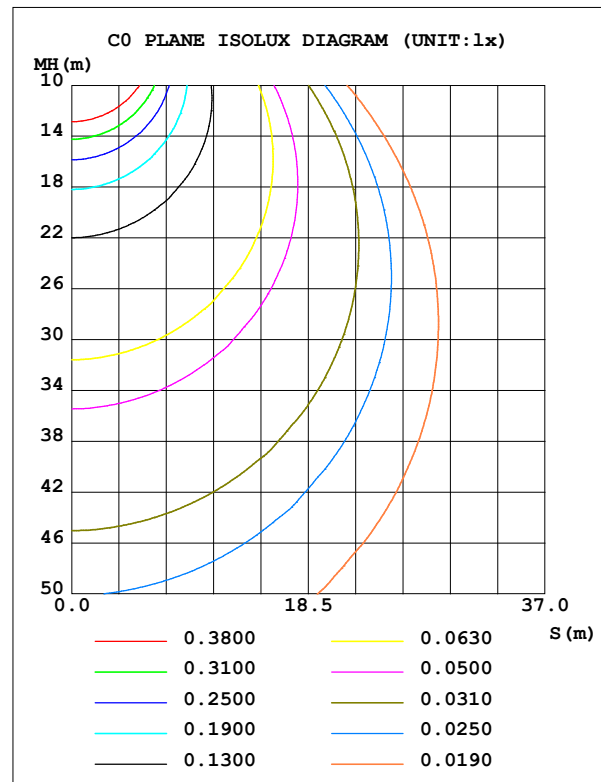
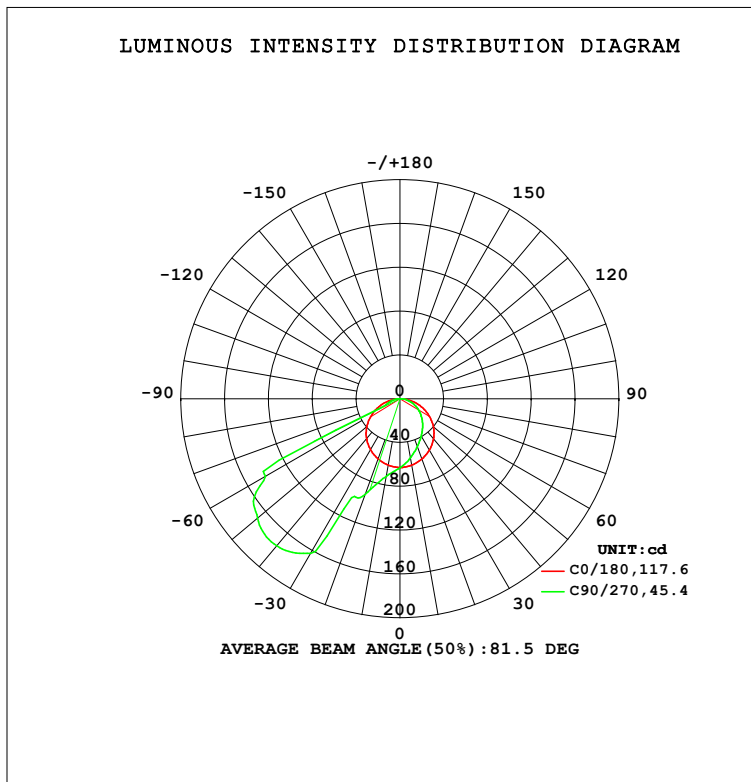


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 62.84 lm/W
MODEL	DAR3030 24V 840	I _{max} (cd)	175.7	S/MH (C0/180)	1.28	
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	2.58	
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	278.08	η UP,DN (C0-180)	0.0,26.8	
NOMINAL FLUX (lm)	278.08	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,73.2	
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: 04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
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
10	61.66	57.09	55.07	57.06	61.61	67.65	71.87	67.85	0- 10	5.986	5.986	2.15,2.15
20	58.65	49.50	46.65	49.59	58.51	75.31	92.79	75.56	10- 20	17.77	23.76	8.54,8.54
30	54.07	42.04	39.23	42.04	53.91	88.81	163.1	89.09	20- 30	30.17	53.93	19.4,19.4
40	47.89	34.80	32.40	34.73	47.47	134.1	175.3	133.9	30- 40	47.26	101.2	36.4,36.4
50	40.07	27.55	25.79	27.46	39.60	128.2	169.8	128.0	40- 50	58.11	159.3	57.3,57.3
60	30.48	20.42	19.26	20.35	29.92	106.7	141.8	105.4	50- 60	60.25	219.5	78.9,78.9
70	20.49	13.30	12.56	13.26	19.78	62.97	10.93	60.53	60- 70	41.48	261.0	93.9,93.9
80	9.238	6.405	6.087	6.389	8.747	6.316	5.446	6.303	70- 80	13.57	274.6	98.7,98.7
90	0.0684	0.1710	0.1492	0.1710	0.0653	0	0	0	80- 90	3.486	278.1	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		

Conical surface Flux(90deg): 129.6 lm

%lum = 46.6%

%lamp = 46.6%

Conical surface Flux(120deg): 219.54 lm

%lum = 78.9%

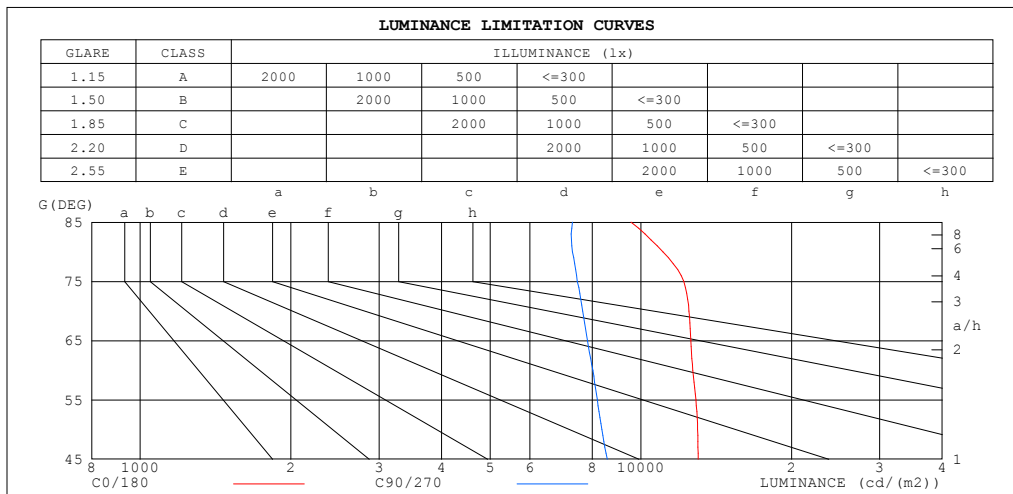
%lamp = 78.9%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	9560	7302
80	11083	7303
75	12195	7471
70	12484	7652
65	12587	7826
60	12700	8023
55	12880	8186
50	12986	8358
45	13020	8569

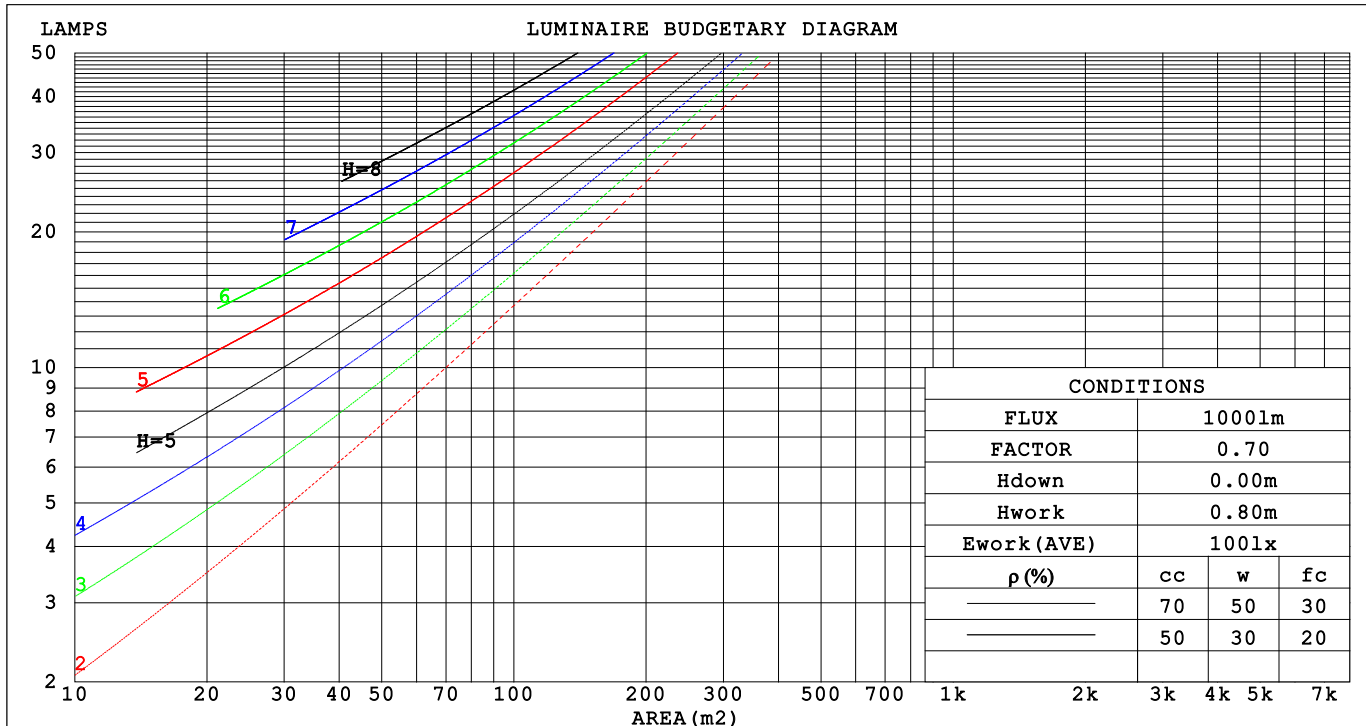
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Ky
Test Date: 04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity: 65.0%
Test Distance: 7.220m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN_STEP_120_REC_WHT_DAR3030_24V_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															



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_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	.311	.177	.056	.303	.173	.055	.290	.167	.053	.278	.160	.051	.267	.155	.050	
2.0	.299	.164	.050	.293	.161	.050	.281	.156	.049	.270	.152	.047	.260	.147	.046	
3.0	.280	.149	.045	.275	.147	.044	.264	.143	.043	.254	.139	.043	.245	.136	.042	
4.0	.260	.135	.040	.255	.134	.039	.246	.130	.039	.237	.127	.038	.229	.125	.038	
5.0	.241	.123	.036	.237	.122	.035	.229	.119	.035	.221	.117	.035	.214	.114	.034	
6.0	.224	.112	.032	.220	.111	.032	.213	.109	.032	.206	.107	.031	.199	.105	.031	
7.0	.209	.103	.029	.205	.102	.029	.198	.100	.029	.192	.099	.029	.186	.097	.028	
8.0	.195	.095	.027	.191	.094	.027	.185	.093	.026	.180	.091	.026	.175	.090	.026	
9.0	.182	.088	.025	.179	.087	.025	.174	.086	.024	.169	.085	.024	.164	.083	.024	
10.0	.171	.082	.023	.168	.081	.023	.164	.080	.023	.159	.079	.022	.155	.078	.022	

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	.180	.156	.134	.154	.134	.116	.106	.092	.080	.061	.053	.046	.019	.017	.015	
2.0	.173	.132	.097	.148	.114	.084	.102	.079	.059	.059	.046	.034	.019	.015	.011	
3.0	.166	.114	.073	.143	.099	.063	.098	.069	.044	.057	.040	.026	.018	.013	.009	
4.0	.160	.101	.057	.137	.087	.049	.094	.061	.035	.054	.036	.021	.018	.012	.007	
5.0	.153	.091	.046	.131	.079	.040	.090	.055	.028	.052	.032	.017	.017	.011	.005	
6.0	.146	.083	.038	.125	.072	.033	.086	.050	.023	.050	.030	.014	.016	.010	.005	
7.0	.139	.076	.032	.120	.066	.028	.083	.046	.020	.048	.027	.012	.016	.009	.004	
8.0	.133	.070	.028	.114	.061	.024	.079	.043	.017	.046	.025	.010	.015	.008	.003	
9.0	.126	.065	.024	.109	.057	.021	.075	.040	.015	.044	.024	.009	.014	.008	.003	
10.0	.121	.061	.022	.104	.053	.019	.072	.037	.013	.042	.022	.008	.014	.007	.003	

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm											
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_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	2H	23.7	25.3	23.9	25.5	25.7	22.0	23.6	22.3	23.8	24.0
	3H	25.5	27.0	25.8	27.2	27.5	23.6	25.1	23.9	25.3	25.6
	4H	26.4	27.8	26.7	28.0	28.3	24.3	25.7	24.6	25.9	26.2
	6H	27.0	28.3	27.3	28.6	28.9	24.8	26.2	25.2	26.4	26.7
	8H	27.2	28.5	27.6	28.8	29.1	25.0	26.3	25.4	26.6	26.9
	12H	27.4	28.6	27.7	28.9	29.2	25.2	26.4	25.6	26.7	27.0
4H	2H	24.0	25.4	24.3	25.7	25.9	22.7	24.1	23.0	24.4	24.6
	3H	26.0	27.2	26.4	27.5	27.8	24.5	25.7	24.8	26.0	26.3
	4H	27.0	28.1	27.3	28.4	28.7	25.3	26.4	25.7	26.8	27.1
	6H	27.8	28.7	28.2	29.1	29.5	26.0	27.0	26.4	27.4	27.7
	8H	28.0	29.0	28.5	29.3	29.7	26.3	27.2	26.7	27.6	28.0
	12H	28.3	29.1	28.7	29.5	29.9	26.5	27.4	26.9	27.7	28.1
8H	4H	27.1	28.1	27.6	28.4	28.8	25.7	26.6	26.1	27.0	27.4
	6H	28.1	28.8	28.5	29.2	29.7	26.6	27.3	27.0	27.7	28.2
	8H	28.5	29.1	28.9	29.5	30.0	27.0	27.6	27.4	28.0	28.5
	12H	28.8	29.3	29.2	29.8	30.3	27.3	27.8	27.8	28.3	28.8
12H	4H	27.2	28.0	27.6	28.4	28.8	25.7	26.6	26.2	26.9	27.4
	6H	28.1	28.8	28.6	29.2	29.7	26.7	27.3	27.1	27.8	28.2
	8H	28.5	29.1	29.0	29.6	30.0	27.1	27.7	27.6	28.1	28.6
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H		+ 0.3 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.5 / - 0.6					+ 0.1 / - 0.3				

CIE Pub.117, 278.1 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = -4.4$)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

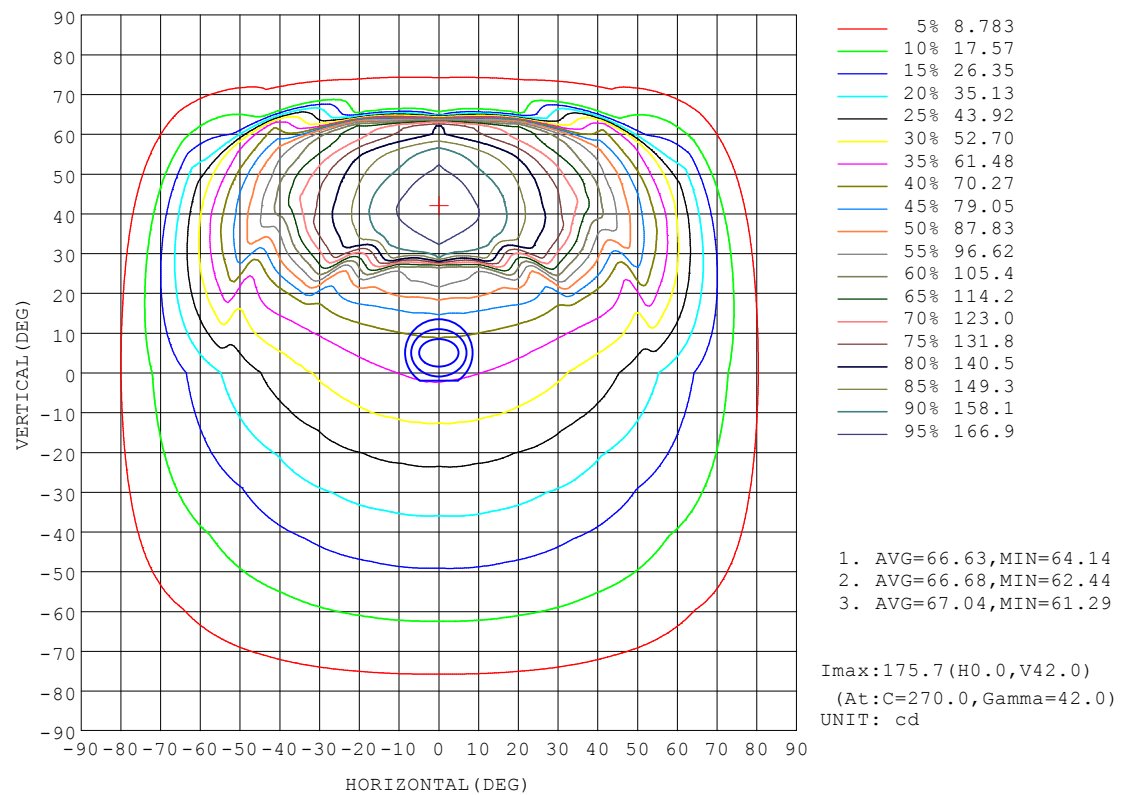
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	52	39	32	51	39	32	50	39	31	24
0.80	63	50	42	62	50	42	60	49	42	34
1.00	73	61	53	71	60	52	69	62	52	44
1.25	80	69	62	79	69	61	76	67	60	53
1.50	86	75	68	84	75	68	81	73	66	59
2.00	94	85	78	92	84	77	88	81	76	68
2.50	98	90	84	96	88	83	92	86	81	72
3.00	102	94	89	99	93	88	95	90	86	77
4.00	106	100	95	103	98	94	99	95	91	82
5.00	108	103	99	106	101	98	101	98	95	85
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:04 September 2017

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

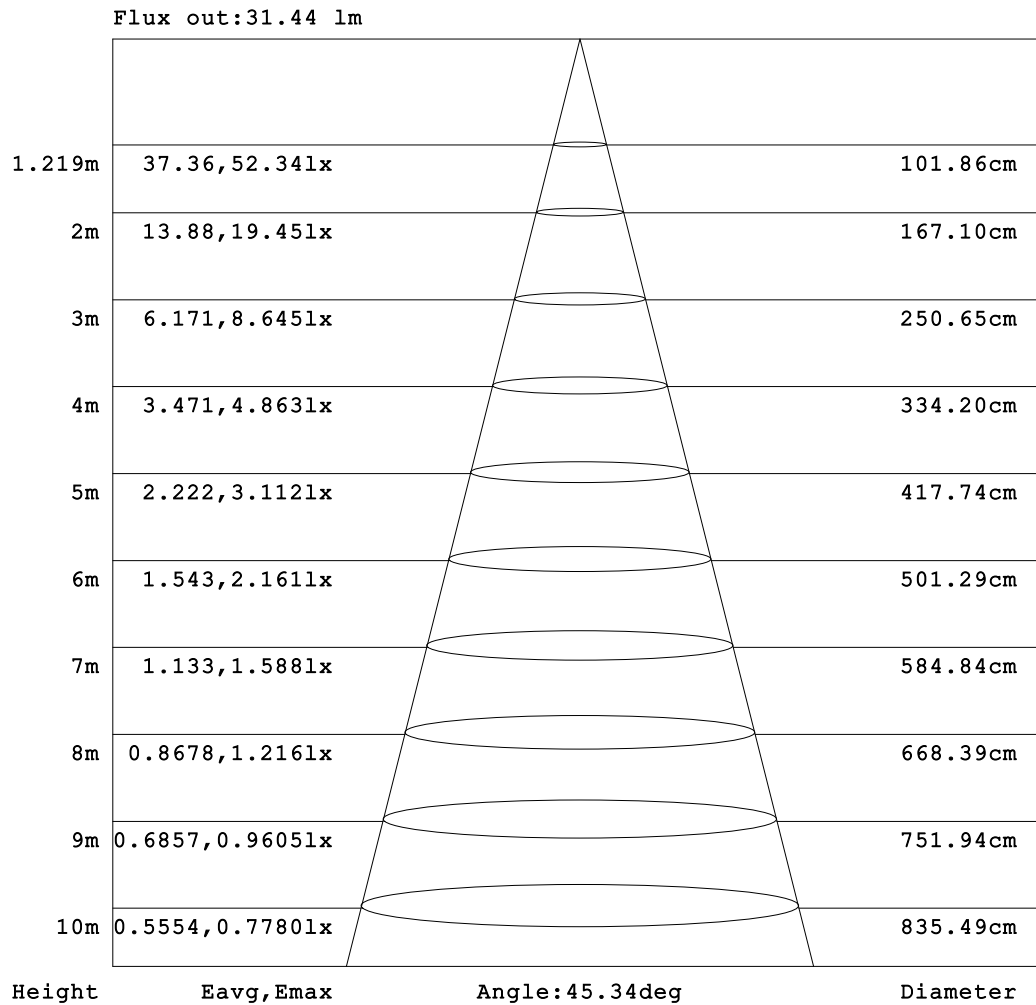


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

AAI Figure

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:



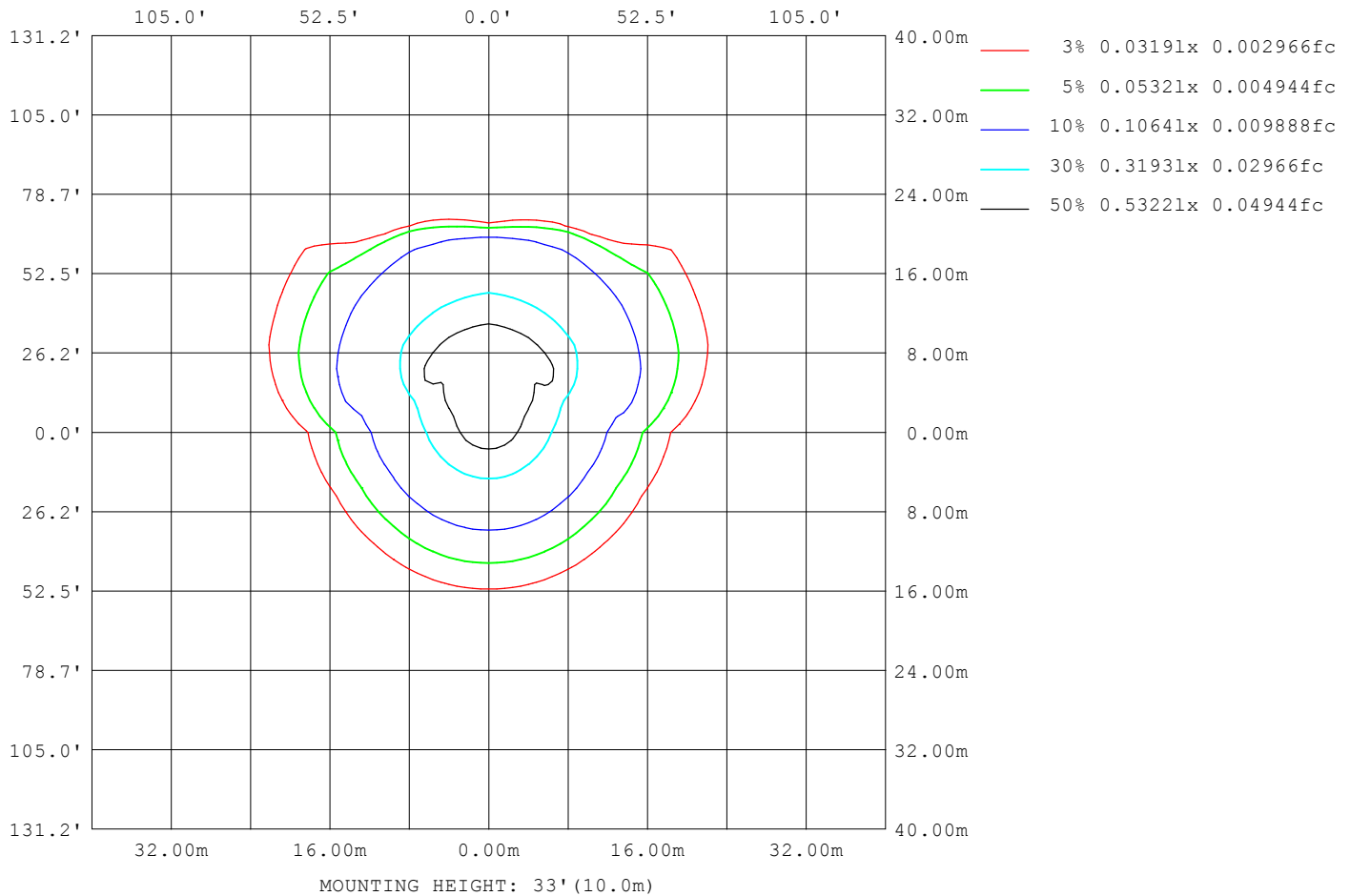
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_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:04 September 2017

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

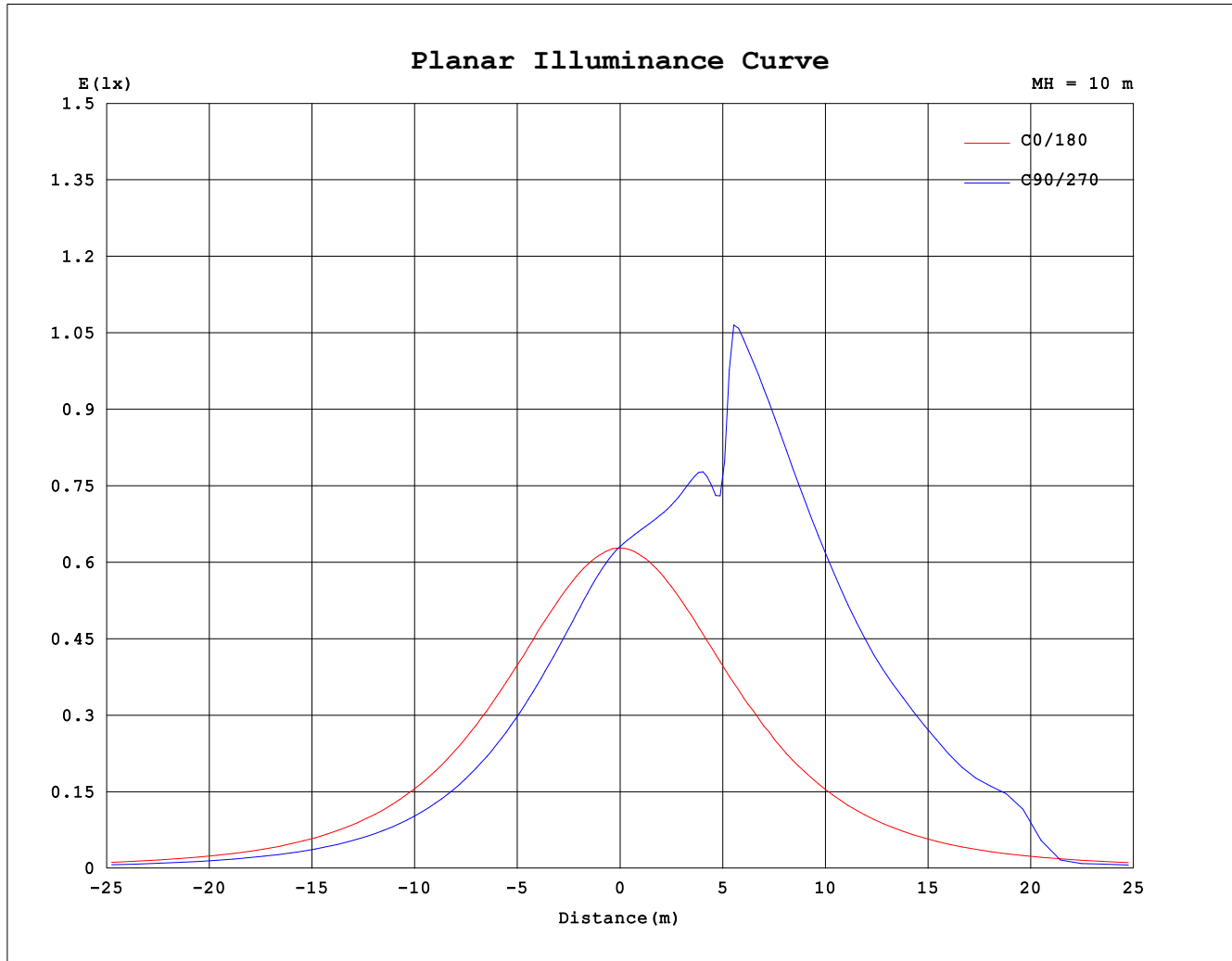
AvgL	cd/m2
L_0~180 (65) av	12422
L_0~180 (75) av	11909
L_0~180 (85) av	9235
L_90~270 (65) av	9233
L_90~270 (75) av	7080
L_90~270 (85) av	6541
L_45 (65) av	26023
L_45 (75) av	7992
L_45 (85) av	7213

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
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: 04 September 2017

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity: 65.0%
Test Distance: 7.220m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.030V I:0.1842A P:4.4253W PF:1.0000 Freq:0Hz Lamp Flux:278.08x1 lm		
NAME: WYN_STEP_120_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

Table--1

UNIT: cd

[illegible]

```
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017
```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:7.220m [K=1.0000]
Remarks:

```