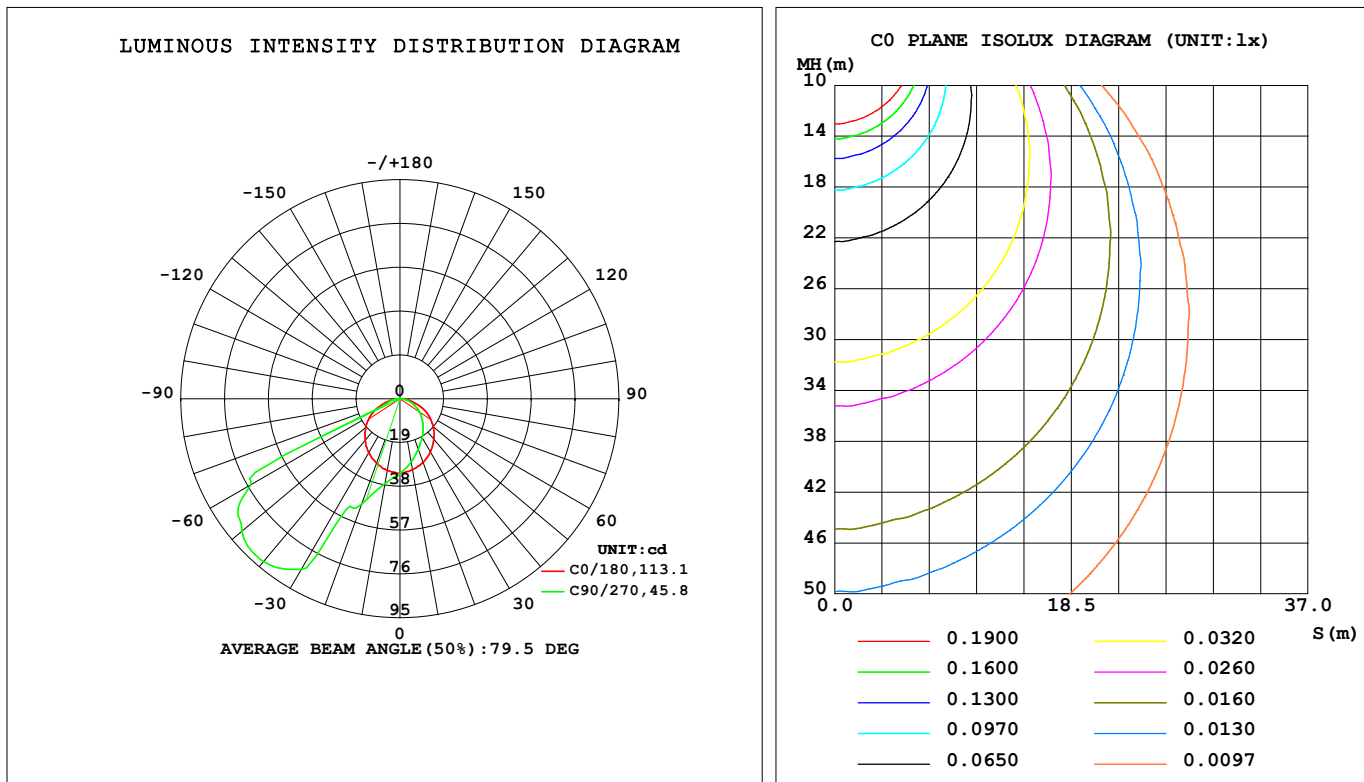


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN STEP_60_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 58.92 lm/W
MODEL	2x DAR3030 24V 840	I _{max} (cd)	92.36	S/MH (C0/180)	1.25	
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	2.60	
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	132.41	η UP,DN (C0-180)	0.0,27.2	
NOMINAL FLUX (lm)	132.41	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,72.8	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25	
TEST VOLTAGE (V)	220.0	η down (%)	100.0	CIBSE SHR MAX	1.30	



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	31.32	28.82	27.97	29.07	31.56	35.04	37.36	34.80	0- 10	3.067	3.067	2.32,2.32
20	29.38	24.74	23.34	24.98	29.72	38.93	48.56	38.47	10- 20	9.078	12.15	9.17,9.17
30	26.57	20.85	19.34	21.04	27.09	45.05	85.45	44.08	20- 30	15.35	27.50	20.8,20.8
40	22.95	17.09	15.66	17.25	23.49	64.21	92.13	62.08	30- 40	23.68	51.17	38.6,38.6
50	18.85	13.36	12.24	13.51	19.39	57.79	89.37	56.19	40- 50	28.22	79.39	60,60
60	14.30	9.699	8.816	9.811	14.74	43.31	74.64	39.77	50- 60	27.94	107.3	81.1,81.1
70	8.846	6.103	5.496	6.193	9.135	17.38	6.305	14.95	60- 70	17.57	124.9	94.3,94.3
80	3.698	2.706	2.456	2.771	3.845	4.071	3.129	3.809	70- 80	5.871	130.8	98.8,98.8
90	0	0.0155	0.0311	0.0093	0	0	0	0	80- 90	1.638	132.4	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): 65.076 lm

%lum = 49.1%

%lamp = 49.1%

Conical surface Flux(120deg): 107.33 lm

%lum = 81.1%

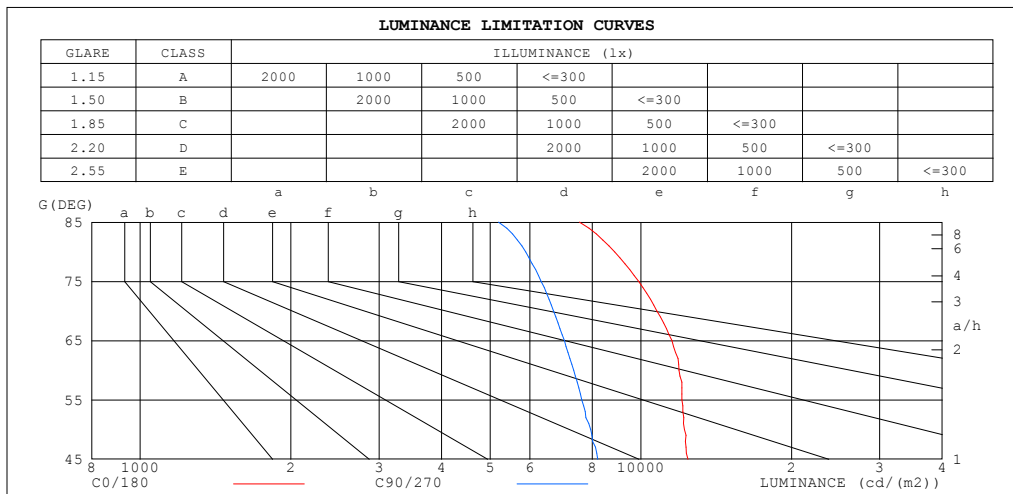
%lamp = 81.1%

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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN STEP_60_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	7542	5198
80	8873	5894
75	9901	6325
70	10777	6695
65	11542	7034
60	11916	7347
55	12077	7624
50	12216	7937
45	12428	8202

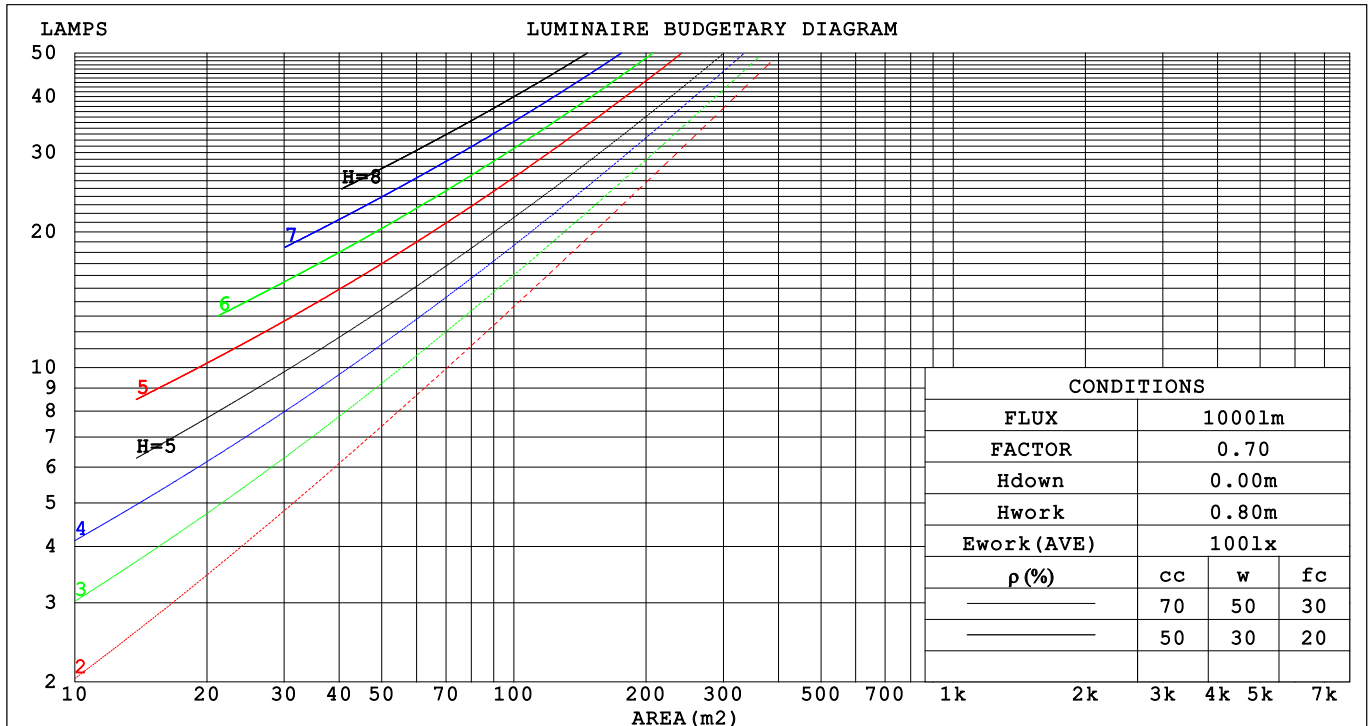
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Ky
Test Date:04 September 2017

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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN_STEP_60_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			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	1.04	1.00	.96	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.90	.84	.78	.89	.82	.77	.85	.80	.75	.82	.77	.73	.79	.75	.72	.69
3.0	.79	.70	.64	.77	.69	.63	.74	.67	.62	.71	.66	.61	.69	.64	.60	.58
4.0	.69	.60	.53	.68	.59	.53	.65	.58	.52	.63	.56	.51	.61	.55	.50	.48
5.0	.61	.52	.45	.60	.51	.45	.58	.50	.44	.56	.49	.44	.54	.48	.43	.41
6.0	.54	.45	.38	.53	.45	.38	.52	.44	.38	.50	.43	.37	.48	.42	.37	.35
7.0	.49	.40	.33	.48	.39	.33	.46	.39	.33	.45	.38	.33	.43	.37	.32	.30
8.0	.44	.35	.29	.43	.35	.29	.42	.34	.29	.41	.34	.29	.40	.33	.28	.26
9.0	.40	.32	.26	.39	.31	.26	.38	.31	.26	.37	.30	.25	.36	.30	.25	.23
10.0	.37	.28	.23	.36	.28	.23	.35	.28	.23	.34	.27	.23	.33	.27	.23	.21



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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN STEP_60_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	.303	.172	.055	.296	.169	.054	.283	.162	.052	.271	.156	.050	.259	.150	.048	
2.0	.292	.160	.049	.286	.157	.048	.274	.152	.047	.263	.148	.046	.253	.143	.045	
3.0	.274	.146	.044	.268	.144	.043	.258	.140	.042	.248	.136	.042	.239	.133	.041	
4.0	.255	.133	.039	.250	.131	.039	.241	.128	.038	.232	.125	.038	.224	.122	.037	
5.0	.237	.121	.035	.233	.119	.035	.224	.117	.034	.217	.114	.034	.210	.112	.034	
6.0	.221	.111	.032	.217	.109	.031	.209	.107	.031	.202	.105	.031	.196	.103	.031	
7.0	.206	.102	.029	.202	.101	.029	.195	.099	.028	.189	.097	.028	.183	.095	.028	
8.0	.192	.094	.026	.189	.093	.026	.183	.091	.026	.177	.090	.026	.172	.088	.026	
9.0	.180	.087	.024	.177	.086	.024	.172	.085	.024	.167	.084	.024	.162	.082	.024	
10.0	.169	.081	.023	.167	.080	.022	.162	.079	.022	.157	.078	.022	.153	.077	.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	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.172	.132	.098	.148	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.165	.114	.074	.142	.099	.064	.097	.069	.045	.056	.040	.026	.018	.013	.009	
4.0	.158	.101	.057	.136	.087	.050	.093	.061	.035	.054	.036	.021	.017	.012	.007	
5.0	.151	.091	.046	.130	.079	.040	.090	.055	.028	.052	.032	.017	.017	.011	.006	
6.0	.145	.083	.038	.124	.072	.033	.086	.050	.024	.050	.029	.014	.016	.010	.005	
7.0	.138	.076	.032	.119	.066	.028	.082	.046	.020	.048	.027	.012	.015	.009	.004	
8.0	.132	.070	.028	.113	.061	.024	.078	.043	.017	.046	.025	.010	.015	.008	.003	
9.0	.126	.065	.024	.108	.057	.021	.075	.040	.015	.044	.023	.009	.014	.008	.003	
10.0	.120	.061	.022	.103	.053	.019	.072	.037	.014	.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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm											
NAME: WYN_STEP_60_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	26.2	27.7	26.4	27.9	28.2	24.3	25.9	24.6	26.1	26.3	
	27.9	29.3	28.2	29.6	29.8	25.8	27.2	26.1	27.5	27.7	
	28.6	29.9	28.9	30.2	30.5	26.4	27.7	26.7	28.0	28.3	
	29.1	30.4	29.4	30.6	30.9	26.8	28.1	27.1	28.4	28.7	
	29.2	30.5	29.6	30.8	31.1	27.0	28.2	27.3	28.5	28.8	
	29.3	30.5	29.7	30.8	31.1	27.1	28.3	27.4	28.6	28.9	
4H	26.5	27.9	26.8	28.1	28.4	25.0	26.4	25.4	26.7	26.9	
	28.4	29.6	28.7	29.9	30.2	26.7	27.9	27.0	28.2	28.5	
	29.2	30.3	29.6	30.6	30.9	27.4	28.5	27.8	28.8	29.1	
	29.9	30.8	30.3	31.2	31.5	28.0	28.9	28.4	29.3	29.6	
	30.1	31.0	30.5	31.4	31.7	28.2	29.1	28.6	29.4	29.8	
	30.3	31.1	30.7	31.5	31.9	28.3	29.1	28.7	29.5	29.9	
8H	29.4	30.3	29.8	30.6	31.0	27.7	28.6	28.2	29.0	29.4	
	30.2	30.9	30.6	31.3	31.7	28.5	29.2	28.9	29.6	30.0	
	30.5	31.1	30.9	31.5	32.0	28.8	29.4	29.2	29.9	30.3	
	30.7	31.3	31.2	31.7	32.2	29.0	29.6	29.5	30.0	30.5	
12H	29.4	30.2	29.8	30.6	31.0	27.8	28.6	28.2	29.0	29.4	
	30.2	30.8	30.6	31.3	31.7	28.6	29.2	29.0	29.6	30.1	
	30.5	31.1	31.0	31.5	32.0	28.9	29.5	29.4	29.9	30.4	
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.2 / - 0.2					
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3					
2.0H	+ 0.5 / - 0.6					+ 0.1 / - 0.3					

CIE Pub.117, 132.4 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = -7.0$)

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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN STEP_60_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

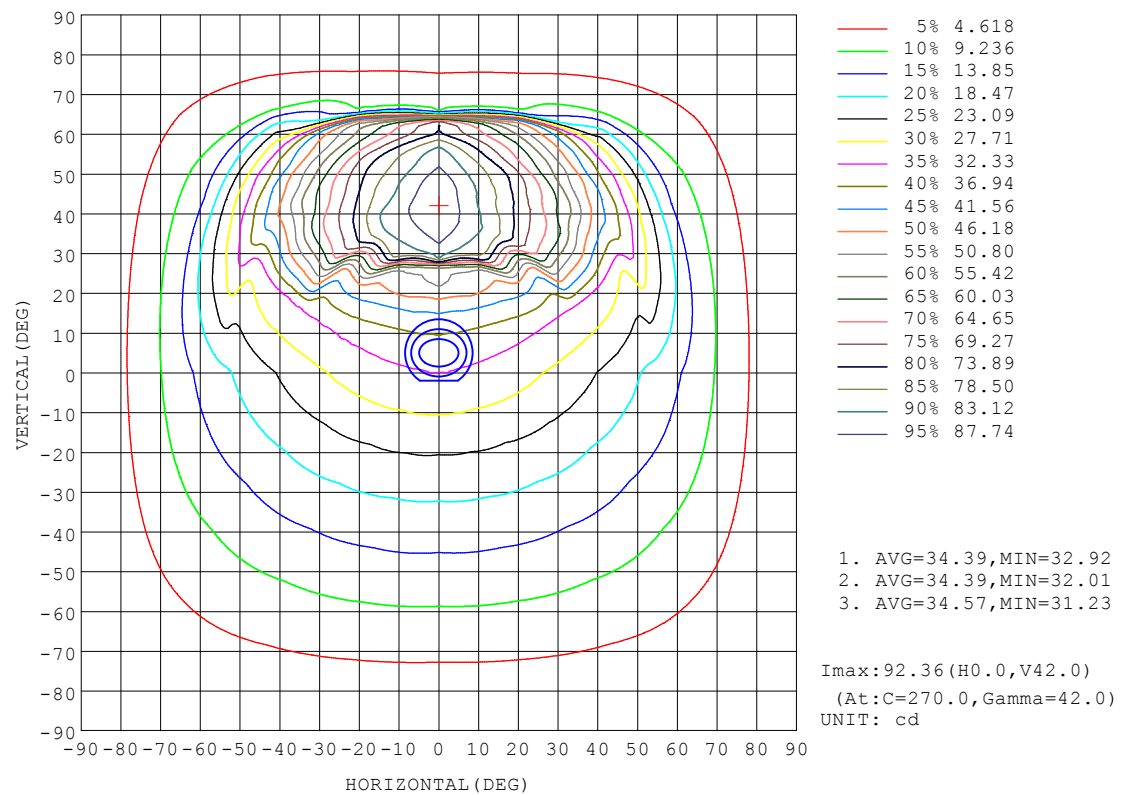
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	53	41	33	52	40	33	51	40	33	26
0.80	64	52	44	63	51	44	61	51	43	36
1.00	74	62	54	73	62	54	70	63	54	46
1.25	82	71	63	80	70	63	77	69	62	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	95	86	79	93	85	79	89	82	77	69
2.50	99	91	85	97	89	84	93	87	82	73
3.00	102	95	90	100	94	89	96	91	86	78
4.00	106	100	96	104	99	94	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: 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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN STEP_60_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

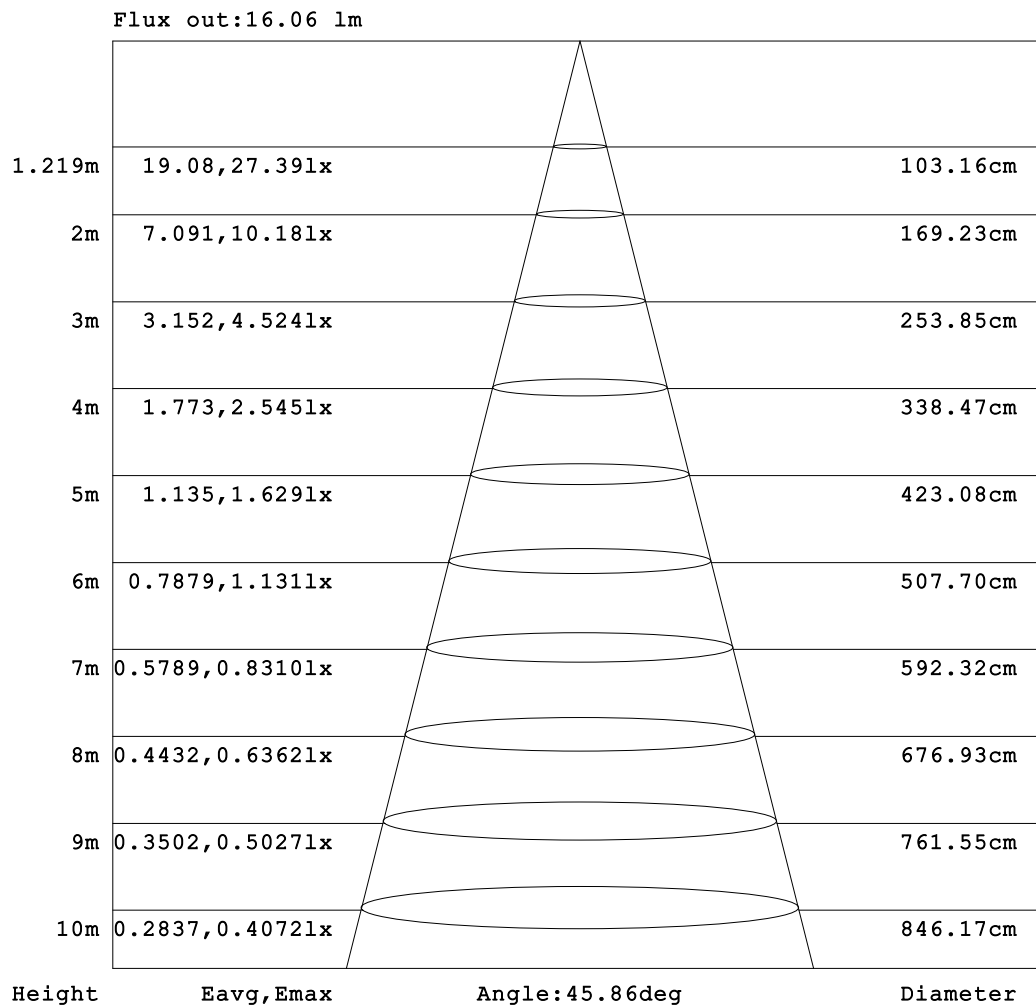


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Ky
Test Date: 04 September 2017

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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN_STEP_60_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:



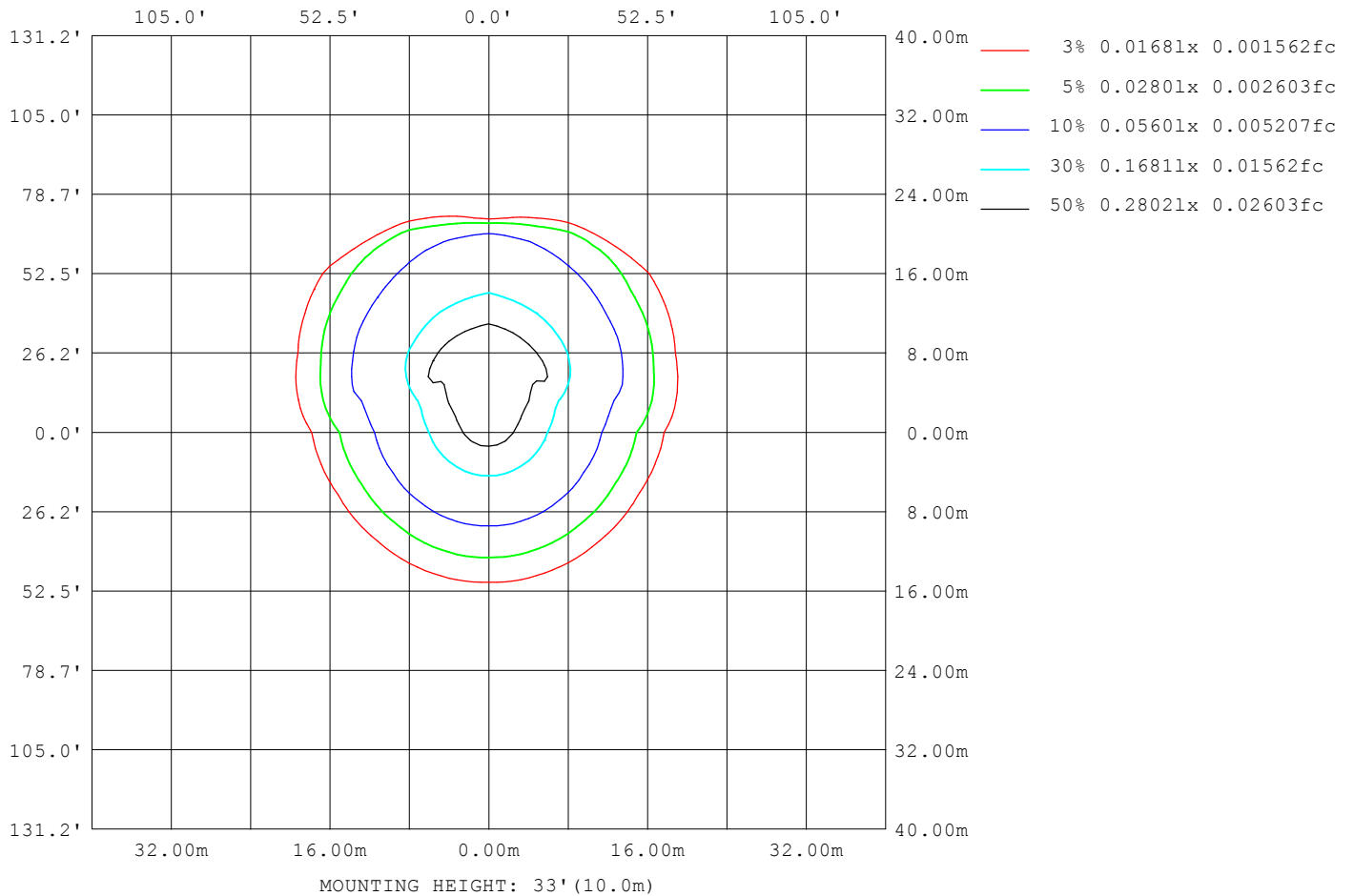
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN_STEP_60_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:24.088V I:0.0933A P:2.2473W PF:1.0000 Freq:0Hz Lamp Flux:132.41x1 lm		
NAME: WYN STEP_60_REC_WHT_DAR3030_24V_4K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Darkon	SUR.:	Shielding Angle:

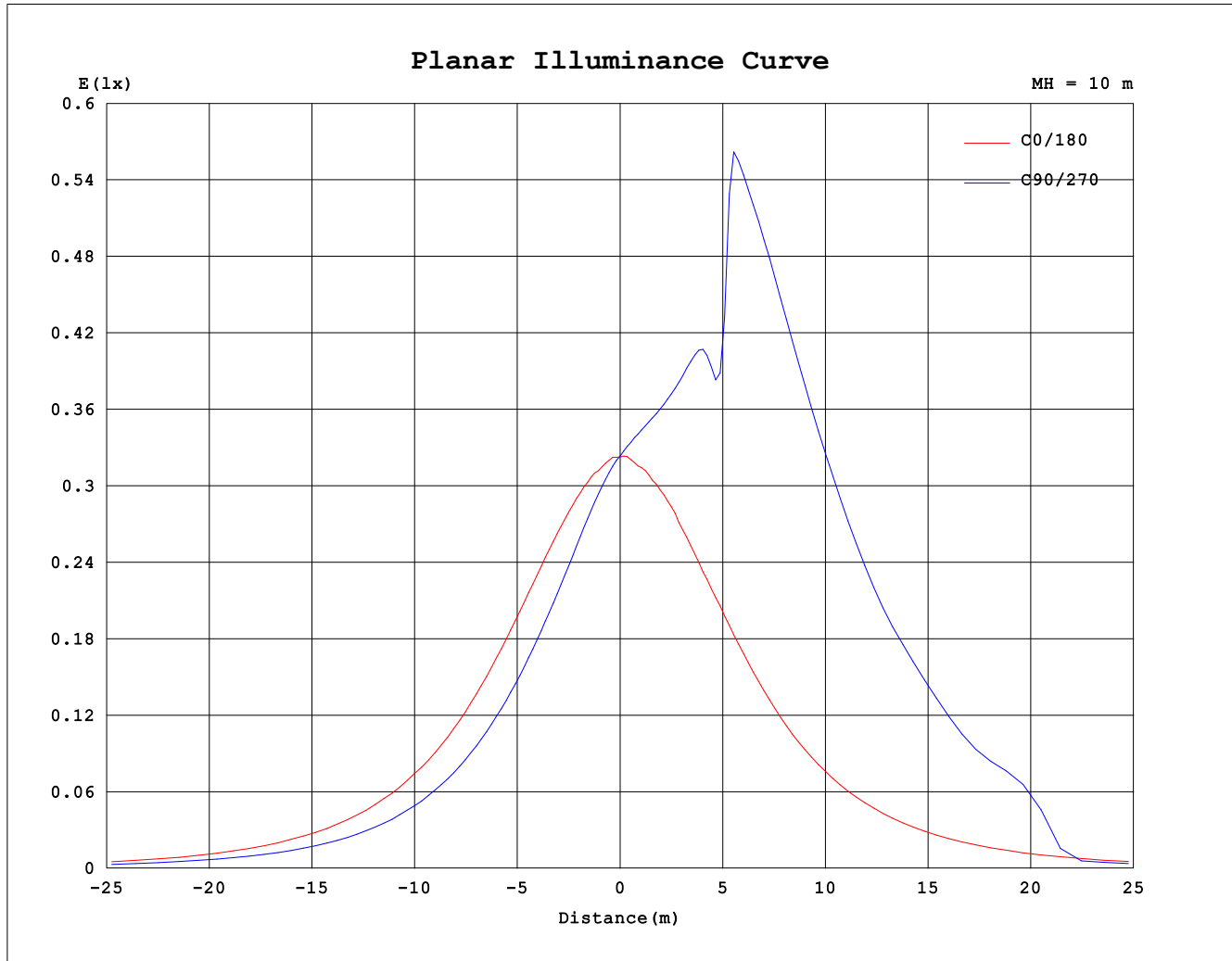
AvgL	cd/m2
L_0~180 (65) av	11703
L_0~180 (75) av	10066
L_0~180 (85) av	7705
L_90~270 (65) av	13831
L_90~270 (75) av	6956
L_90~270 (85) av	6216
L_45 (65) av	19071
L_45 (75) av	8834
L_45 (85) av	7068

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:

