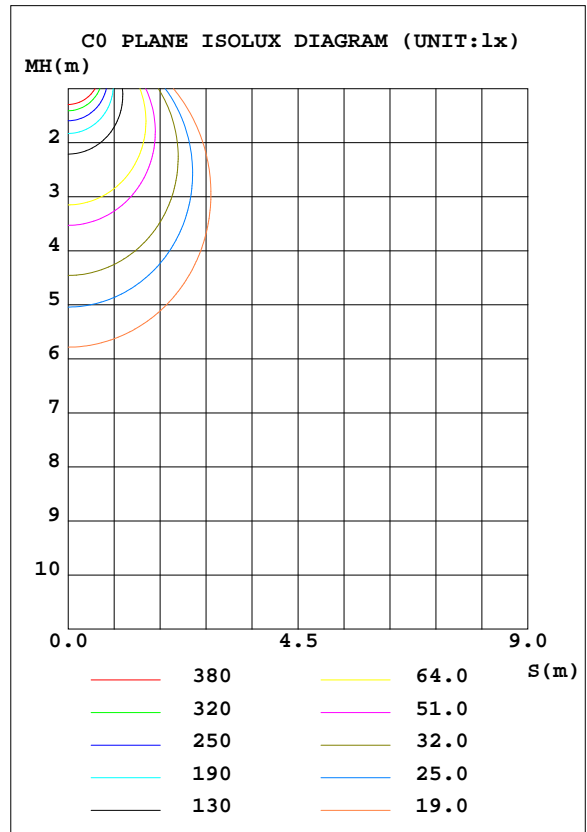
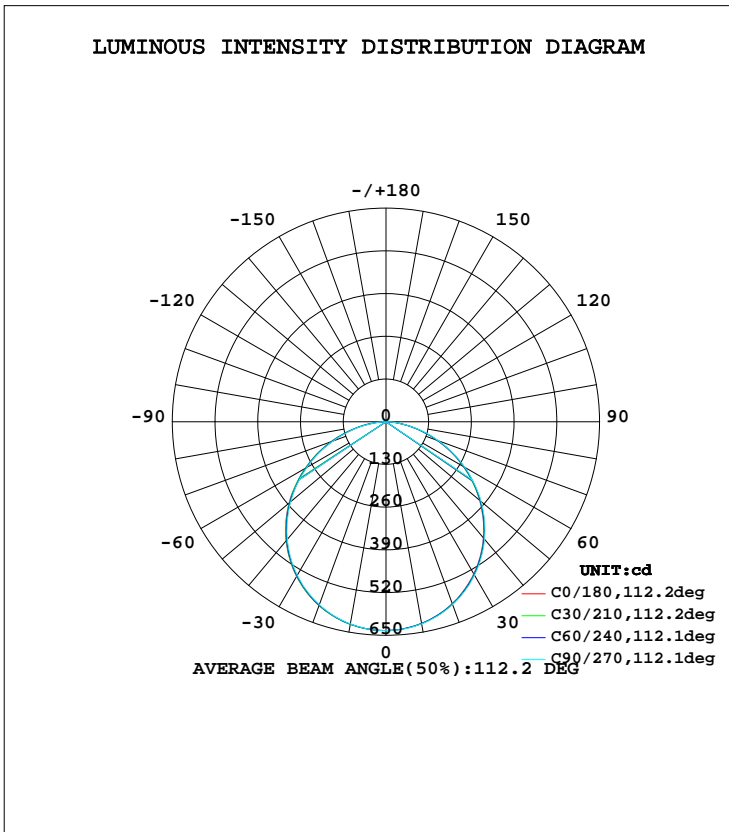


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 112.62 lm/W			
MODEL	CP10-16W-CC	I <sub>max</sub> (cd)	635.8	S/MH(C0/180)	1.25
NOMINAL POWER(W)	16	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1813.2	η UP, DN(C0-180)	0.0, 49.8
NOMINAL FLUX(lm)	1813.17	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 50.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.0	η down(%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

γ Range: 0 - 90DEG  
 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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	622.7	623.7	624.6	625.2	626.0	625.6	624.8	623.9	0- 10	60.14	60.14	3.32,3.32
20	588.8	590.5	592.2	593.5	595.5	594.3	592.5	591.0	10- 20	172.5	232.6	12.8,12.8
30	534.5	536.8	539.1	541.2	544.0	542.2	539.6	537.5	20- 30	261.9	494.6	27.3,27.3
40	461.0	463.6	466.8	469.3	472.9	470.3	467.2	464.5	30- 40	316.1	810.7	44.7,44.7
50	372.0	374.7	378.0	381.3	385.2	382.1	378.6	376.1	40- 50	327.3	1138	62.8,62.8
60	271.7	273.7	276.7	280.7	284.3	281.1	278.1	275.3	50- 60	293.9	1432	79,79
70	165.3	167.4	170.7	174.5	178.6	174.4	171.0	169.3	60- 70	222.4	1654	91.2,91.2
80	66.41	66.36	67.95	72.69	77.52	73.03	69.21	68.77	70- 80	126.3	1781	98.2,98.2
90	0.8314	0.8257	0.7900	0.8109	1.322	1.002	1.017	1.039	80- 90	32.59	1813	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

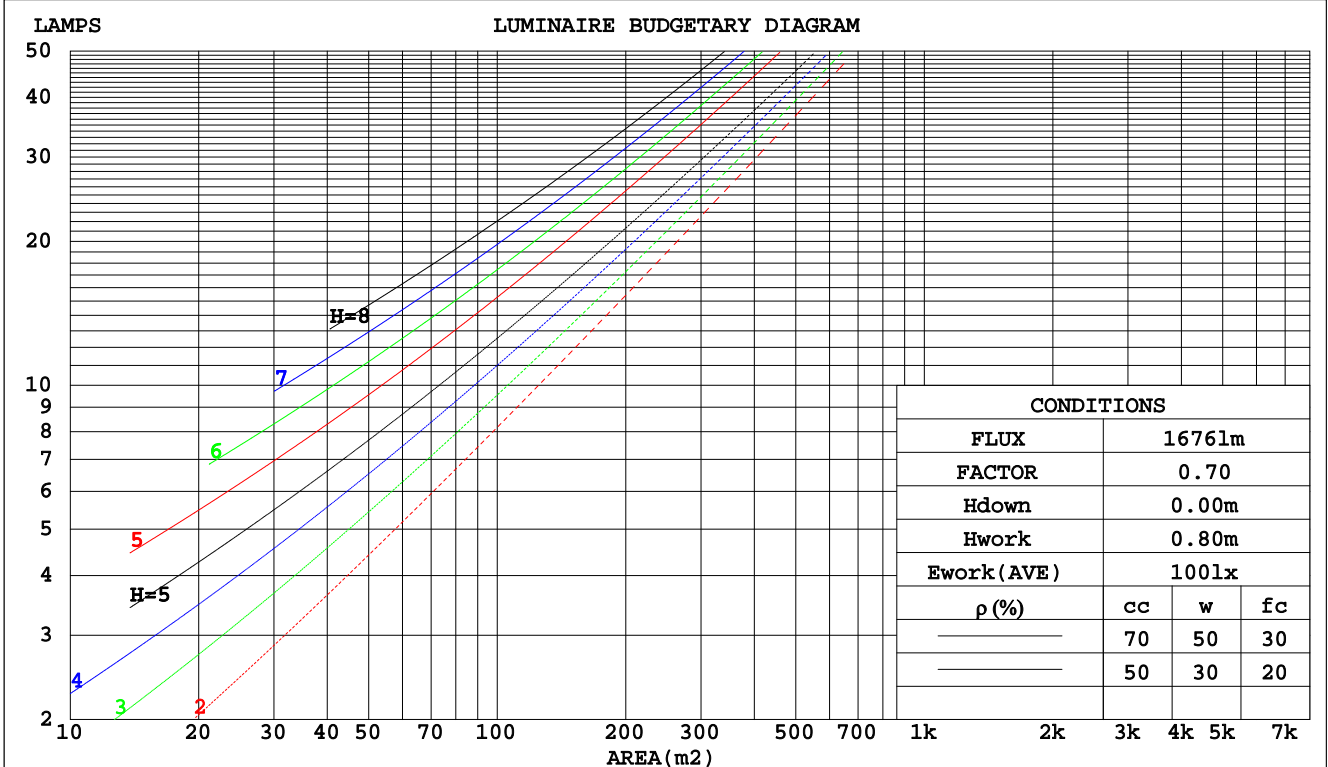
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	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																
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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.04	.90	.96	1.02	.98	.94	.97	.94	.91	.93	.91	.88	.90	.88	.86	.84
2.0	.91	.84	.78	.89	.82	.77	.85	.80	.75	.82	.77	.73	.79	.75	.72	.70
3.0	.79	.71	.65	.78	.70	.64	.75	.68	.63	.72	.67	.62	.70	.65	.61	.59
4.0	.70	.61	.55	.69	.61	.54	.66	.59	.54	.64	.58	.53	.62	.57	.52	.50
5.0	.63	.54	.47	.62	.53	.47	.60	.52	.46	.58	.51	.46	.56	.50	.45	.43
6.0	.57	.48	.41	.56	.47	.41	.54	.46	.40	.52	.45	.40	.50	.44	.40	.38
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.41	.36	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.45	.37	.32	.43	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.28	.27
10.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

γ Range: 0 - 90DEG  
 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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	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	.309	.175	.056	.302	.172	.055	.288	.165	.053	.276	.159	.051	.265	.154	.049	
2.0	.291	.159	.049	.285	.157	.048	.273	.152	.047	.262	.147	.046	.252	.143	.045	
3.0	.270	.143	.043	.264	.141	.043	.254	.137	.042	.244	.134	.041	.235	.130	.040	
4.0	.249	.129	.038	.244	.128	.038	.235	.125	.037	.226	.122	.037	.218	.119	.036	
5.0	.230	.117	.034	.226	.116	.034	.218	.113	.033	.210	.111	.033	.203	.108	.033	
6.0	.213	.107	.031	.210	.106	.030	.202	.104	.030	.196	.102	.030	.189	.100	.030	
7.0	.199	.098	.028	.195	.097	.028	.189	.095	.027	.183	.094	.027	.177	.092	.027	
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.166	.085	.025	
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.157	.079	.023	
10.0	.164	.078	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.148	.074	.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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.180	.156	.134	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.172	.132	.098	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.164	.114	.074	.141	.099	.064	.097	.068	.045	.056	.040	.027	.018	.013	.009	
4.0	.157	.101	.058	.135	.087	.051	.093	.061	.036	.054	.036	.021	.017	.012	.007	
5.0	.149	.091	.047	.128	.078	.041	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.142	.082	.039	.122	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.135	.075	.033	.116	.065	.029	.080	.046	.021	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

γ Range: 0 - 90DEG  
 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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm										
NAME: CP10-16W-CC					TYPE:16W			WEIGHT:		
DIM.:					SPEC.:4000K			SERIAL No.:1		
MFR.:					SUR.:0.0232			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	23.9	25.4	24.2	25.6	25.8	24.0	25.5	24.2	25.7	25.9
3H	25.4	26.8	25.7	27.0	27.2	25.5	26.9	25.8	27.1	27.3
4H	25.9	27.3	26.2	27.5	27.8	26.0	27.4	26.3	27.6	27.9
6H	26.3	27.6	26.6	27.8	28.1	26.4	27.7	26.8	28.0	28.2
8H	26.4	27.6	26.8	27.9	28.2	26.5	27.7	26.9	28.0	28.3
12H	26.5	27.6	26.8	27.9	28.2	26.6	27.7	26.9	28.0	28.3
4H 2H	24.5	25.8	24.8	26.1	26.4	24.6	25.9	24.9	26.1	26.4
3H	26.1	27.3	26.5	27.6	27.9	26.2	27.4	26.6	27.7	28.0
4H	26.8	27.9	27.2	28.2	28.6	26.9	28.0	27.3	28.3	28.6
6H	27.3	28.3	27.7	28.6	29.0	27.4	28.4	27.8	28.7	29.1
8H	27.5	28.4	27.9	28.7	29.1	27.6	28.5	28.0	28.8	29.2
12H	27.6	28.4	28.0	28.8	29.2	27.6	28.5	28.1	28.8	29.2
8H 4H	27.1	28.0	27.5	28.3	28.7	27.2	28.0	27.6	28.4	28.8
6H	27.7	28.5	28.2	28.9	29.3	27.8	28.5	28.2	28.9	29.4
8H	27.9	28.6	28.4	29.0	29.5	28.0	28.7	28.5	29.1	29.5
12H	28.1	28.7	28.6	29.1	29.6	28.1	28.7	28.6	29.1	29.6
12H 4H	27.1	27.9	27.5	28.3	28.7	27.2	28.0	27.6	28.4	28.8
6H	27.8	28.4	28.2	28.8	29.3	27.8	28.5	28.3	28.9	29.4
8H	28.0	28.6	28.5	29.0	29.5	28.1	28.6	28.6	29.1	29.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 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 1813 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.1)

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

γ Range: 0 - 90DEG  
 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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	PROTECTION ANGLE:

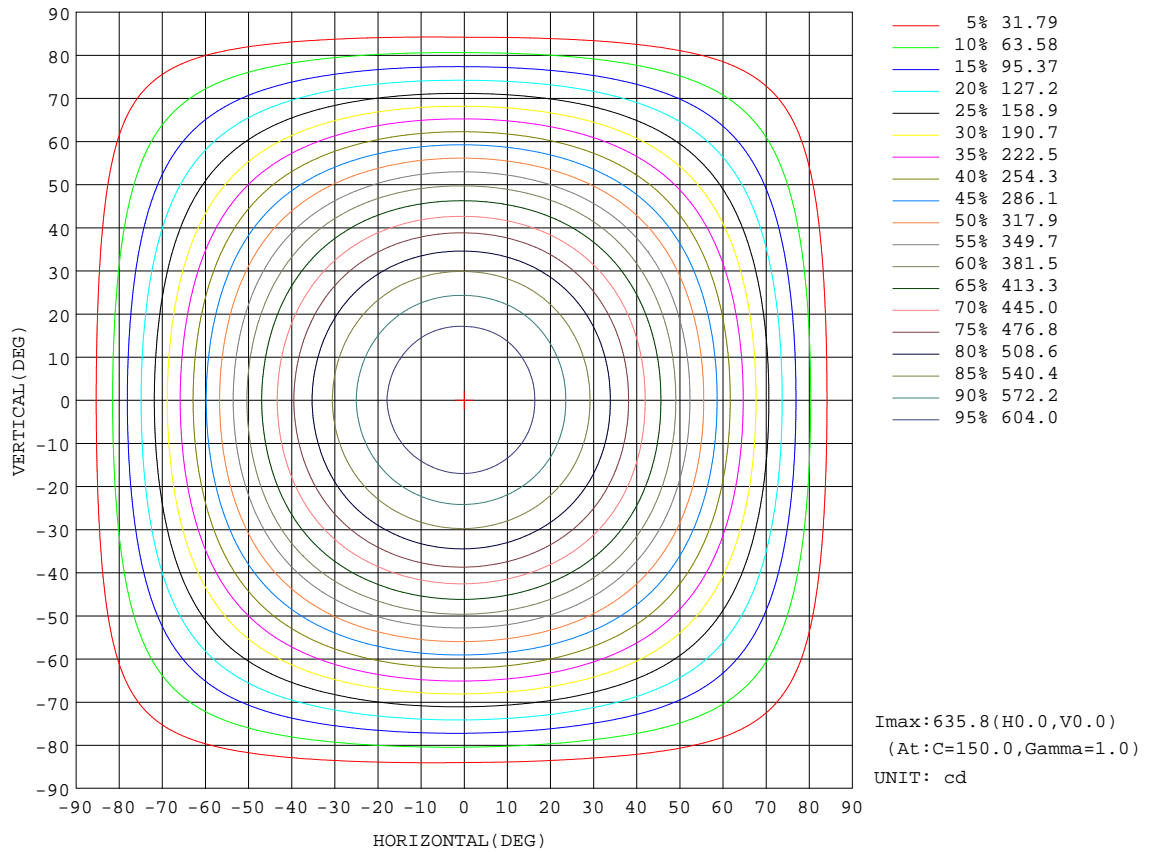
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	46	39	57	46	39	56	45	39	32
0.80	68	56	49	67	56	48	65	55	48	41
1.00	76	65	58	75	64	57	73	66	57	50
1.25	83	73	66	82	72	65	79	71	64	57
1.50	88	78	71	86	77	71	83	76	70	62
2.00	95	86	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	87	78
4.00	106	101	96	104	99	95	100	95	92	83
5.00	109	104	100	106	102	98	102	98	95	86
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:2019-06-22

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	PROTECTION ANGLE:

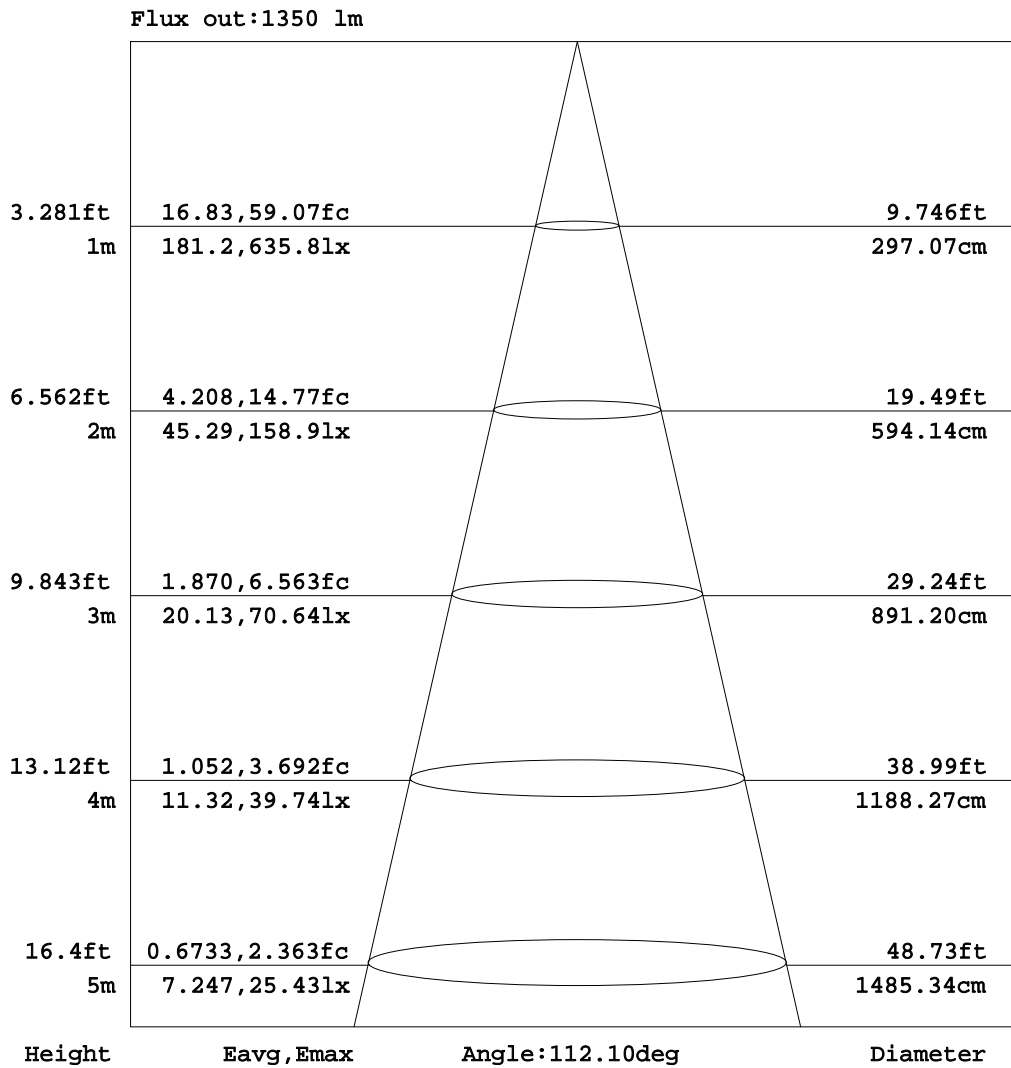


C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

γ Range: 0 - 90DEG  
 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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	PROTECTION ANGLE:



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

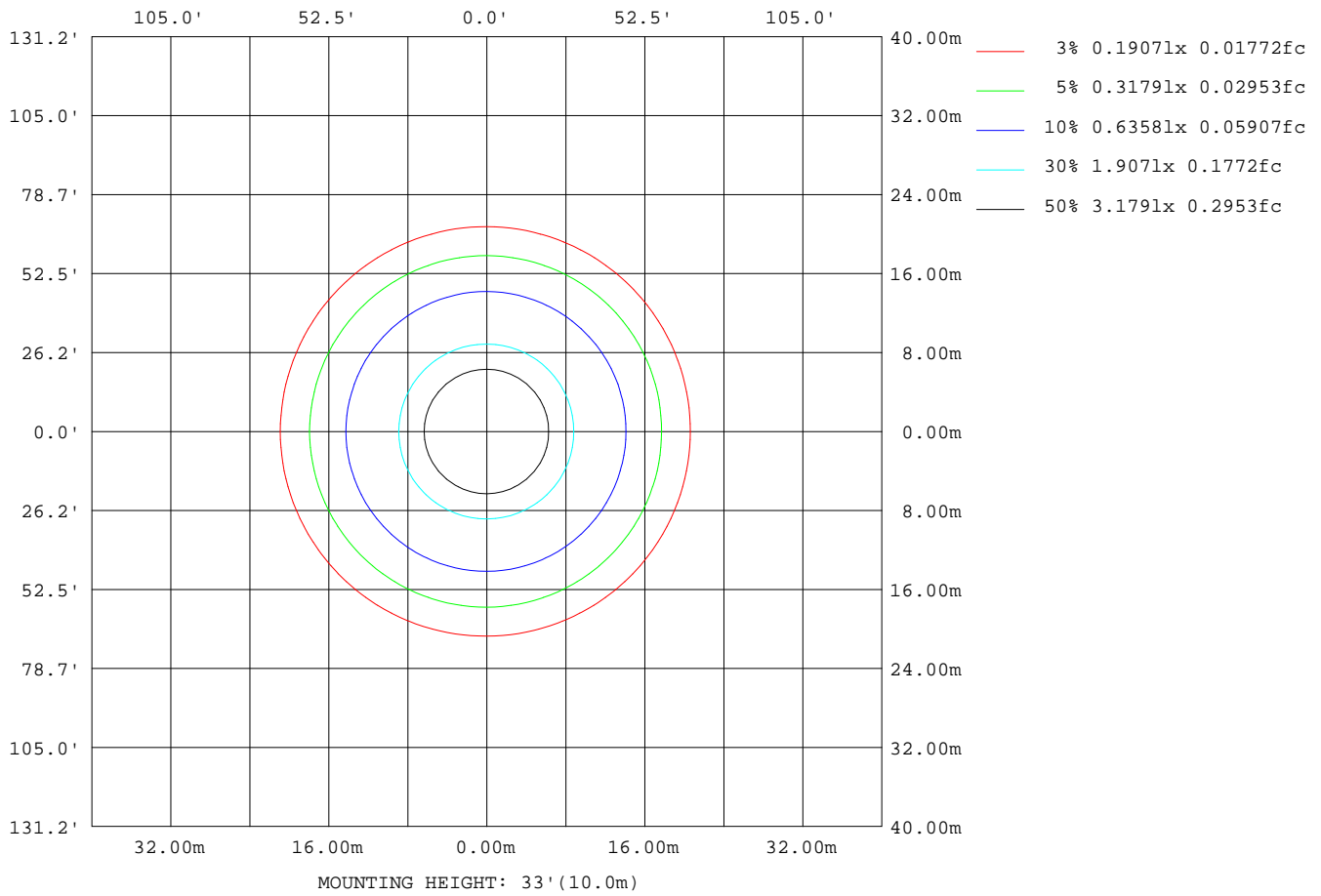
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

γ Range: 0 - 90DEG  
 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**

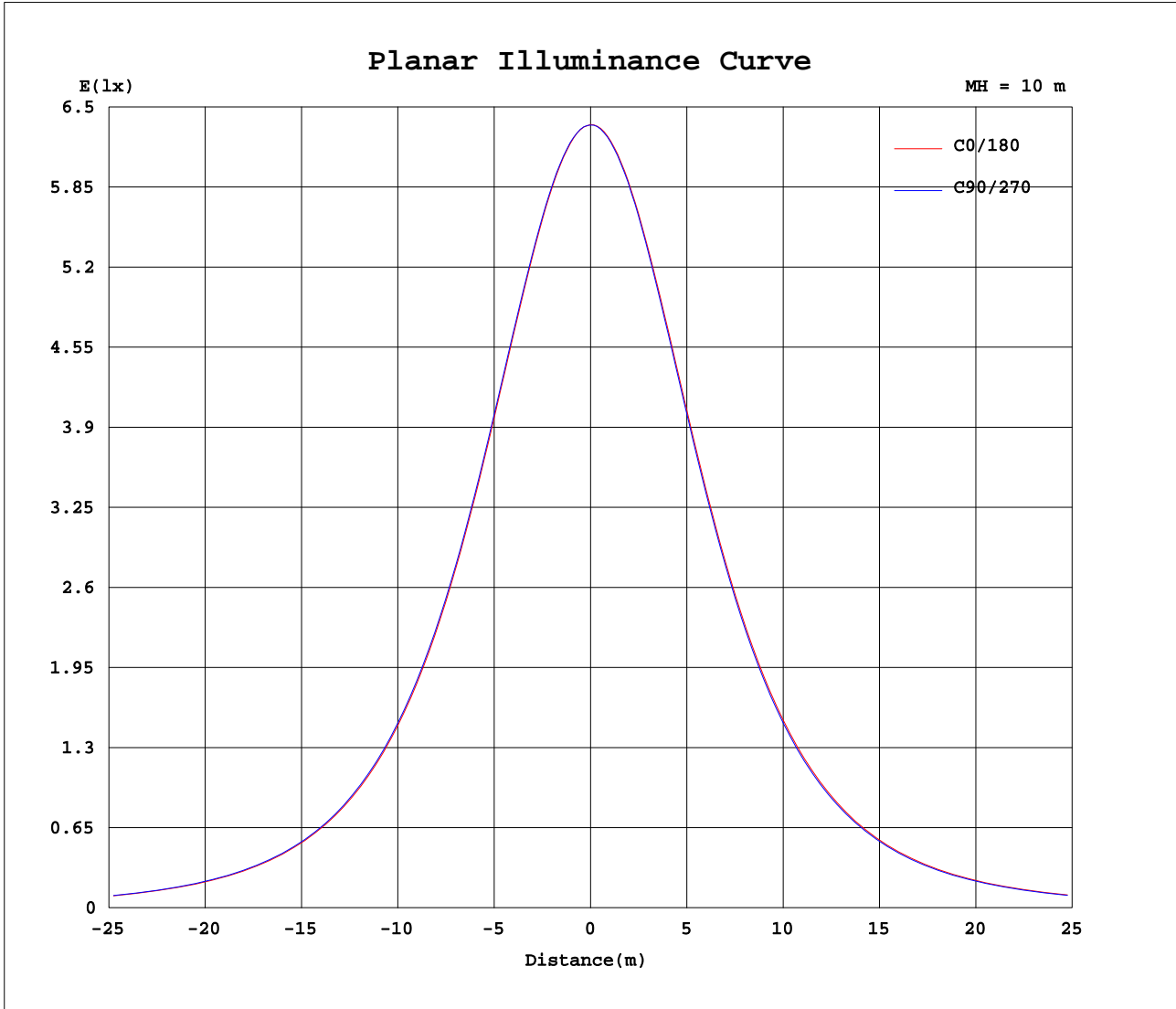
Test:U:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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: 2019-06-22

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:230.1V I:0.0720A P:16.10W PF:0.9630 Lamp Flux:1813.17x1 lm		
NAME: CP10-16W-CC	TYPE:16W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.:	SUR.:0.0232	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEC) γ (DEC)	0	30	60	90	120	150	180	210	240	270	300	330						
0	636	636	636	636	636	636	636	636	636	636	636	636						
5	632	632	632	633	633	633	633	633	633	633	632	632						
10	623	624	624	625	625	626	626	626	625	625	624	624						
15	608	610	610	611	612	613	613	613	612	612	610	610						
20	589	590	591	592	593	594	596	595	594	592	592	590						
25	564	566	567	568	569	571	572	571	570	569	568	566						
30	534	537	537	539	540	542	544	543	541	540	538	537						
35	500	502	503	505	506	509	510	509	508	506	504	502						
40	461	463	464	467	468	471	473	471	469	467	466	463						
45	418	421	422	424	425	429	431	429	427	424	423	421						
50	372	374	375	378	379	383	385	383	381	379	377	375						
55	323	324	326	328	331	333	335	334	331	329	327	326						
60	272	273	275	277	279	282	284	283	280	278	276	274						
65	219	220	222	224	226	229	232	229	227	225	223	222						
70	165	167	168	171	173	176	179	175	173	171	171	168						
75	114	115	115	118	120	124	126	123	121	119	119	117						
80	66.4	67.0	65.7	68.0	70.5	74.8	77.5	74.5	71.6	69.2	69.2	68.3						
85	24.9	25.0	23.4	24.5	27.2	30.6	34.4	31.6	28.2	25.4	25.9	26.2						
90	0.83	0.84	0.81	0.79	0.80	0.82	1.32	1.02	0.99	1.02	1.05	1.03						

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2019-06-22  
  
 γ Range: 0 - 90DEG  
 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: