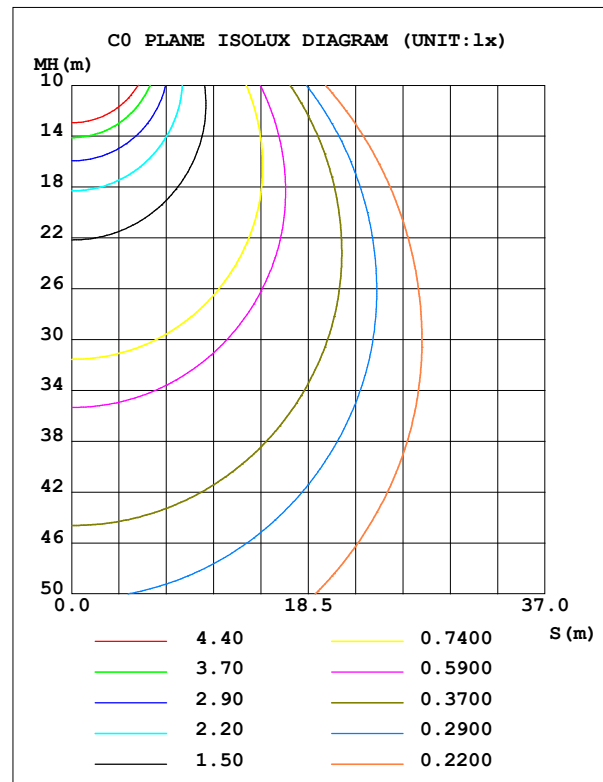
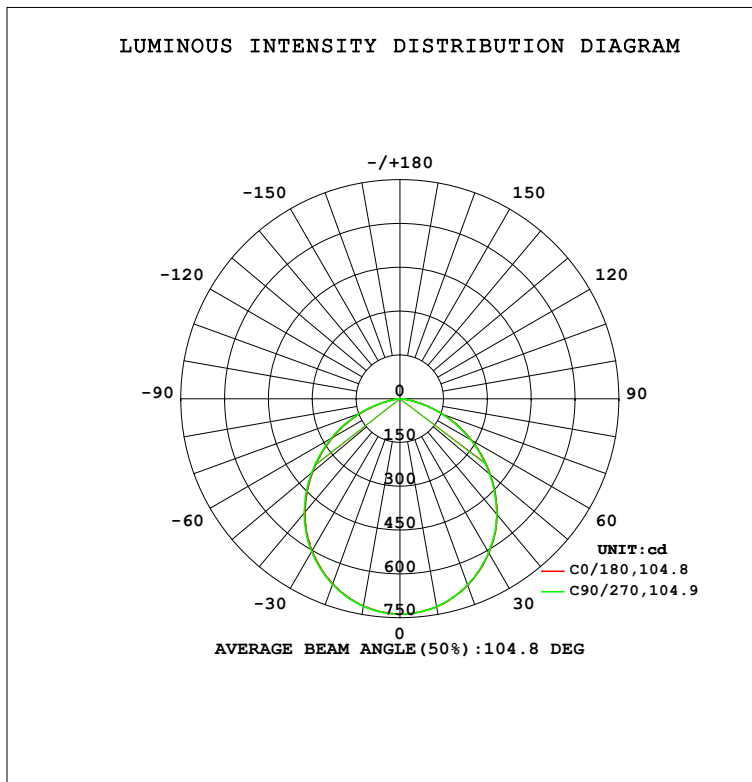


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 86.93 lm/W
MODEL	G3 160mm 3000lm 840 ADV	I _{max} (cd)	737.1	S/MH (C0/180)	1.22	
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.23	
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	1886.8	η UP, DN (C0-180)	0.0, 50.4	
NOMINAL FLUX (lm)	1886.78	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.6	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE (V)	220.0	η down (%)	100.0	CIBSE SHR MAX	1.35	



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Ky
Test Date: 18 May 2017

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 7.220m [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
5	733.5	733.0	733.6	733.2	732.4	733.6	733.0	732.6	0- 5	17.57	17.57	0.93,0.93
10	722.8	721.9	722.3	722.2	720.7	722.4	721.6	720.9	5- 10	52.05	69.62	3.69,3.69
15	704.5	702.9	703.8	703.4	701.0	703.6	702.2	701.6	10- 15	84.51	154.1	8.17,8.17
20	679.0	676.9	677.9	677.6	674.2	677.4	675.8	675.0	15- 20	113.7	267.8	14.2,14.2
25	646.9	644.2	645.6	645.1	640.7	644.9	642.9	642.1	20- 25	138.5	406.3	21.5,21.5
30	609.4	606.2	607.5	606.9	601.6	606.3	604.4	603.6	25- 30	158.1	564.5	29.9,29.9
35	566.8	563.2	564.7	563.6	557.6	562.7	560.8	560.3	30- 35	172.0	736.5	39,39
40	517.3	512.9	514.8	513.2	506.0	511.6	509.8	509.5	35- 40	179.3	915.7	48.5,48.5
45	462.3	457.8	459.7	457.9	449.8	455.8	453.9	453.9	40- 45	179.2	1095	58,58
50	404.1	399.3	401.0	399.2	390.8	396.9	395.1	395.2	45- 50	172.5	1267	67.2,67.2
55	343.9	338.9	340.4	338.6	329.5	335.6	334.0	334.5	50- 55	159.6	1427	75.6,75.6
60	282.3	277.2	278.1	276.5	267.3	273.1	271.9	272.8	55- 60	141.3	1568	83.1,83.1
65	219.6	214.5	215.8	214.0	204.4	210.2	209.0	209.9	60- 65	118.3	1687	89.4,89.4
70	156.8	151.4	152.8	151.0	141.9	147.6	146.3	147.4	65- 70	91.46	1778	94.2,94.2
75	95.46	90.64	91.62	89.83	80.97	86.28	84.78	86.07	70- 75	61.88	1840	97.5,97.5
80	40.62	36.75	37.14	36.08	29.73	33.18	31.91	32.87	75- 80	32.22	1872	99.2,99.2
85	12.99	12.61	12.61	12.44	11.30	11.96	11.70	11.88	80- 85	10.73	1883	99.8,99.8
90	2.263	1.079	1.290	1.079	0.9139	0.9232	0.9244	0.9170	85- 90	3.803	1887	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1094.9 lm

%lum = 58.0%
%lamp = 58.0%

Conical surface Flux(120deg): 1568.4 lm

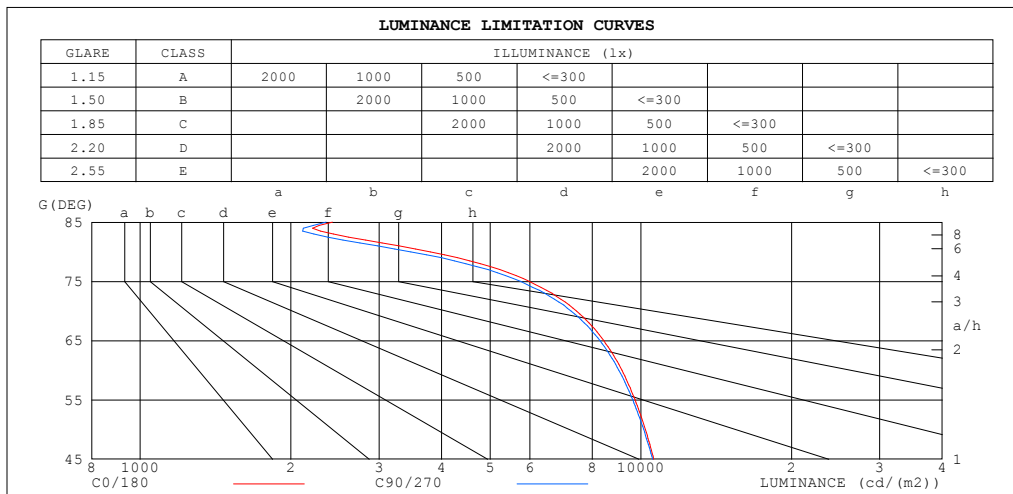
%lum = 83.1%
%lamp = 83.1%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2420	2350
80	3799	3474
75	5991	5749
70	7446	7258
65	8438	8292
60	9171	9035
55	9738	9638
50	10212	10133
45	10619	10559

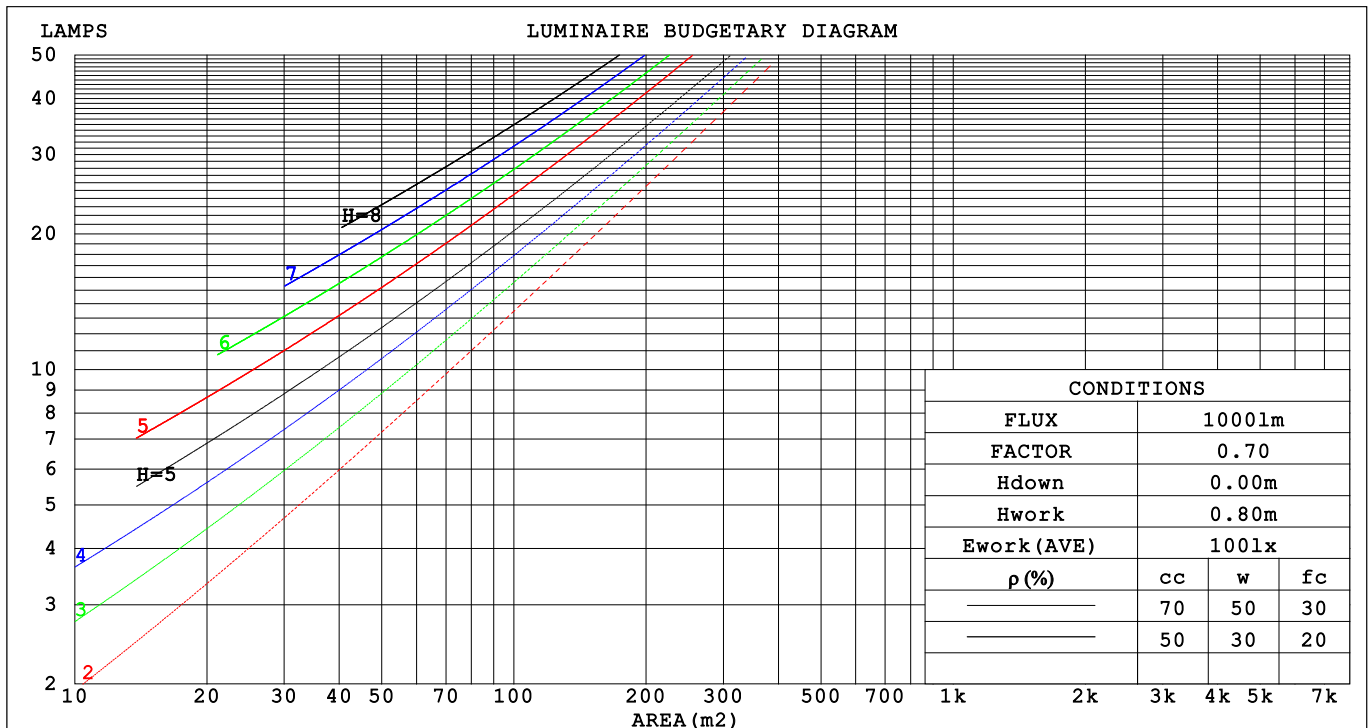
C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.05	1.01	.98	1.03	.99	.96	.99	.96	.93	.95	.93	.90	.91	.89	.88	.86
2.0	.92	.86	.81	.91	.85	.80	.87	.82	.78	.84	.80	.76	.81	.77	.74	.72
3.0	.82	.74	.68	.80	.73	.67	.77	.71	.66	.74	.69	.65	.72	.67	.64	.61
4.0	.73	.64	.58	.71	.63	.57	.69	.62	.56	.66	.60	.56	.64	.59	.55	.53
5.0	.65	.56	.50	.64	.56	.50	.62	.55	.49	.60	.53	.48	.58	.52	.48	.46
6.0	.59	.50	.44	.58	.49	.43	.56	.49	.43	.54	.48	.43	.53	.47	.42	.40
7.0	.53	.45	.39	.52	.44	.39	.51	.44	.38	.49	.43	.38	.48	.42	.38	.36
8.0	.49	.40	.35	.48	.40	.34	.47	.39	.34	.45	.39	.34	.44	.38	.34	.32
9.0	.45	.37	.31	.44	.36	.31	.43	.36	.31	.42	.35	.31	.41	.35	.31	.29
10.0	.41	.33	.28	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.26



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.284	.161	.051	.277	.158	.050	.263	.151	.048	.251	.145	.047	.240	.139	.045	
2.0	.273	.150	.046	.267	.147	.045	.255	.142	.044	.245	.137	.043	.235	.133	.042	
3.0	.256	.136	.041	.250	.134	.040	.240	.130	.040	.231	.127	.039	.222	.123	.038	
4.0	.238	.124	.036	.234	.122	.036	.225	.119	.036	.216	.116	.035	.208	.113	.034	
5.0	.222	.113	.033	.218	.112	.033	.210	.109	.032	.202	.107	.032	.195	.104	.031	
6.0	.207	.104	.030	.203	.103	.030	.196	.100	.029	.189	.098	.029	.183	.096	.029	
7.0	.193	.096	.027	.190	.095	.027	.183	.093	.027	.177	.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	.082	.023	.162	.080	.023	.157	.079	.023	.153	.078	.022	
10.0	.160	.077	.021	.158	.076	.021	.153	.075	.021	.149	.074	.021	.145	.073	.021	

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	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	.178	.156	.136	.153	.134	.117	.104	.092	.081	.060	.053	.047	.019	.017	.015		
2.0	.170	.132	.100	.145	.114	.087	.100	.079	.060	.057	.046	.035	.018	.015	.012		
3.0	.162	.114	.076	.139	.099	.066	.095	.068	.046	.055	.040	.027	.018	.013	.009		
4.0	.154	.101	.060	.132	.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	.116	.060	.023	.100	.052	.020	.069	.037	.014	.040	.022	.008	.013	.007	.003		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Ky
 Test Date:18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:7.220m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm											
NAME: DEEP C 310 LED_WHT_500mA_4K					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.: Darkon					SUR.:			Shielding 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	20.7	22.2	21.0	22.4	22.6	20.7	22.2	21.0	22.4	22.6	
	3H	22.0	23.3	22.3	23.6	23.8	21.9	23.3	22.2	23.5	23.7
	4H	22.4	23.6	22.7	23.9	24.1	22.3	23.6	22.6	23.8	24.1
	6H	22.5	23.7	22.8	24.0	24.3	22.4	23.6	22.7	23.9	24.2
	8H	22.5	23.7	22.8	23.9	24.2	22.4	23.6	22.7	23.8	24.1
	12H	22.5	23.6	22.8	23.9	24.2	22.4	23.5	22.7	23.8	24.1
4H	2H	21.3	22.5	21.6	22.8	23.0	21.2	22.5	21.5	22.8	23.0
	3H	22.6	23.8	23.0	24.1	24.4	22.6	23.7	22.9	24.0	24.3
	4H	23.1	24.1	23.5	24.5	24.8	23.1	24.1	23.4	24.4	24.7
	6H	23.3	24.2	23.7	24.6	24.9	23.2	24.1	23.6	24.5	24.9
	8H	23.3	24.2	23.8	24.5	24.9	23.2	24.1	23.7	24.4	24.8
	12H	23.3	24.1	23.8	24.5	24.9	23.2	24.0	23.7	24.4	24.8
8H	4H	23.2	24.1	23.6	24.4	24.8	23.2	24.0	23.6	24.4	24.8
	6H	23.5	24.2	24.0	24.6	25.0	23.4	24.1	23.9	24.5	24.9
	8H	23.6	24.2	24.0	24.6	25.0	23.5	24.1	23.9	24.5	24.9
	12H	23.6	24.1	24.0	24.5	25.0	23.5	24.0	23.9	24.4	24.9
12H	4H	23.2	24.0	23.6	24.4	24.8	23.2	23.9	23.6	24.3	24.7
	6H	23.5	24.1	24.0	24.5	25.0	23.4	24.0	23.9	24.5	24.9
	8H	23.6	24.1	24.0	24.5	25.0	23.5	24.0	23.9	24.4	24.9
Variations with the observer position at spacings:											
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.4					
2.0H	+ 0.4 / - 0.4					+ 0.4 / - 0.4					

CIE Pub.117 Corrected 1887 lm Total Lamp Luminous Flux. (8log(F/F0) = 2.2)

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

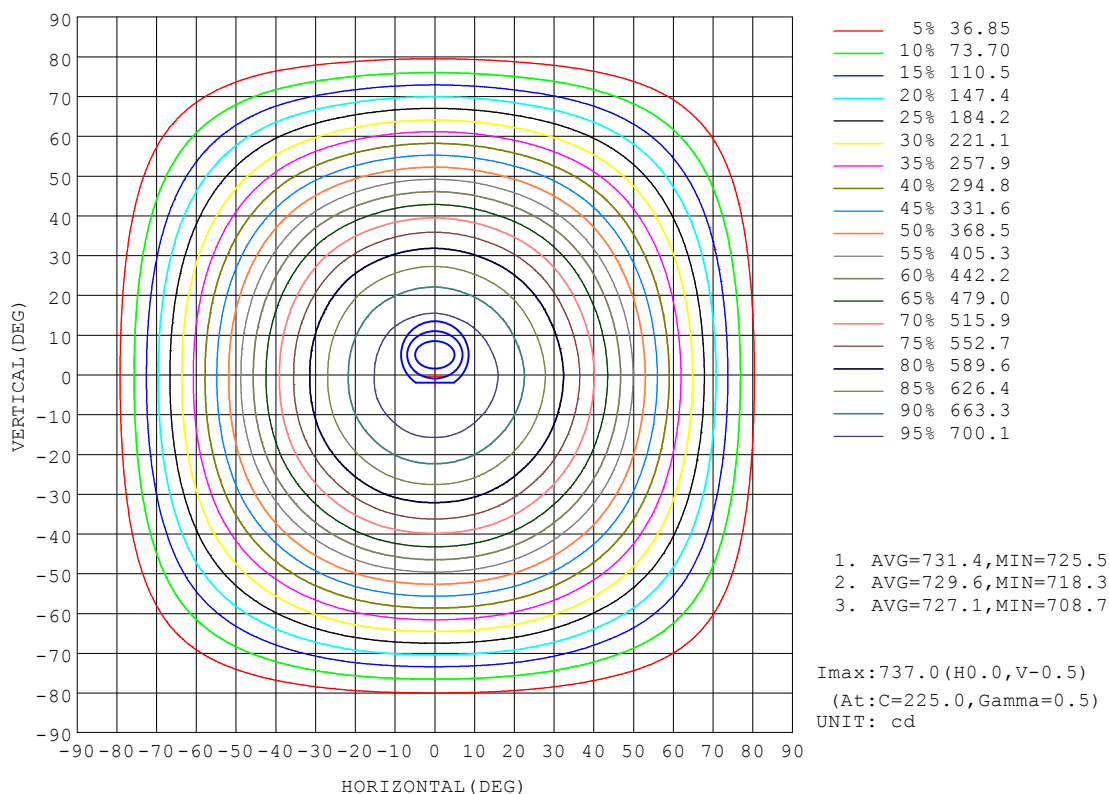
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	60	48	42	59	48	41	58	48	41	35
0.80	70	59	52	69	58	51	67	57	51	44
1.00	78	68	61	77	67	61	75	68	60	53
1.25	85	75	69	84	75	68	81	73	67	61
1.50	90	81	74	89	80	74	86	78	73	66
2.00	97	89	83	95	88	82	92	86	81	73
2.50	101	93	88	99	92	87	95	89	85	77
3.00	104	97	92	102	96	91	98	93	89	81
4.00	107	102	98	105	100	97	101	97	94	85
5.00	110	105	102	107	103	100	103	100	97	88
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

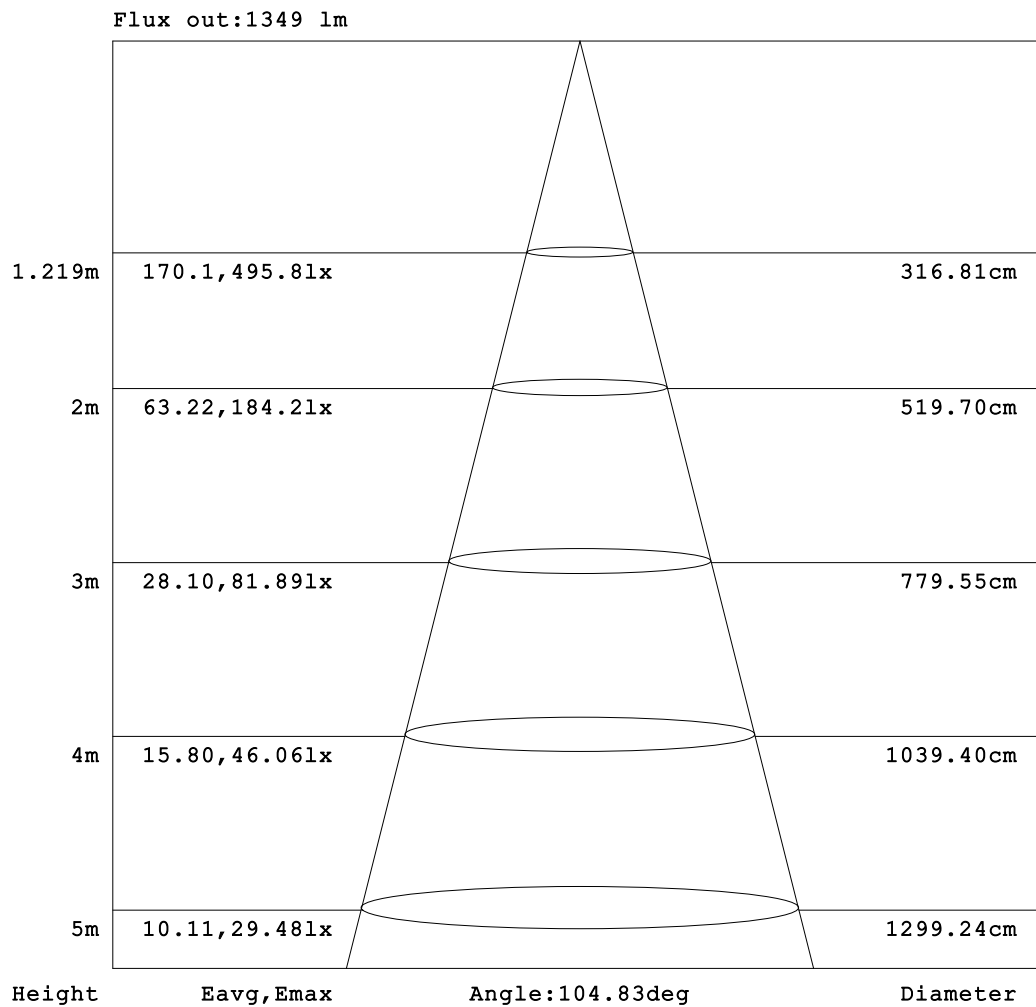


C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Ky
 Test Date:18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:7.220m [K=1.0000]
 Remarks:

AAI Figure

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:



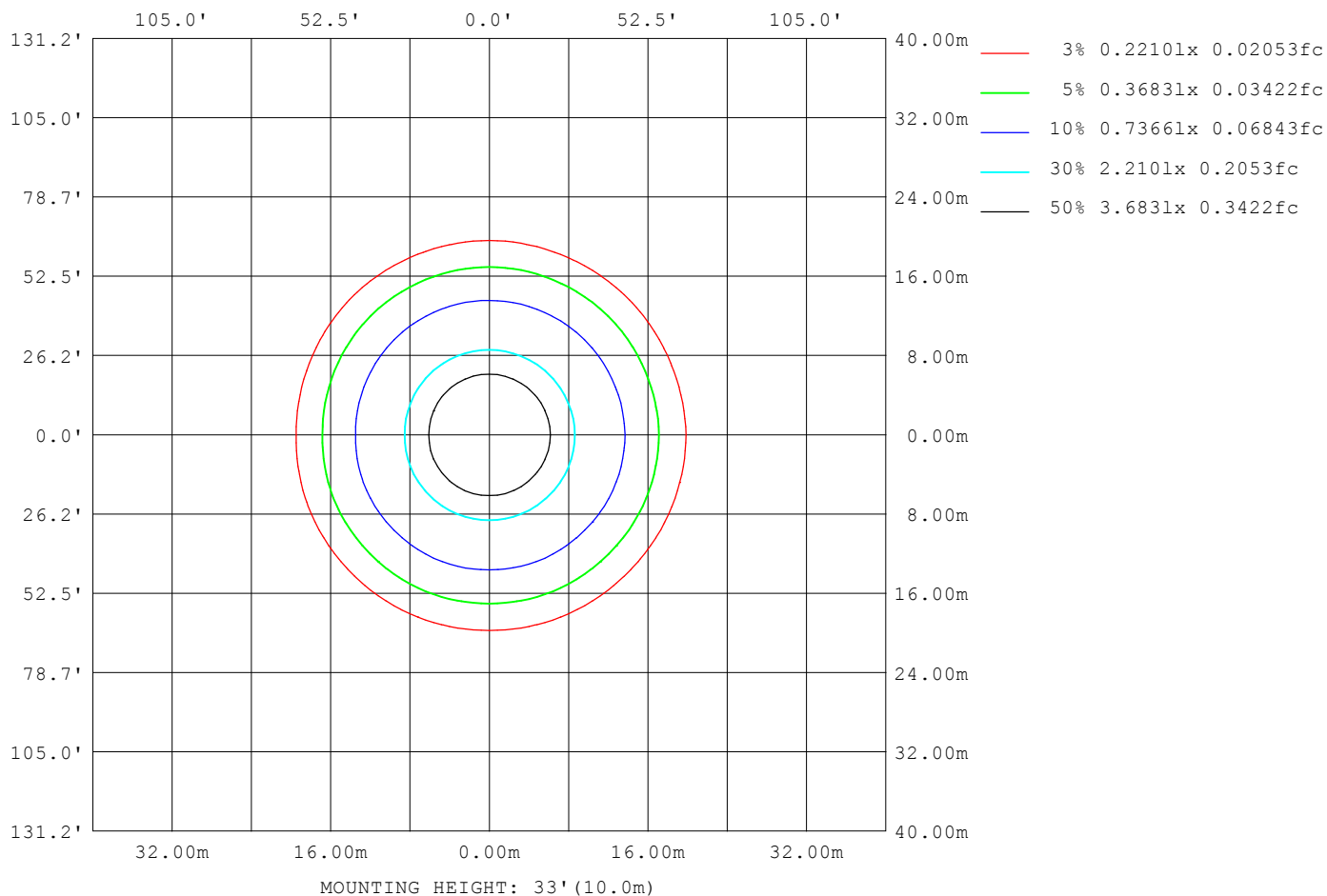
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:240.0V I:0.0961A P:21.70W PF:0.9411 Lamp Flux:1886.78x1 lm		
NAME: DEEP C 310 LED_WHT_500mA_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

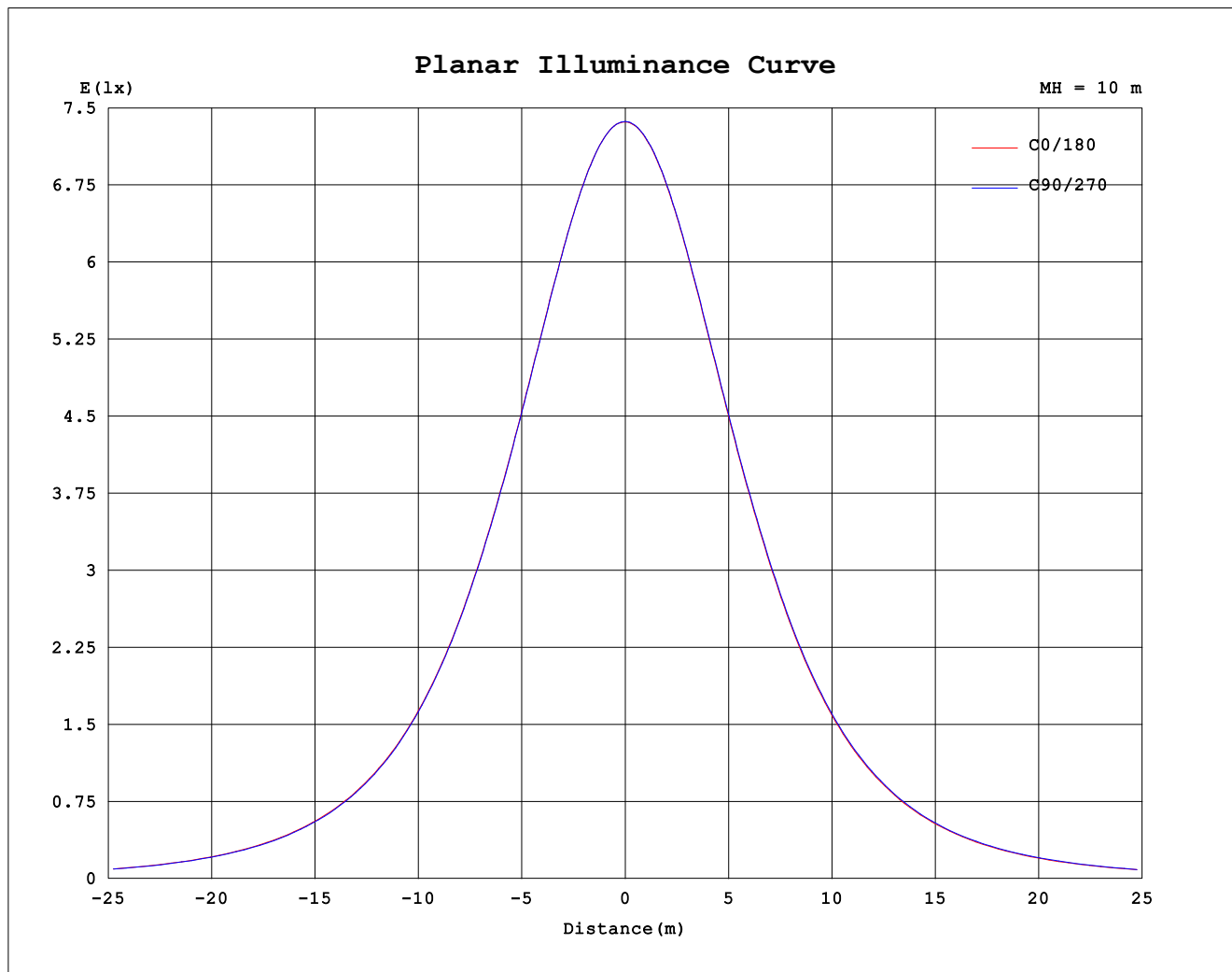
AvgL	cd/m2
L_0~180 (65) av	8146
L_0~180 (75) av	5536
L_0~180 (85) av	2263
L_90~270 (65) av	8163
L_90~270 (75) av	5535
L_90~270 (85) av	2265
L_45 (65) av	8153
L_45 (75) av	5535
L_45 (85) av	2278

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Ky
 Test Date:18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:7.220m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Ky
 Test Date: 18 May 2017

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 7.220m [K=1.0000]
 Remarks:

