706.6	29.7,29.7
40	612.4	612.9	611.1	612.6	615.3	618.2	624.5	619.8	30- 40	426.1	1133	47.6,47.6
50	476.3	476.2	471.7	474.1	477.0	479.4	485.3	482.6	40- 50	422.4	1555	65.4,65.4
60	338.9	335.2	329.1	330.4	335.3	336.6	339.9	341.7	50- 60	363.7	1919	80.7,80.7
70	204.0	198.1	187.6	191.3	197.9	195.9	198.5	202.1	60- 70	263.1	2182	91.7,91.7
80	80.53	72.70	61.16	67.27	74.09	70.78	69.77	76.25	70- 80	139.5	2321	97.6,97.6
90	1.389	1.014	0.9297	0.9933	0.9128	0.8710	0.8108	0.8942	80- 90	28.19	2349	98.8,98.8
100	1.964	1.971	2.016	2.022	1.736	1.678	1.616	1.604	90-100	1.615	2351	98.8,98.8
110	3.256	3.268	3.313	3.347	2.963	2.830	2.825	2.799	100-110	2.565	2354	98.9,98.9
120	4.674	4.659	4.748	4.685	4.079	4.060	4.009	4.048	110-120	3.698	2357	99.1,99.1
130	6.147	5.961	6.042	5.980	5.351	5.238	5.265	5.282	120-130	4.500	2362	99.3,99.3
140	7.069	7.279	6.954	7.288	6.565	6.467	6.528	6.434	130-140	4.812	2367	99.5,99.5
150	8.506	8.459	8.723	8.485	7.669	7.506	7.648	7.544	140-150	4.658	2371	99.7,99.7
160	9.525	9.427	9.759	9.379	8.446	8.288	8.436	8.391	150-160	3.955	2375	99.9,99.9
170	9.533	9.947	9.640	9.836	9.197	9.194	9.267	9.250	160-170	2.615	2378	100,100
180	10.05	10.10	10.02	10.07	10.06	10.10	9.992	10.08	170-180	0.9257	2379	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4019	1540
80	5370	4066
75	6258	5414
70	6906	6334
65	7422	7051
60	7849	7599
55	8232	8053
50	8580	8471
45	8926	8855

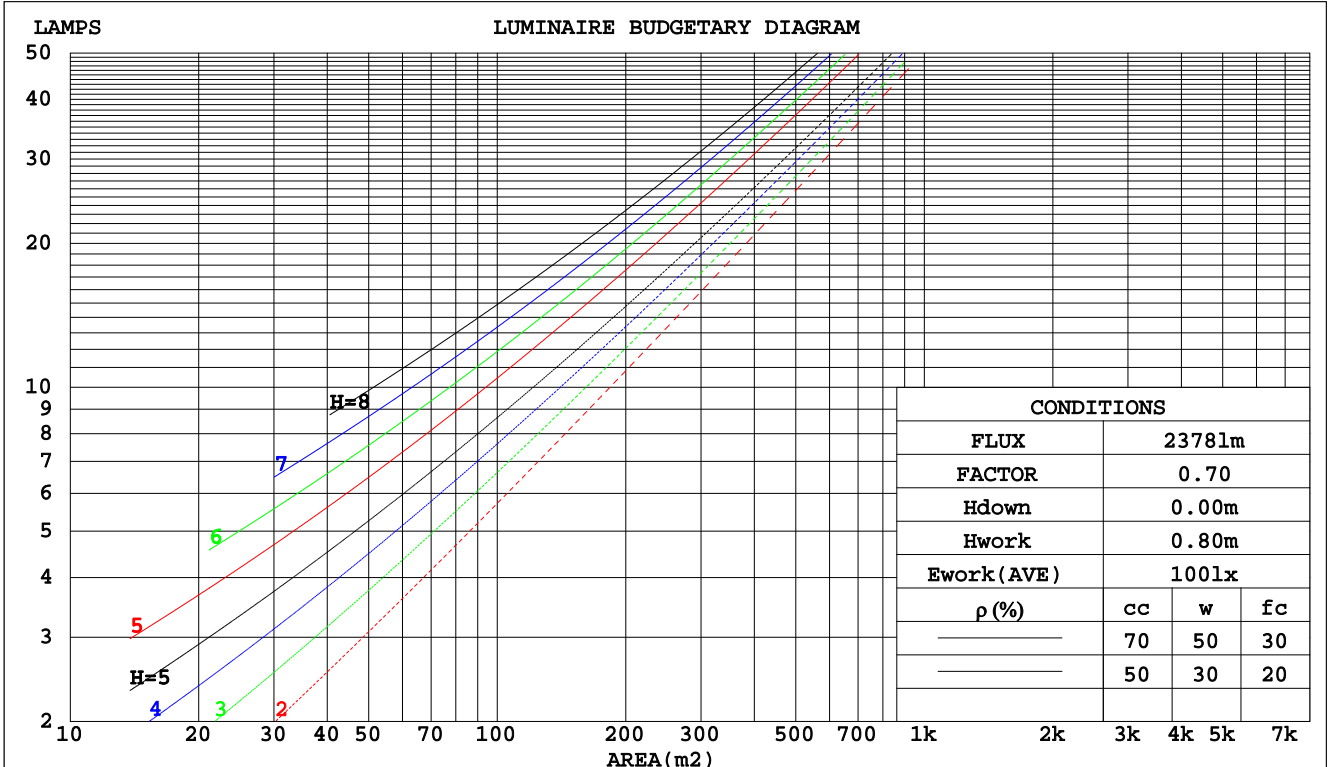
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2021-08-06

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
Humidity:65.0%  
Test Distance:10.237m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	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	.99
1.0	1.05	1.00	.97	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.92	.85	.80	.90	.84	.79	.86	.81	.77	.82	.78	.75	.79	.76	.73	.71
3.0	.81	.73	.67	.79	.72	.66	.76	.70	.65	.73	.68	.63	.70	.66	.62	.60
4.0	.72	.63	.57	.70	.63	.56	.68	.61	.55	.65	.59	.55	.63	.58	.54	.52
5.0	.64	.56	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.51	.47	.45
6.0	.58	.49	.43	.57	.49	.43	.55	.48	.42	.53	.47	.42	.52	.46	.41	.39
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.38	.49	.42	.37	.47	.41	.37	.35
8.0	.48	.40	.34	.48	.40	.34	.46	.39	.34	.45	.38	.34	.44	.38	.33	.31
9.0	.44	.36	.31	.44	.36	.31	.43	.35	.31	.41	.35	.30	.40	.34	.30	.28
10.0	.41	.33	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.37	.32	.27	.26



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	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	.292	.166	.053	.284	.162	.052	.270	.155	.050	.258	.149	.048	.246	.143	.046	
2.0	.278	.152	.047	.271	.149	.046	.259	.144	.045	.248	.139	.043	.237	.134	.042	
3.0	.259	.138	.041	.253	.136	.041	.242	.131	.040	.232	.127	.039	.223	.123	.038	
4.0	.240	.125	.037	.235	.123	.036	.225	.120	.036	.216	.116	.035	.208	.113	.034	
5.0	.223	.114	.033	.218	.112	.033	.210	.109	.032	.202	.106	.032	.194	.104	.031	
6.0	.207	.104	.030	.203	.103	.030	.196	.100	.029	.188	.098	.029	.182	.096	.028	
7.0	.193	.096	.027	.190	.095	.027	.183	.093	.027	.177	.091	.026	.171	.089	.026	
8.0	.181	.088	.025	.178	.088	.025	.172	.086	.024	.166	.084	.024	.160	.082	.024	
9.0	.170	.082	.023	.167	.081	.023	.162	.080	.023	.156	.078	.022	.151	.077	.022	
10.0	.160	.077	.021	.157	.076	.021	.152	.075	.021	.148	.073	.021	.143	.072	.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	.200	.200	.200	.171	.171	.171	.117	.117	.117	.067	.067	.067	.021	.021	.021	
1.0	.189	.166	.145	.161	.142	.125	.110	.098	.086	.064	.057	.050	.020	.018	.016	
2.0	.180	.142	.109	.154	.122	.094	.106	.084	.066	.061	.049	.039	.020	.016	.013	
3.0	.172	.124	.085	.147	.107	.074	.101	.074	.052	.058	.043	.031	.019	.014	.010	
4.0	.164	.110	.069	.141	.095	.060	.097	.066	.042	.056	.039	.025	.018	.013	.008	
5.0	.157	.100	.058	.135	.086	.050	.093	.060	.036	.054	.035	.021	.017	.012	.007	
6.0	.150	.092	.050	.129	.079	.043	.089	.055	.031	.052	.033	.018	.017	.011	.006	
7.0	.143	.085	.044	.123	.073	.038	.085	.051	.027	.049	.030	.016	.016	.010	.005	
8.0	.137	.079	.039	.118	.068	.034	.081	.048	.024	.047	.028	.014	.015	.009	.005	
9.0	.131	.074	.035	.113	.064	.031	.078	.045	.022	.045	.027	.013	.015	.009	.004	
10.0	.125	.070	.033	.108	.060	.028	.075	.043	.020	.044	.025	.012	.014	.008	.004	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm										
NAME: CP20W-CC					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:5700K			SERIAL No.:1		
MFR.:					SUR.:0.0865			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	20.0	21.4	20.3	21.7	21.9	19.9	21.4	20.2	21.6	21.8
3H	21.4	22.7	21.7	23.0	23.2	21.2	22.5	21.5	22.8	23.0
4H	21.9	23.2	22.2	23.4	23.7	21.6	22.9	21.9	23.2	23.4
6H	22.3	23.5	22.6	23.7	24.0	21.9	23.1	22.2	23.3	23.6
8H	22.4	23.5	22.7	23.8	24.1	21.9	23.0	22.2	23.3	23.7
12H	22.4	23.5	22.8	23.8	24.1	21.9	23.0	22.2	23.3	23.6
4H 2H	20.5	21.8	20.9	22.1	22.4	20.5	21.7	20.8	22.0	22.3
3H	22.1	23.2	22.5	23.5	23.8	21.9	23.0	22.3	23.3	23.7
4H	22.7	23.7	23.1	24.1	24.4	22.5	23.5	22.9	23.8	24.2
6H	23.2	24.1	23.6	24.5	24.9	22.8	23.7	23.2	24.1	24.5
8H	23.3	24.2	23.8	24.6	25.0	22.9	23.7	23.3	24.1	24.5
12H	23.4	24.2	23.9	24.6	25.0	22.9	23.6	23.3	24.0	24.5
8H 4H	22.9	23.8	23.4	24.2	24.6	22.7	23.5	23.1	23.9	24.3
6H	23.5	24.2	24.0	24.6	25.1	23.1	23.8	23.6	24.3	24.7
8H	23.7	24.3	24.2	24.8	25.2	23.3	23.9	23.7	24.3	24.8
12H	23.8	24.4	24.3	24.8	25.3	23.3	23.8	23.8	24.3	24.8
12H 4H	22.9	23.7	23.4	24.1	24.5	22.7	23.5	23.1	23.9	24.3
6H	23.5	24.1	24.0	24.6	25.1	23.2	23.8	23.7	24.2	24.7
8H	23.8	24.3	24.3	24.8	25.3	23.3	23.8	23.8	24.3	24.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3				

CIE Pub.117 Corrected 2379 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.0)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

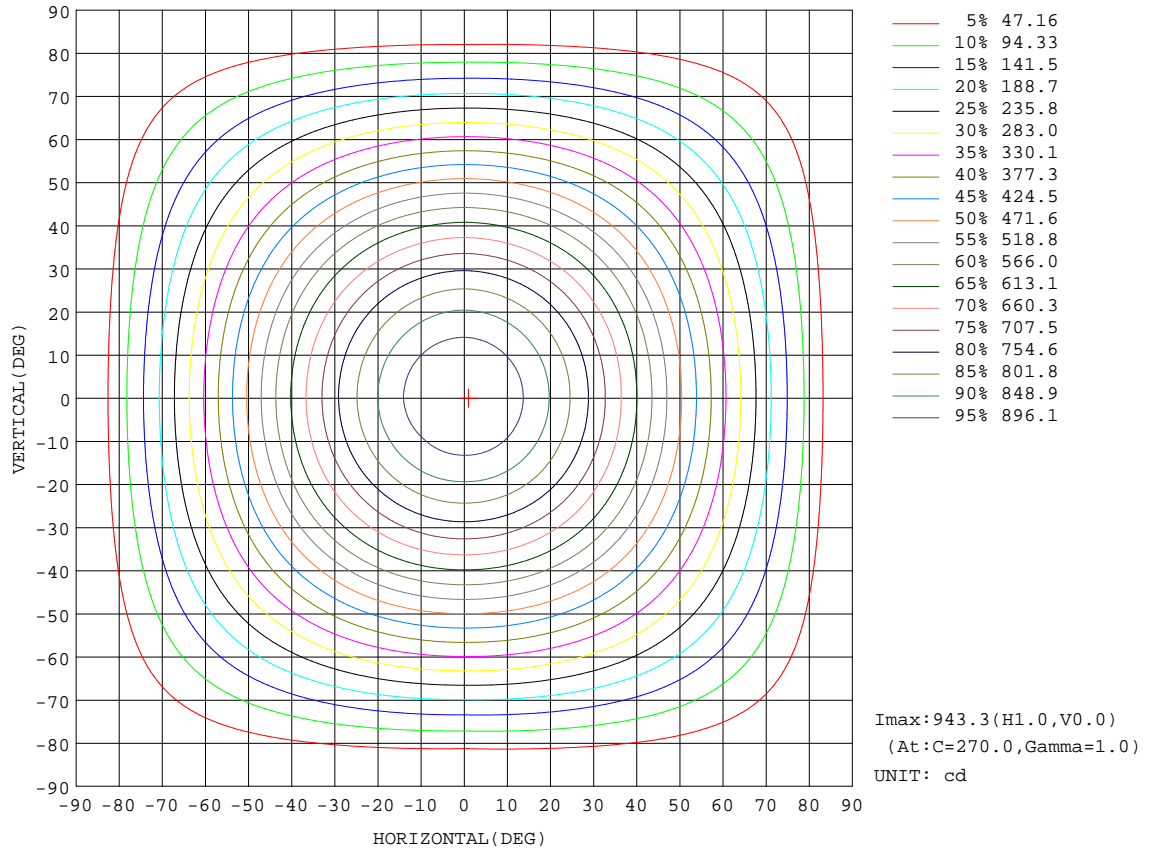
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	58	48	41	57	47	41	35
0.80	69	58	51	68	58	51	66	57	50	44
1.00	78	67	60	76	66	60	74	67	59	52
1.25	85	74	68	83	74	67	80	72	66	59
1.50	89	80	73	88	79	73	85	77	72	64
2.00	96	88	82	94	87	81	91	84	79	71
2.50	100	92	87	98	91	86	94	88	84	75
3.00	103	96	91	101	95	90	97	92	88	79
4.00	107	101	97	104	100	95	100	96	93	84
5.00	109	104	101	107	102	99	102	99	96	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

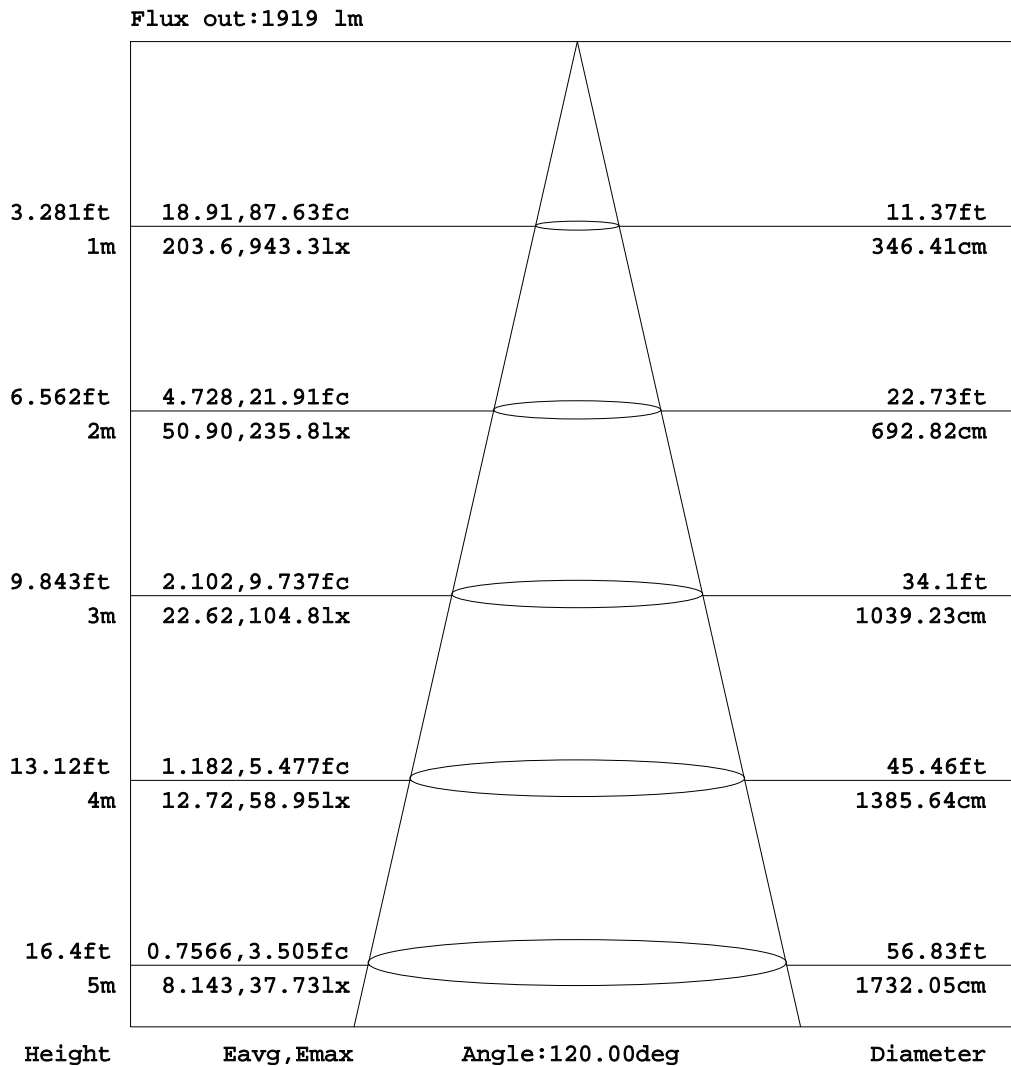


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 10.237m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:



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

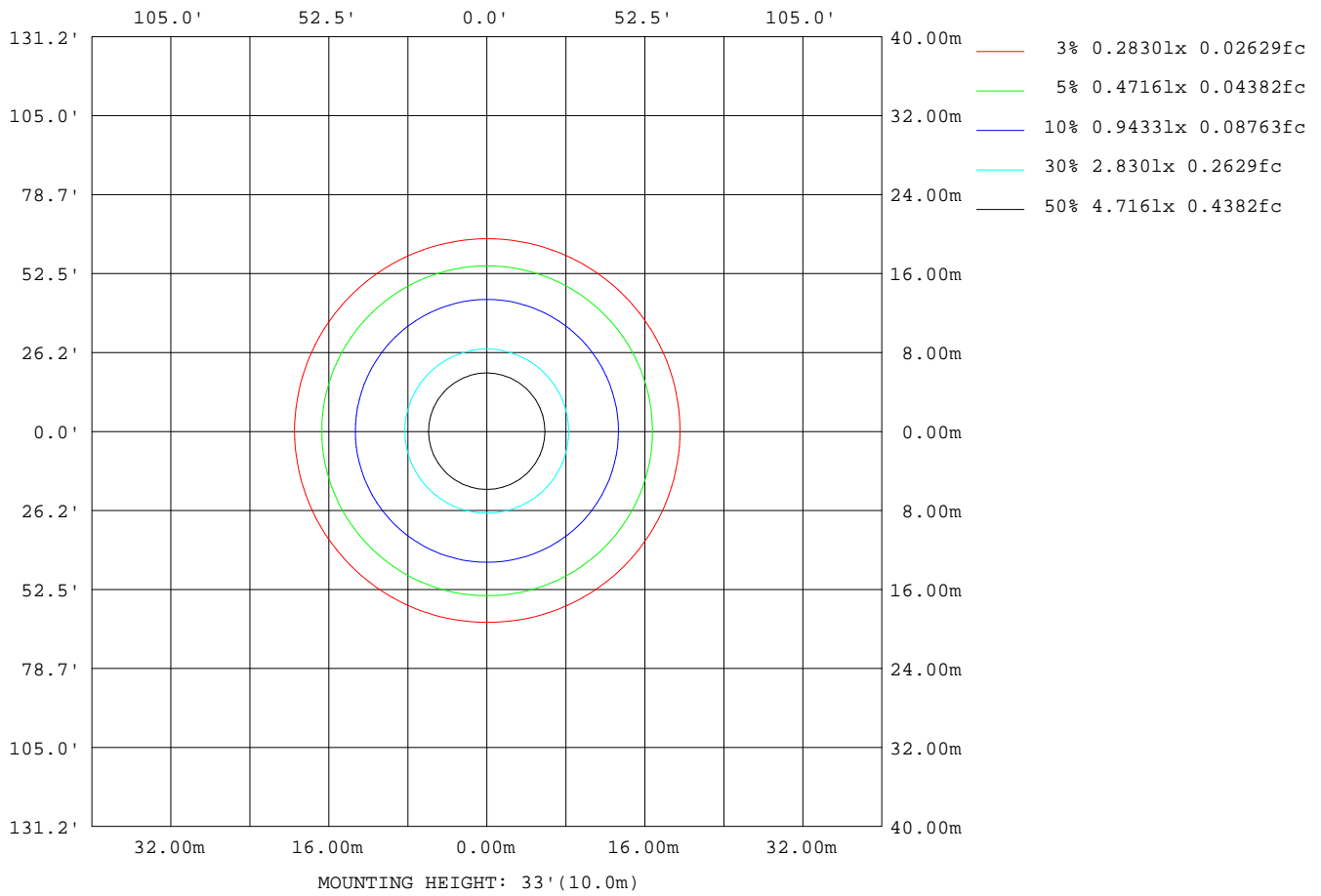
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

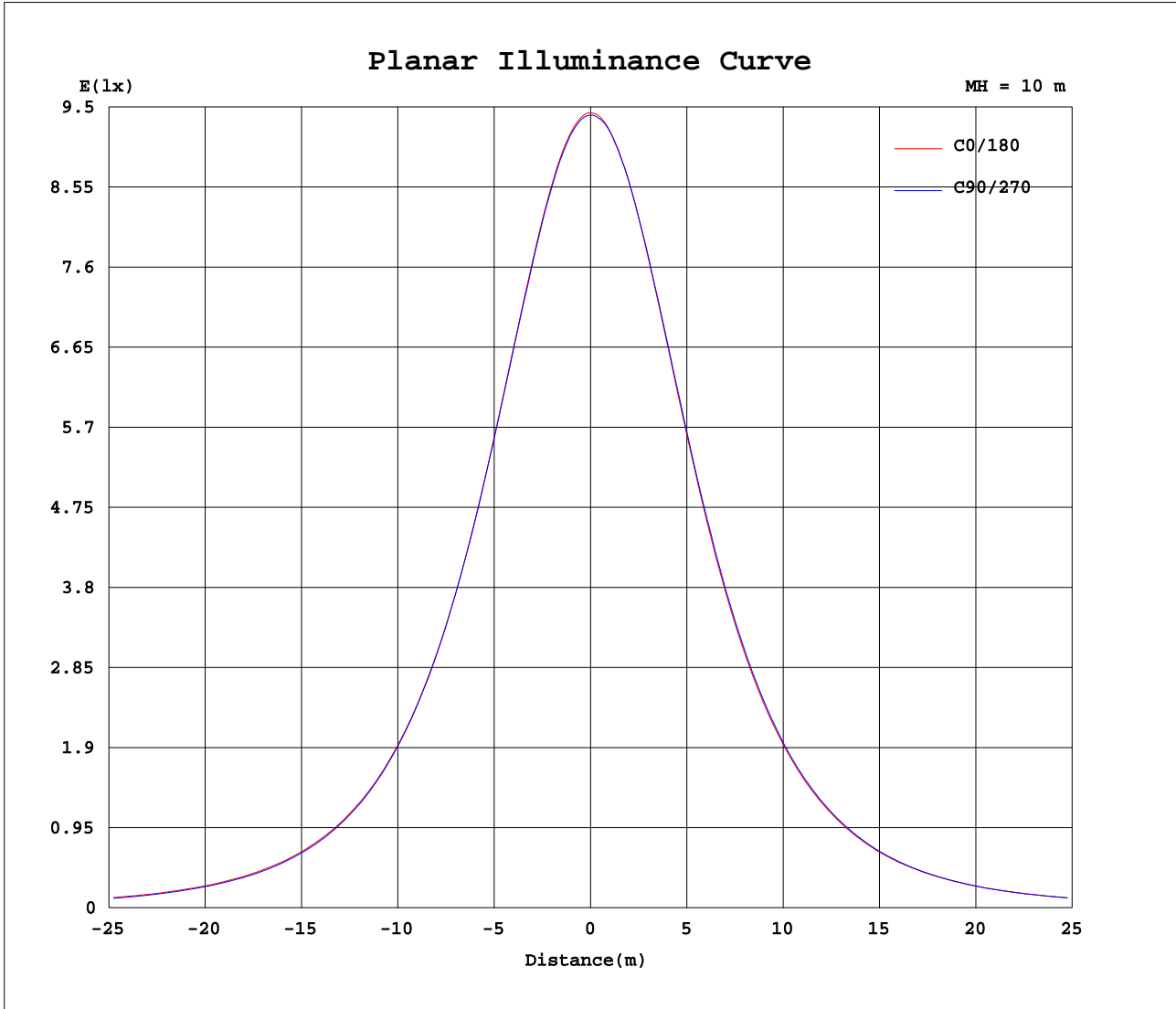
Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2021-08-06

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 10.237m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.0V I:0.0950A P:22.00W PF:0.9890 Lamp Flux:2378.83x1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\ γ (DEG)	0	45	90	135	180	225	270	315											
0	942	942	942	942	942	942	942	942											
5	935	934	935	935	936	936	938	936											
10	916	915	916	916	918	917	921	919											
15	886	885	885	886	888	889	893	890											
20	845	844	845	847	848	849	854	850											
25	796	795	796	797	799	802	807	802											
30	739	740	739	741	743	746	751	745											
35	677	678	679	679	681	684	690	684											
40	612	613	611	613	615	618	624	620											
45	545	545	542	544	547	550	555	552											
50	476	476	472	474	477	479	485	483											
55	408	405	400	401	405	408	413	412											
60	339	335	329	330	335	337	340	342											
65	271	266	258	260	266	266	268	272											
70	204	198	188	191	198	196	198	202											
75	140	132	121	126	133	130	132	137											
80	80.5	72.7	61.2	67.3	74.1	70.8	69.8	76.2											
85	30.2	20.4	11.6	17.3	25.2	20.0	17.6	23.2											
90	1.39	1.01	0.93	0.99	0.91	0.87	0.81	0.89											
95	1.39	1.63	2.02	1.47	1.26	1.21	1.63	1.49											
100	1.96	1.97	2.02	2.02	1.74	1.68	1.62	1.60											
105	2.57	2.60	2.62	2.67	2.32	2.22	2.17	2.20											
110	3.26	3.27	3.31	3.35	2.96	2.83	2.83	2.80											
115	3.97	3.99	4.02	4.07	3.62	3.45	3.46	3.44											
120	4.67	4.66	4.75	4.69	4.08	4.06	4.01	4.05											
125	5.42	5.34	5.47	5.33	4.73	4.69	4.61	4.68											
130	6.15	5.96	6.04	5.98	5.35	5.24	5.26	5.28											
135	6.70	6.63	6.35	6.66	5.98	5.83	5.89	5.83											
140	7.07	7.28	6.95	7.29	6.56	6.47	6.53	6.43											
145	7.60	7.90	7.97	7.92	7.14	6.95	7.13	6.98											
150	8.51	8.46	8.72	8.48	7.67	7.51	7.65	7.54											
155	9.05	8.97	9.27	8.96	8.27	8.04	8.31	8.09											
160	9.52	9.43	9.76	9.38	8.45	8.29	8.44	8.39											
165	9.43	9.69	10.1	9.62	8.85	8.74	8.84	8.79											
170	9.53	9.95	9.64	9.84	9.20	9.19	9.27	9.25											
175	9.85	10.1	9.79	10.0	9.56	9.56	9.55	9.61											
180	10.1	10.1	10.0	10.1	10.1	10.1	9.99	10.1											

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks: