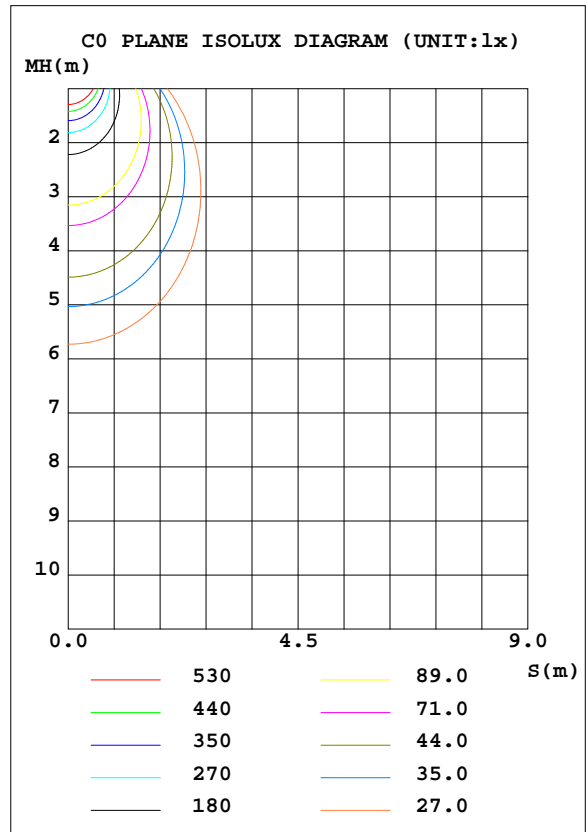
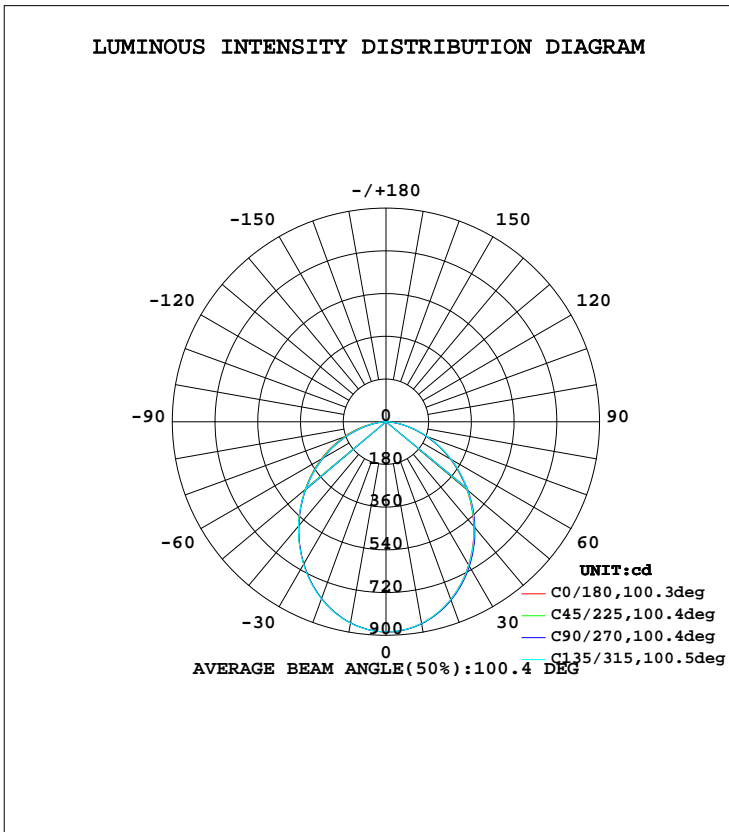


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 101.48 lm/W			
MODEL	CP20W-CC	I <sub>max</sub> (cd)	885.7	S/MH(C0/180)	1.17
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	1.17
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	2222.4	η UP, DN(C0-180)	0.7, 49.1
NOMINAL FLUX(lm)	2222.41	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



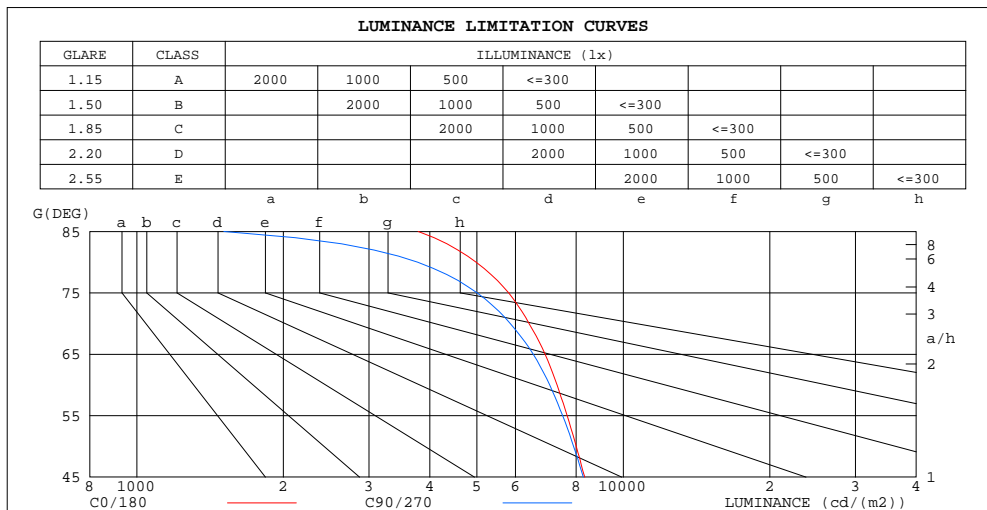
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	861.0	860.7	860.3	861.6	863.2	863.6	864.2	863.0	0- 10	83.41	83.41	3.75,3.75
20	793.0	793.4	792.8	794.6	796.6	798.2	800.6	797.1	10- 20	234.9	318.3	14.3,14.3
30	692.5	693.5	692.8	694.3	696.5	698.5	702.7	697.8	20- 30	344.9	663.2	29.8,29.8
40	572.4	573.6	571.3	573.3	575.4	578.1	583.0	578.6	30- 40	398.7	1062	47.8,47.8
50	444.9	444.5	439.6	442.4	445.3	447.1	451.5	449.5	40- 50	394.3	1456	65.5,65.5
60	316.0	311.9	305.4	307.2	312.1	313.3	315.4	317.5	50- 60	338.5	1795	80.8,80.8
70	189.3	183.5	173.4	177.5	184.0	182.0	183.4	187.4	60- 70	244.3	2039	91.7,91.7
80	74.76	67.34	56.73	62.29	69.14	65.83	64.84	70.69	70- 80	129.3	2168	97.6,97.6
90	1.315	0.9507	0.8654	0.9247	0.8242	0.7950	0.7530	1.787	80- 90	26.54	2195	98.8,98.8
100	1.861	1.845	1.820	1.886	1.631	1.550	1.499	1.513	90-100	1.526	2196	98.8,98.8
110	3.083	3.072	3.092	3.119	2.779	2.650	2.624	2.637	100-110	2.400	2199	98.9,98.9
120	4.461	4.387	4.458	4.387	3.846	3.807	3.759	3.758	110-120	3.468	2202	99.1,99.1
130	5.739	5.638	5.683	5.604	5.041	4.924	4.968	4.896	120-130	4.224	2206	99.3,99.3
140	6.690	6.883	6.532	6.857	6.206	6.070	6.143	6.044	130-140	4.526	2211	99.5,99.5
150	8.025	8.007	8.185	7.974	7.253	7.060	7.210	7.083	140-150	4.391	2215	99.7,99.7
160	9.037	8.927	9.191	8.825	8.005	7.836	7.977	7.860	150-160	3.733	2219	99.8,99.8
170	9.051	9.418	9.101	9.275	8.707	8.728	8.743	8.767	160-170	2.472	2222	100,100
180	9.536	9.544	9.446	9.486	9.543	9.551	9.432	9.457	170-180	0.8753	2222	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	3786	1509
80	4980	3776
75	5811	5005
70	6401	5858
65	6906	6529
60	7310	7060
55	7666	7503
50	8006	7904
45	8329	8275

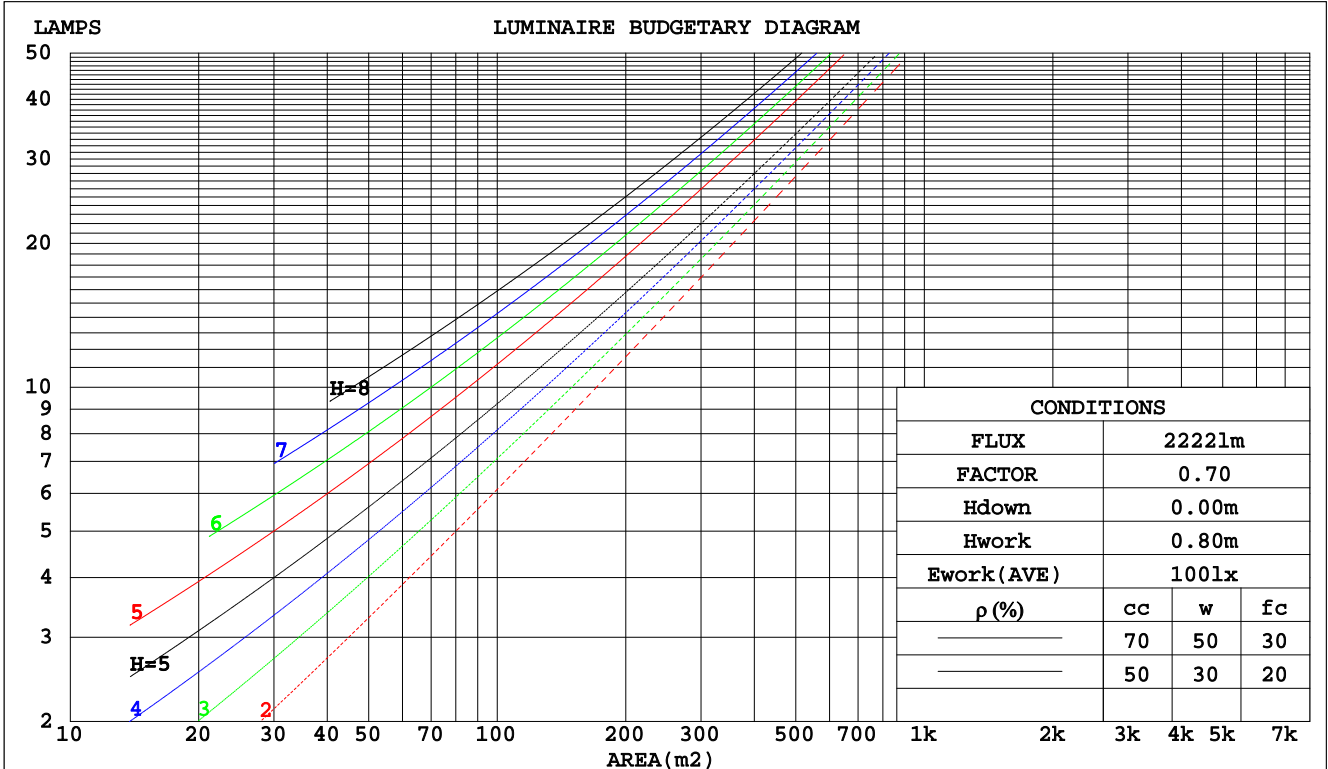
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2021-08-06

$\gamma$  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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	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%	
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	.83	.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	.71	.63	.56	.68	.61	.56	.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	.43	.54	.47	.42	.52	.46	.42	.40
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.38	.49	.42	.37	.47	.42	.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	.36	.31	.41	.35	.30	.40	.35	.30	.28
10.0	.41	.33	.28	.41	.33	.28	.39	.33	.28	.38	.32	.28	.38	.32	.28	.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:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	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	.291	.166	.052	.284	.162	.051	.270	.155	.049	.257	.148	.048	.245	.142	.046	
2.0	.277	.152	.047	.271	.149	.046	.258	.144	.045	.247	.139	.043	.237	.134	.042	
3.0	.258	.138	.041	.253	.135	.041	.242	.131	.040	.232	.127	.039	.223	.123	.038	
4.0	.240	.125	.037	.235	.123	.036	.225	.119	.036	.216	.116	.035	.208	.113	.034	
5.0	.223	.113	.033	.218	.112	.033	.209	.109	.032	.201	.106	.032	.194	.104	.031	
6.0	.207	.104	.030	.203	.103	.030	.195	.100	.029	.188	.098	.029	.182	.096	.028	
7.0	.193	.096	.027	.190	.094	.027	.183	.092	.027	.176	.090	.026	.170	.088	.026	
8.0	.181	.088	.025	.178	.087	.025	.171	.086	.024	.166	.084	.024	.160	.082	.024	
9.0	.170	.082	.023	.167	.081	.023	.161	.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	.087	.064	.057	.050	.020	.018	.016	
2.0	.180	.142	.109	.154	.122	.095	.106	.084	.066	.061	.049	.039	.020	.016	.013	
3.0	.172	.124	.086	.147	.107	.074	.101	.074	.052	.058	.043	.031	.019	.014	.010	
4.0	.164	.110	.069	.141	.095	.060	.097	.067	.042	.056	.039	.025	.018	.013	.008	
5.0	.157	.100	.058	.135	.087	.051	.093	.060	.036	.054	.035	.021	.017	.012	.007	
6.0	.150	.092	.050	.129	.079	.043	.089	.056	.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	.036	.113	.064	.031	.078	.045	.022	.045	.027	.013	.015	.009	.004	
10.0	.125	.070	.033	.108	.061	.029	.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:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm										
NAME: CP20W-CC					TYPE:20W			WEIGHT:		
DIM.:					SPEC.:3000K			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	19.7	21.2	20.0	21.4	21.6	19.6	21.1	19.9	21.3	21.5
3H	21.1	22.4	21.4	22.7	23.0	20.9	22.2	21.2	22.5	22.8
4H	21.6	22.9	22.0	23.2	23.5	21.3	22.6	21.7	22.9	23.2
6H	22.0	23.2	22.3	23.5	23.8	21.6	22.8	21.9	23.1	23.4
8H	22.1	23.2	22.4	23.5	23.9	21.6	22.8	22.0	23.1	23.4
12H	22.1	23.2	22.5	23.5	23.9	21.6	22.7	22.0	23.0	23.3
4H 2H	20.3	21.5	20.6	21.8	22.1	20.2	21.5	20.5	21.7	22.0
3H	21.8	22.9	22.2	23.2	23.6	21.6	22.7	22.0	23.1	23.4
4H	22.5	23.5	22.9	23.8	24.2	22.2	23.2	22.6	23.5	23.9
6H	22.9	23.8	23.3	24.2	24.6	22.5	23.4	22.9	23.8	24.2
8H	23.1	23.9	23.5	24.3	24.7	22.6	23.4	23.0	23.8	24.2
12H	23.1	23.9	23.6	24.3	24.7	22.6	23.4	23.0	23.8	24.2
8H 4H	22.7	23.5	23.1	23.9	24.3	22.4	23.2	22.8	23.6	24.0
6H	23.2	23.9	23.7	24.4	24.8	22.9	23.6	23.3	24.0	24.4
8H	23.4	24.0	23.9	24.5	25.0	23.0	23.6	23.5	24.0	24.5
12H	23.6	24.1	24.1	24.6	25.1	23.0	23.5	23.5	24.0	24.5
12H 4H	22.6	23.4	23.1	23.8	24.2	22.4	23.2	22.9	23.6	24.0
6H	23.3	23.9	23.7	24.3	24.8	22.9	23.5	23.4	24.0	24.4
8H	23.5	24.0	24.0	24.5	25.0	23.0	23.6	23.5	24.0	24.5
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 2222 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.8)

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:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

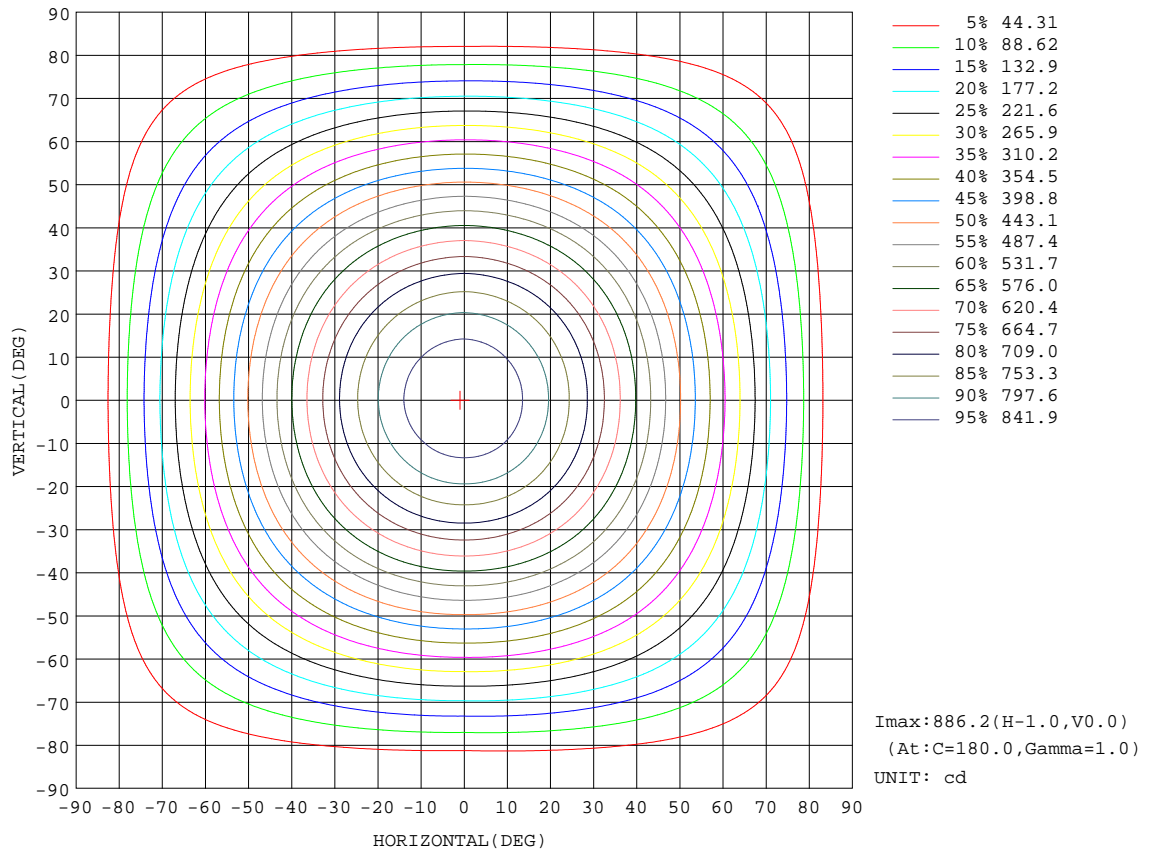
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	59	48	41	59	48	41	57	47	41	35
0.80	69	58	51	68	58	51	66	57	50	44
1.00	78	67	60	76	66	60	74	67	59	52
1.25	85	75	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	96	100	96	93	84
5.00	109	105	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:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:

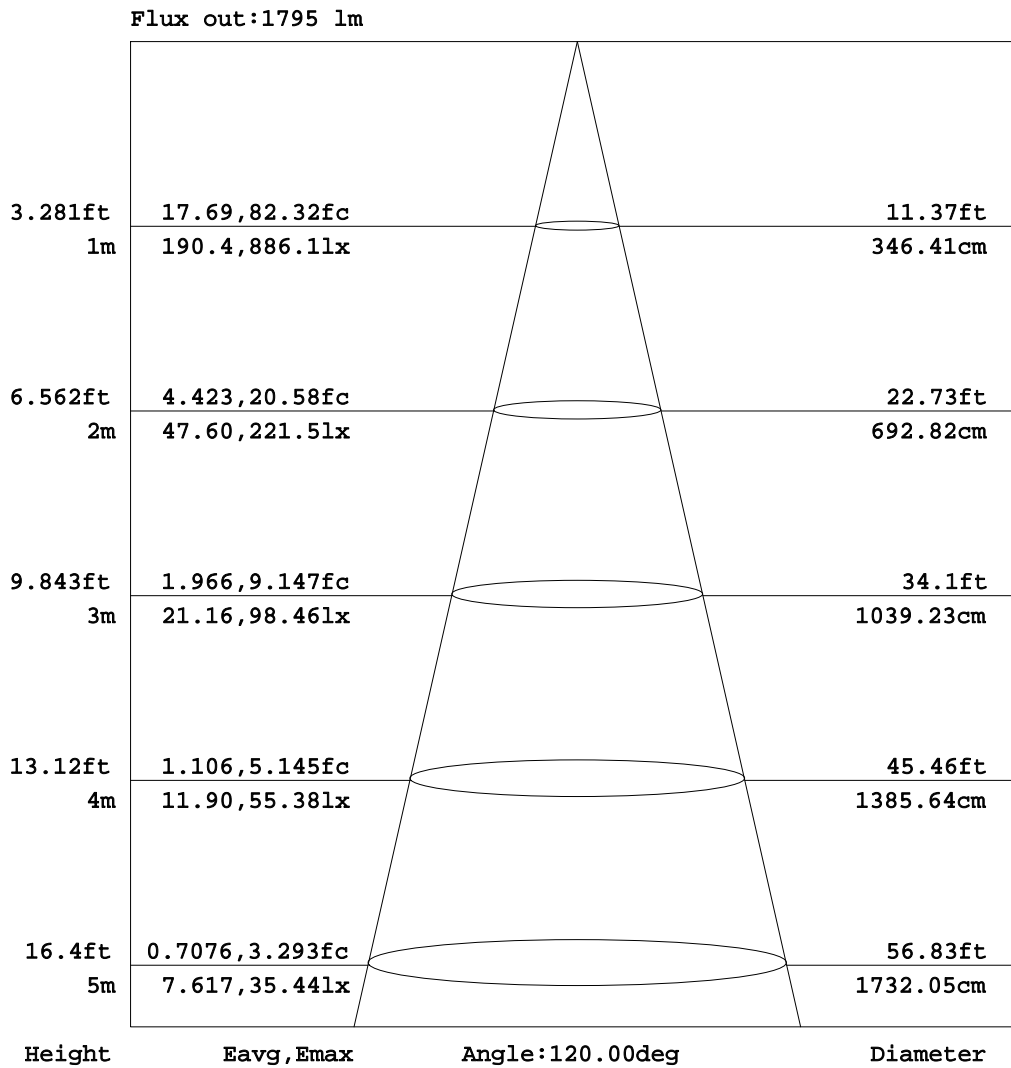


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

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:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	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.

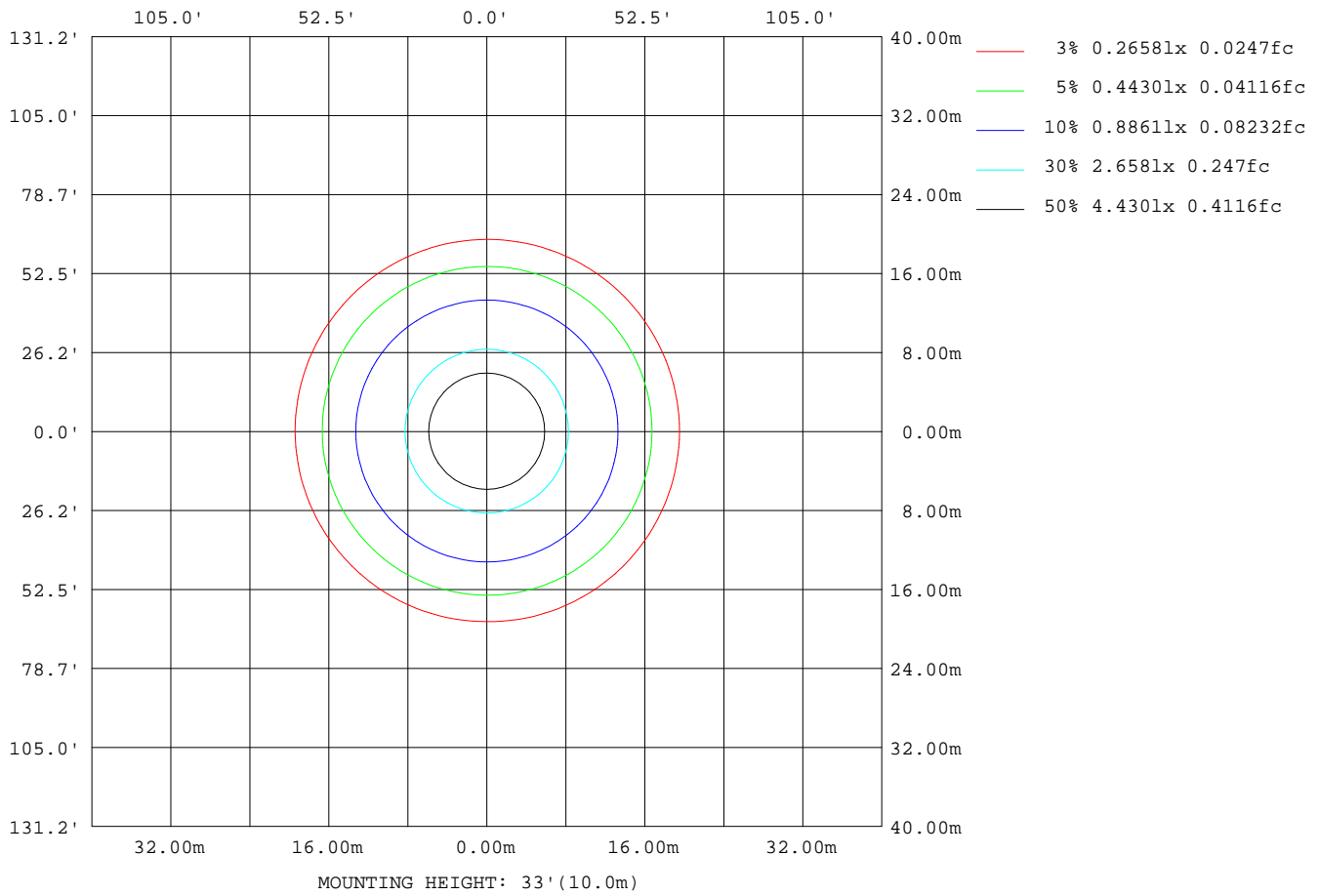
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2021-08-06

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**

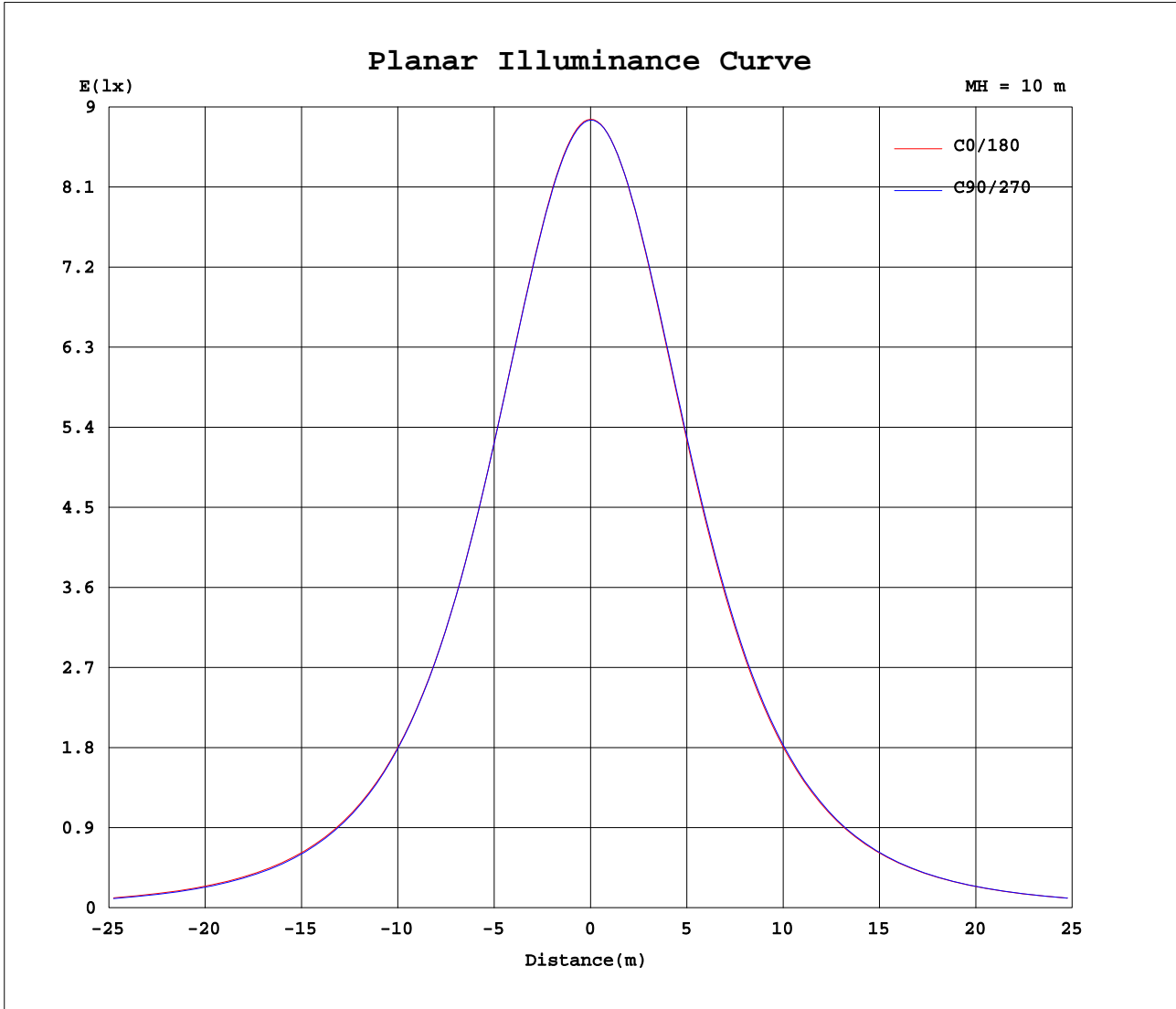
Test:U:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.0865	PROTECTION ANGLE:



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:240.1V I:0.0940A P:21.90W PF:0.9900 Lamp Flux:2222.4lx1 lm		
NAME: CP20W-CC	TYPE:20W	WEIGHT:
DIM.:	SPEC.:3000K	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	886	886	886	886	886	886	886	886											
5	879	879	879	879	880	880	881	880											
10	861	861	860	862	863	864	864	863											
15	832	832	831	833	835	836	837	835											
20	793	793	793	795	797	798	801	797											
25	746	747	746	748	750	752	755	751											
30	692	693	693	694	697	699	703	698											
35	634	635	634	636	638	640	645	640											
40	572	574	571	573	575	578	583	579											
45	509	509	506	508	511	513	518	515											
50	445	444	440	442	445	447	452	449											
55	380	377	372	374	378	380	383	384											
60	316	312	305	307	312	313	315	317											
65	252	247	239	241	247	247	249	252											
70	189	184	173	177	184	182	183	187											
75	130	123	112	117	124	121	121	126											
80	74.8	67.3	56.7	62.3	69.1	65.8	64.8	70.7											
85	28.5	19.6	11.4	16.6	23.8	19.2	17.3	22.4											
90	1.32	0.95	0.87	0.92	0.82	0.80	0.75	1.79											
95	1.30	1.51	1.87	1.37	1.18	1.10	1.45	1.37											
100	1.86	1.85	1.82	1.89	1.63	1.55	1.50	1.51											
105	2.41	2.47	2.46	2.49	2.17	2.08	2.03	2.02											
110	3.08	3.07	3.09	3.12	2.78	2.65	2.62	2.64											
115	3.78	3.74	3.78	3.77	3.40	3.24	3.24	3.22											
120	4.46	4.39	4.46	4.39	3.85	3.81	3.76	3.76											
125	5.11	5.03	5.13	4.99	4.45	4.37	4.32	4.33											
130	5.74	5.64	5.68	5.60	5.04	4.92	4.97	4.90											
135	6.28	6.27	5.93	6.24	5.65	5.48	5.53	5.50											
140	6.69	6.88	6.53	6.86	6.21	6.07	6.14	6.04											
145	7.14	7.47	7.50	7.43	6.76	6.56	6.70	6.55											
150	8.03	8.01	8.18	7.97	7.25	7.06	7.21	7.08											
155	8.54	8.49	8.76	8.46	7.86	7.62	7.84	7.61											
160	9.04	8.93	9.19	8.83	8.01	7.84	7.98	7.86											
165	8.93	9.20	9.54	9.07	8.38	8.29	8.34	8.30											
170	9.05	9.42	9.10	9.27	8.71	8.73	8.74	8.77											
175	9.33	9.60	9.22	9.46	9.04	9.09	9.02	9.07											
180	9.54	9.54	9.45	9.49	9.54	9.55	9.43	9.46											

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: