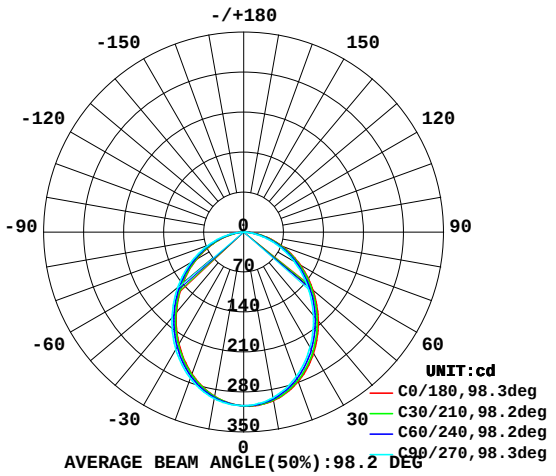
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.5V I:0.0400A P:9.220W PF:0.9480 Lamp Flux:740.237x1 lm		
NAME: CL22-3-8W-P3	TYPE:8W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	PROTECTION ANGLE:

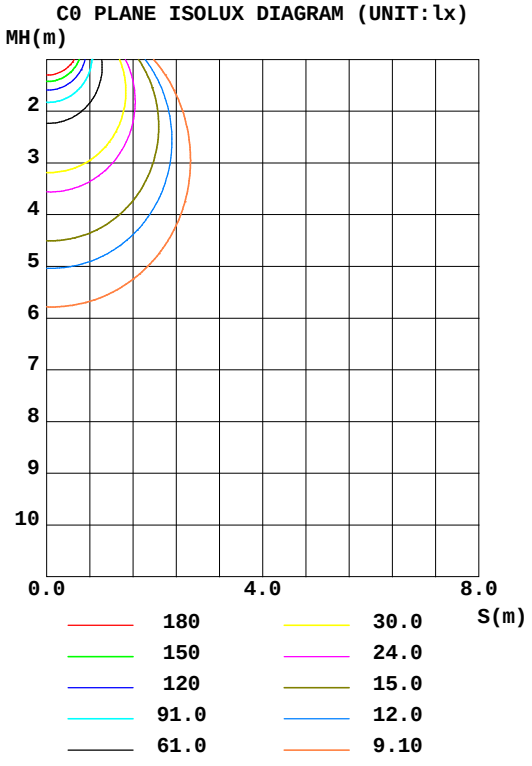
DATA OF LAMP		PHOTOMETRIC DATA Eff: 80.29 lm/W			
MODEL	CL22-3-8W-P3	Imax(cd)	304.8	S/MH(C0/180)	1.20
NOMINAL POWER(W)	9	LOR(%)	100.0	S/MH(C90/270)	1.15
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	740.24	η UP,DN(C0-180)	0.0,49.9
NOMINAL FLUX(lm)	740.237	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.5	η down(%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):98.2 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [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	299.8	297.8	294.6	292.0	292.0	293.5	296.0	298.7	0- 10	28.61	28.61	3.87,3.87
20	278.5	274.8	269.3	264.8	264.7	267.7	272.9	277.5	10- 20	80.29	108.9	14.7,14.7
30	244.7	239.8	232.8	227.1	226.7	230.6	237.5	243.7	20- 30	117.1	226.0	30.5,30.5
40	203.0	197.6	189.9	183.8	183.5	187.7	195.2	202.1	30- 40	134.2	360.1	48.7,48.7
50	158.5	153.0	145.3	139.4	139.1	143.3	151.0	157.7	40- 50	131.7	491.8	66.4,66.4
60	114.0	108.8	101.5	95.85	95.64	99.81	107.2	113.5	50- 60	113.0	604.8	81.7,81.7
70	70.64	65.84	59.08	53.91	53.83	57.98	64.70	70.43	60- 70	82.22	687.0	92.8,92.8
80	30.12	26.20	20.90	16.84	16.97	19.73	25.20	30.28	70- 80	44.40	731.4	98.8,98.8
90	0.3093	0.3093	0.3157	0.3220	0.3220	0.3598	0.3598	0.3693	80- 90	8.834	740.2	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
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Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

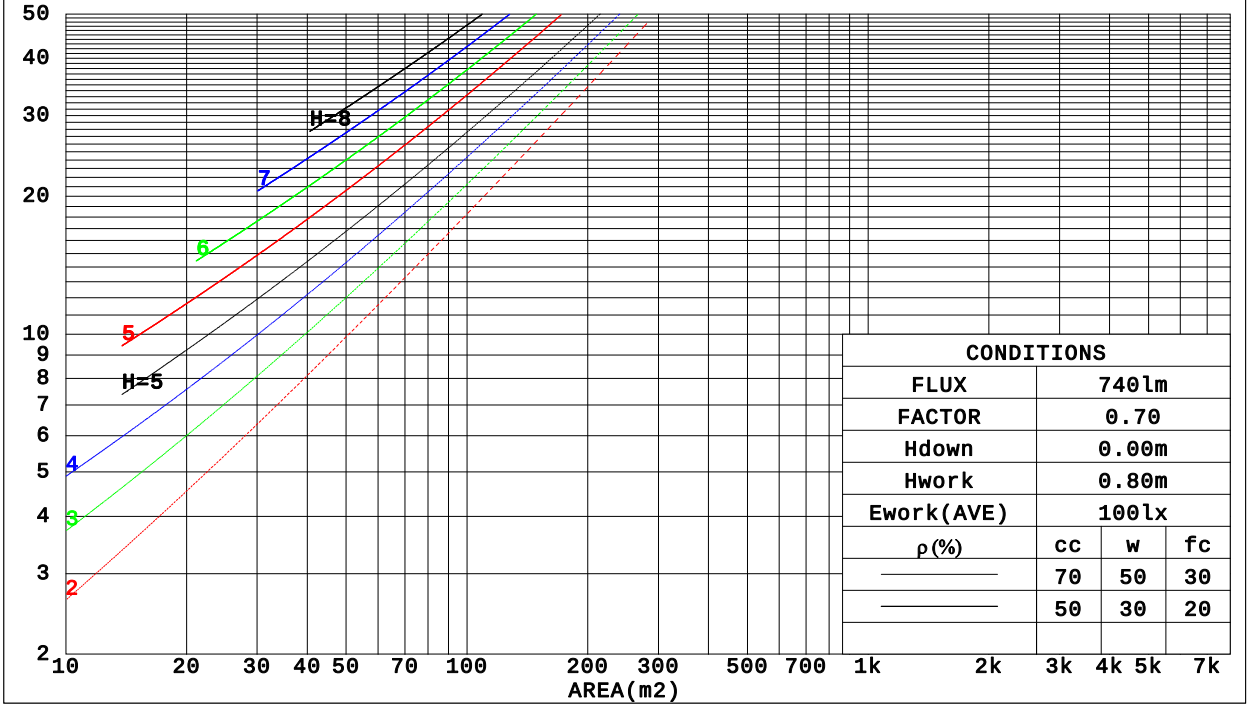
CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.5V I:0.0400A P:9.220W PF:0.9480 Lamp Flux:740.237x1 lm		
NAME: CL22-3-8W-P3	TYPE:8W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	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			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	.00
1.0	1.05	1.01	.97	1.03	.99	.96	.98	.95	.93	.94	.92	.90	.91	.89	.87	.85
2.0	.92	.85	.80	.90	.84	.79	.87	.81	.77	.83	.79	.75	.80	.77	.74	.72
3.0	.81	.73	.67	.80	.72	.66	.77	.70	.65	.74	.69	.64	.71	.67	.63	.61
4.0	.72	.64	.57	.71	.63	.57	.68	.61	.56	.66	.60	.55	.64	.59	.55	.52
5.0	.65	.56	.50	.64	.55	.49	.62	.54	.49	.60	.53	.48	.58	.52	.48	.46
6.0	.59	.50	.44	.58	.49	.43	.56	.48	.43	.54	.48	.43	.53	.47	.42	.40
7.0	.53	.45	.39	.52	.44	.38	.51	.44	.38	.49	.43	.38	.48	.42	.38	.36
8.0	.49	.40	.35	.48	.40	.35	.47	.39	.34	.45	.39	.34	.44	.38	.34	.32
9.0	.45	.37	.31	.44	.36	.31	.43	.36	.31	.42	.36	.31	.41	.35	.31	.29
10.0	.41	.34	.28	.41	.33	.28	.40	.33	.28	.39	.33	.28	.38	.32	.28	.26

LAMPS

LUMINAIRE BUDGETARY DIAGRAM



CONDITIONS			
FLUX	740lm		
FACTOR	0.70		
Hdown	0.00m		
Hwork	0.80m		
Ework(AVE)	100lx		
ρ(%)	cc	w	fc
————	70	50	30
————	50	30	20

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Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
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WEC AND CCEC

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DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	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 Coeffcients(WEC)									
0.0																
1.0	.291	.166	.053	.284	.162	.052	.271	.156	.050	.259	.149	.048	.248	.144	.046	
2.0	.278	.152	.047	.271	.149	.046	.260	.144	.045	.249	.140	.044	.239	.135	.043	
3.0	.259	.138	.041	.253	.136	.041	.243	.132	.040	.233	.128	.039	.225	.124	.039	
4.0	.240	.125	.037	.235	.123	.036	.226	.120	.036	.218	.117	.035	.210	.114	.035	
5.0	.223	.113	.033	.218	.112	.033	.210	.110	.032	.203	.107	.032	.196	.105	.031	
6.0	.207	.104	.030	.203	.103	.030	.196	.101	.029	.189	.098	.029	.183	.096	.029	
7.0	.193	.096	.027	.190	.095	.027	.184	.093	.027	.178	.091	.026	.172	.089	.026	
8.0	.181	.088	.025	.178	.088	.025	.172	.086	.025	.167	.085	.024	.162	.083	.024	
9.0	.170	.082	.023	.167	.081	.023	.162	.080	.023	.157	.079	.023	.153	.078	.022	
10.0	.160	.077	.021	.158	.076	.021	.153	.075	.021	.149	.074	.021	.144	.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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.179	.156	.136	.153	.134	.117	.105	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.170	.132	.100	.146	.114	.086	.100	.079	.060	.058	.046	.035	.018	.015	.011	
3.0	.162	.114	.076	.139	.099	.066	.096	.068	.046	.055	.040	.027	.018	.013	.009	
4.0	.155	.101	.060	.133	.087	.052	.091	.061	.037	.053	.036	.022	.017	.012	.007	
5.0	.147	.090	.048	.126	.078	.042	.087	.055	.030	.050	.032	.018	.016	.010	.006	
6.0	.140	.082	.040	.120	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.133	.075	.034	.115	.065	.030	.079	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.127	.069	.029	.109	.060	.026	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.121	.064	.026	.104	.056	.022	.072	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.115	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
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Operators:DAMIN
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γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

Uncorrected UGR Table

Test:U:240.5V I:0.0400A P:9.220W PF:0.9480 Lamp Flux:740.237x1 lm		
NAME: CL22-3-8W-P3	TYPE:8W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	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	26.3	27.8	26.6	28.0	28.2	25.9	27.3	26.1	27.5	27.7
3H	27.8	29.1	28.0	29.3	29.6	27.2	28.5	27.4	28.7	29.0
4H	28.3	29.6	28.7	29.9	30.1	27.6	28.9	27.9	29.2	29.4
6H	28.8	30.0	29.1	30.3	30.5	27.9	29.1	28.2	29.4	29.7
8H	28.9	30.1	29.3	30.4	30.7	28.0	29.1	28.3	29.4	29.7
12H	29.0	30.1	29.4	30.4	30.7	28.0	29.1	28.3	29.4	29.7
4H 2H	26.8	28.1	27.1	28.4	28.6	26.5	27.8	26.8	28.0	28.3
3H	28.5	29.6	28.8	29.9	30.2	28.0	29.1	28.3	29.4	29.7
4H	29.2	30.2	29.6	30.5	30.9	28.6	29.6	28.9	29.9	30.2
6H	29.8	30.7	30.2	31.0	31.4	28.9	29.9	29.3	30.2	30.6
8H	29.9	30.8	30.4	31.2	31.5	29.0	29.9	29.4	30.3	30.6
12H	30.1	30.9	30.5	31.2	31.6	29.1	29.8	29.5	30.2	30.6
8H 4H	29.4	30.3	29.8	30.6	31.0	28.8	29.7	29.2	30.0	30.4
6H	30.1	30.8	30.5	31.2	31.6	29.4	30.1	29.8	30.5	30.9
8H	30.4	31.0	30.8	31.4	31.9	29.5	30.1	30.0	30.6	31.0
12H	30.6	31.1	31.0	31.5	32.0	29.6	30.1	30.0	30.5	31.0
12H 4H	29.4	30.2	29.8	30.6	31.0	28.8	29.6	29.3	30.0	30.4
6H	30.1	30.8	30.6	31.2	31.6	29.4	30.0	29.9	30.5	30.9
8H	30.4	31.0	30.9	31.4	31.9	29.6	30.1	30.1	30.6	31.0
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
1.5H	+ 0.1 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 740.2 lm Total Lamp Luminous Flux.(8log(F/F0) = -1.0)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.5V I:0.0400A P:9.220W PF:0.9480 Lamp Flux:740.237x1 lm		
NAME: CL22-3-8W-P3	TYPE:8W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	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) x RCR = 5									
k = 0.60	60	49	42	59	48	42	58	48	42	35
0.80	70	59	52	69	58	51	67	58	51	44
1.00	78	68	61	77	67	60	75	68	60	53
1.25	85	75	68	84	74	68	81	73	67	60
1.50	90	81	74	88	80	73	85	78	72	65
2.00	96	88	82	95	87	82	91	85	80	72
2.50	100	93	87	98	91	86	94	89	84	76
3.00	103	97	92	101	95	91	97	92	88	80
4.00	107	102	97	105	100	96	101	97	93	85
5.00	109	105	101	107	103	100	103	99	96	88
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

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ISOCANDELA DIAGRAM

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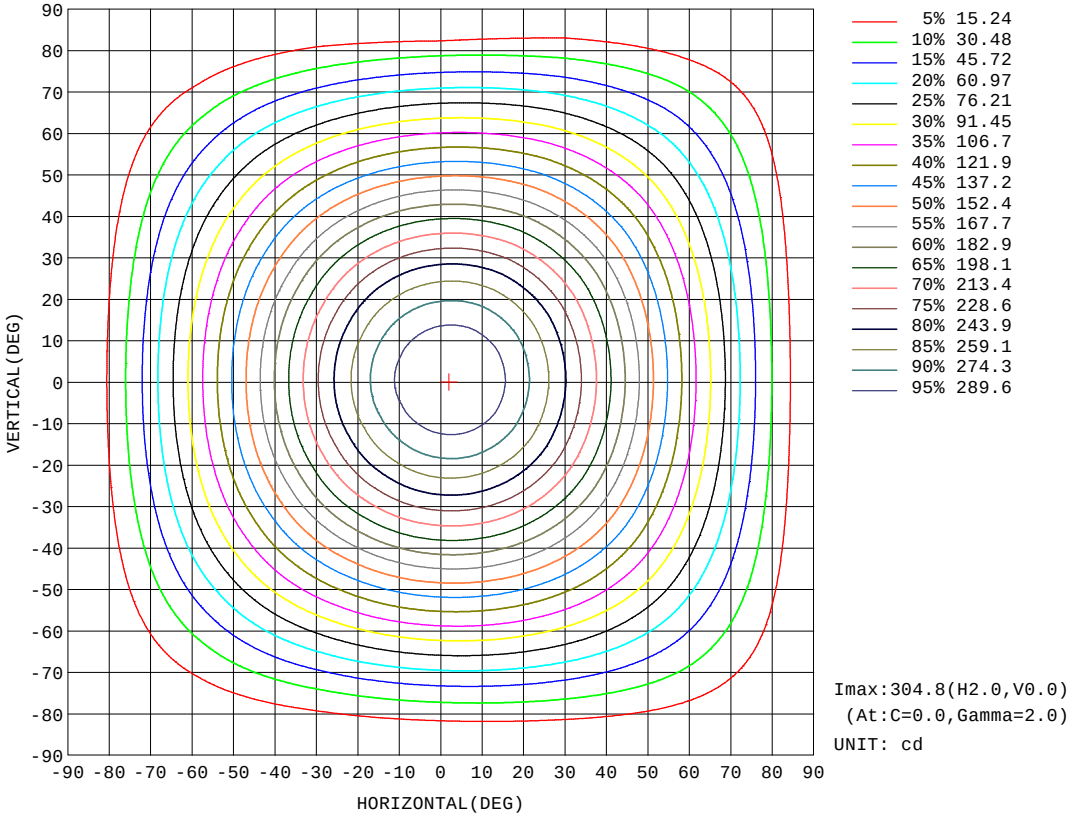
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	PROTECTION ANGLE:



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AAI Figure

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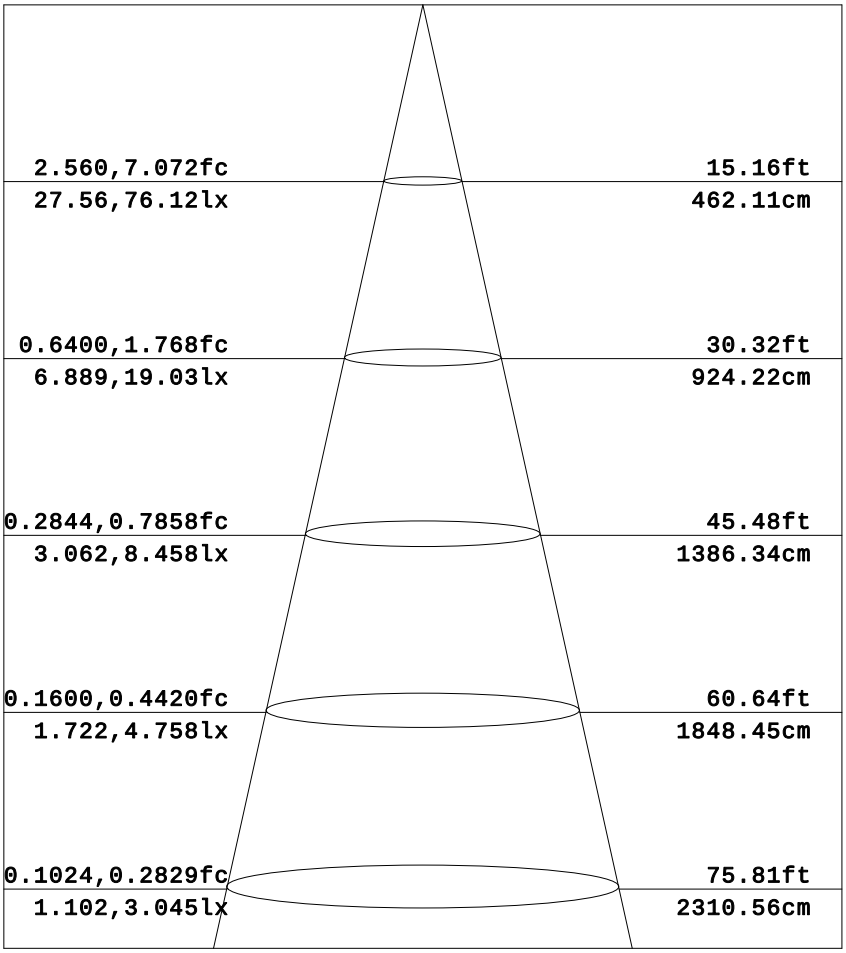
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	PROTECTION ANGLE:

Flux out:491.8 lm



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

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ISOLUX DIAGRAM

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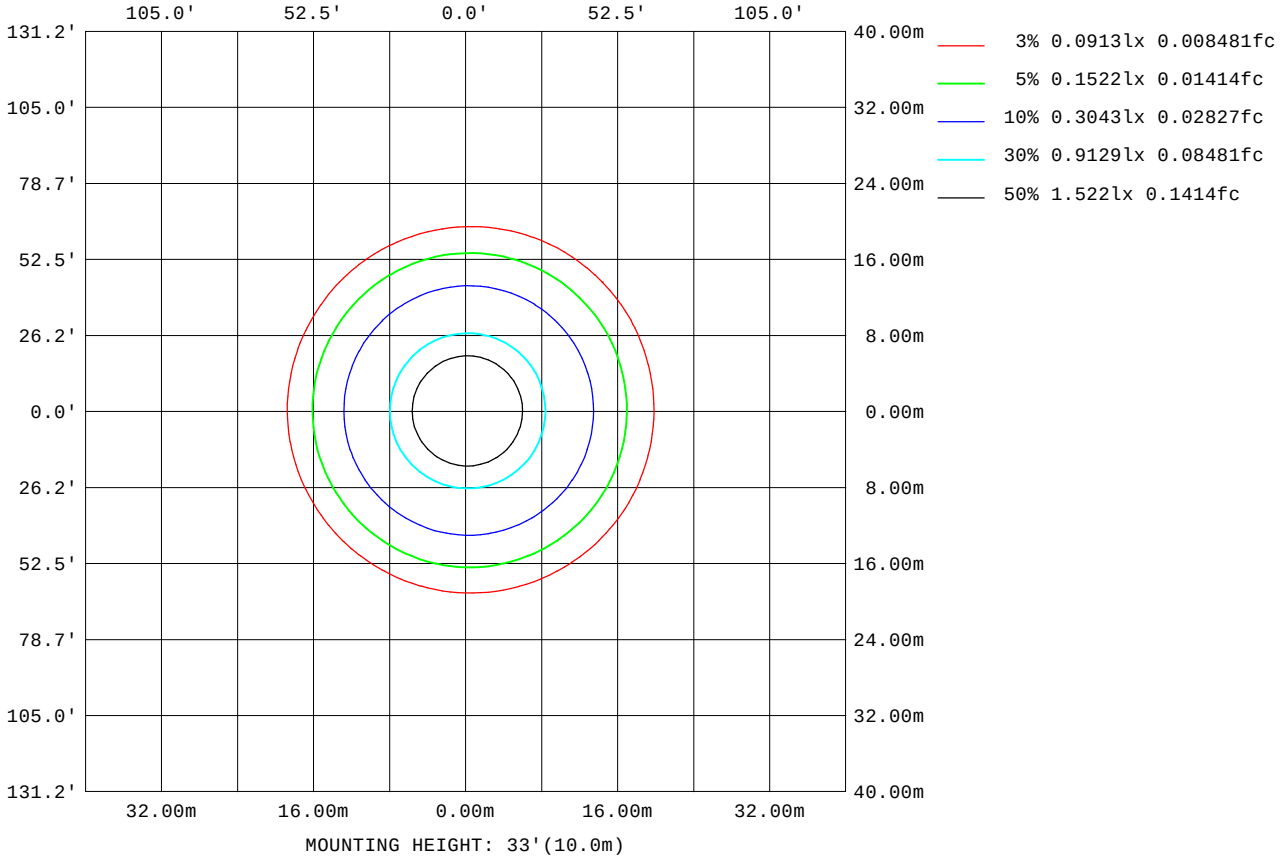
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	PROTECTION ANGLE:



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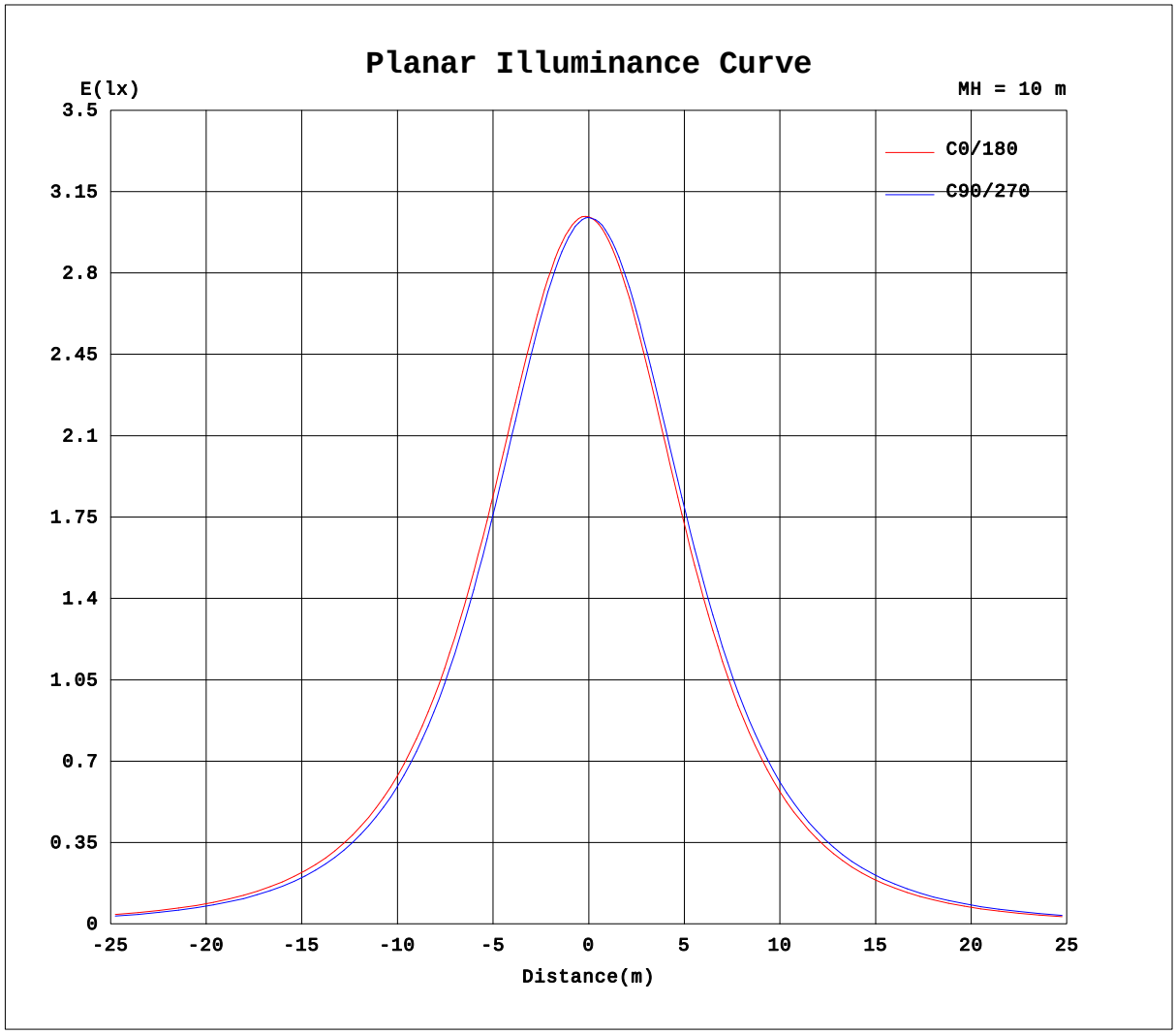
Planar Illuminance Curve



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LUMINOUS DISTRIBUTION INTENSITY DATA

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NAME: CL22-3-8W-P3	TYPE:8W	WEIGHT:
DIM.:	SPEC.:6000K	SERIAL No.:1
MFR.:	SUR.:0.04	PROTECTION ANGLE:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	30	60	90	120	150	180	210	240	270	300	330
0	304	304	304	304	304	304	304	304	304	304	304	304
5	304	304	303	301	300	300	300	301	301	302	303	304
10	300	299	297	295	293	291	292	293	294	296	298	299
15	291	290	287	284	281	279	280	281	283	286	289	291
20	278	277	273	269	266	264	265	266	269	273	277	278
25	263	261	256	252	248	246	247	248	252	256	261	263
30	245	242	237	233	228	226	227	228	233	237	242	245
35	224	222	217	212	207	205	205	207	212	217	222	225
40	203	200	195	190	185	183	183	185	190	195	201	204
45	181	178	173	168	163	160	161	163	168	173	179	182
50	159	156	150	145	141	138	139	141	146	151	156	159
55	136	133	128	123	119	116	117	119	124	129	134	137
60	114	111	106	102	96.9	94.8	95.6	97.5	102	107	112	115
65	92.1	89.6	84.6	80.1	75.6	73.6	74.4	76.3	80.9	85.6	90.6	92.9
70	70.6	68.2	63.5	59.1	54.8	53.0	53.8	55.8	60.2	64.7	69.3	71.5
75	49.7	47.5	43.0	38.9	35.0	33.4	34.3	35.9	40.4	44.5	48.8	50.7
80	30.1	28.2	24.2	20.9	17.5	16.2	17.0	17.3	22.1	25.2	29.4	31.2
85	13.4	9.56	7.59	4.99	2.31	0.41	1.25	1.76	2.53	3.97	10.9	11.8
90	0.31	0.32	0.30	0.32	0.32	0.32	0.32	0.37	0.35	0.36	0.32	0.42

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2017-05-10

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
Humidity:65.0%
Test Distance:9.700m [K=1.0000]
Remarks: