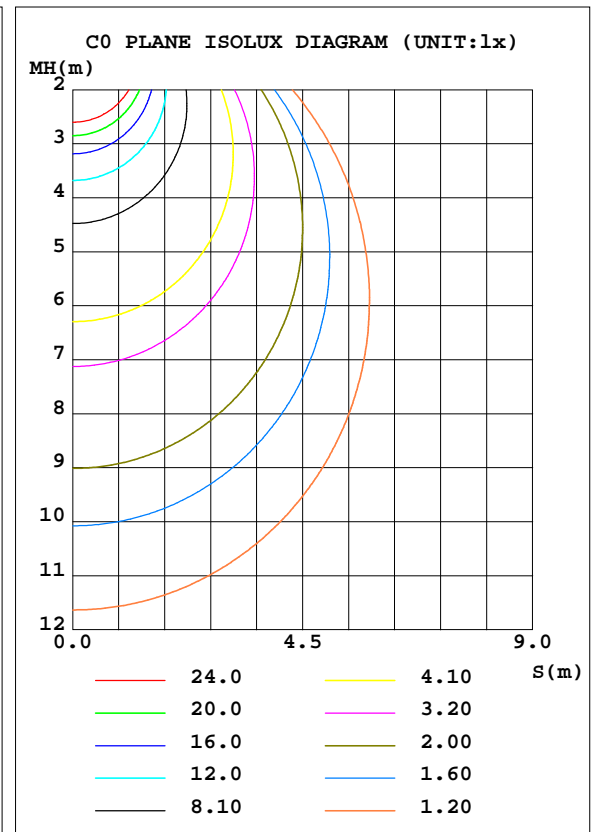
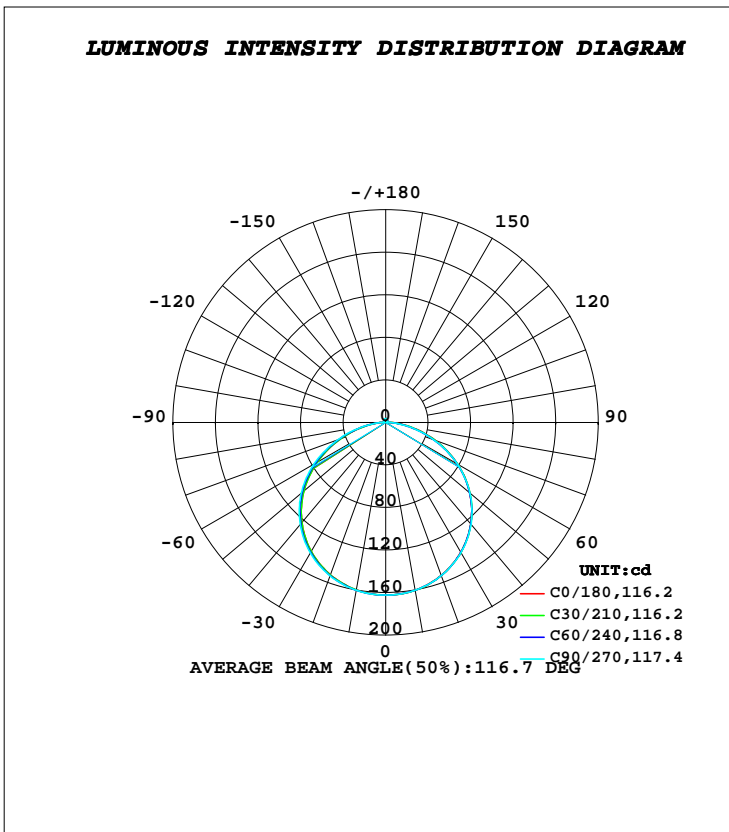


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 109.52 lm/W			
MODEL		I _{max} (cd)	162.5	S/MH(C0/180)	1.29
NOMINAL POWER(W)	4.6	LOR(%)	100.0	S/MH(C90/270)	1.30
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	503.81	η UP, DN(C0-180)	1.4, 48.6
NOMINAL FLUX(lm)	503.812	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.5, 48.5
LAMPS INSIDE	1	η up(%)	2.9	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	97.1	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

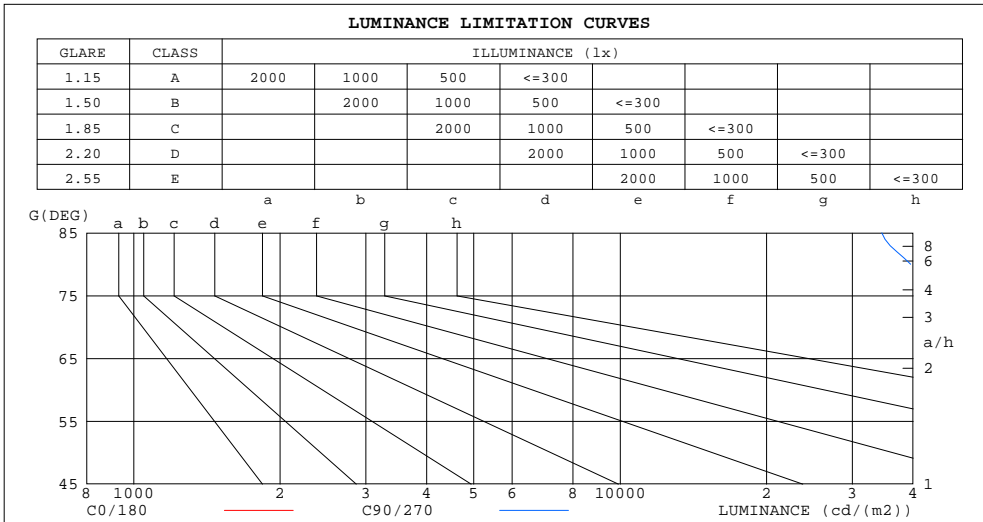
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	160.1	160.2	160.2	160.1	159.9	160.0	160.2	160.5	0- 10	15.40	15.40	3.06,3.06
20	153.0	153.2	153.3	152.9	152.4	152.8	153.4	153.7	10- 20	44.40	59.80	11.9,11.9
30	141.1	141.4	141.5	140.8	140.0	140.6	141.8	142.1	20- 30	68.12	127.9	25.4,25.4
40	124.5	124.7	125.0	123.8	122.6	123.5	125.2	125.7	30- 40	83.45	211.4	42,42
50	103.3	103.3	103.5	101.9	100.8	101.6	103.7	104.7	40- 50	88.04	299.4	59.4,59.4
60	77.97	77.68	77.55	75.70	74.07	74.89	77.57	79.11	50- 60	80.65	380.1	75.4,75.4
70	49.92	49.15	48.61	46.88	45.50	46.01	48.61	50.78	60- 70	61.90	442.0	87.7,87.7
80	22.76	21.61	20.60	19.45	19.05	18.90	20.24	23.20	70- 80	35.97	477.9	94.9,94.9
90	4.942	3.518	1.076	2.099	2.660	2.400	1.339	4.384	80- 90	11.36	489.3	97.1,97.1
100	1.717	1.393	1.323	1.366	1.546	1.587	1.564	1.687	90-100	1.950	491.2	97.5,97.5
110	1.652	1.640	1.687	1.726	1.870	1.900	1.878	1.825	100-110	1.709	492.9	97.8,97.8
120	2.047	2.013	2.052	2.117	2.218	2.252	2.209	2.156	110-120	1.935	494.9	98.2,98.2
130	2.445	2.388	2.422	2.504	2.558	2.598	2.540	2.485	120-130	2.073	497.0	98.6,98.6
140	2.807	2.750	2.795	2.866	2.874	2.926	2.873	2.812	130-140	2.062	499.0	99,99
150	3.137	3.088	3.150	3.201	3.171	3.232	3.205	3.133	140-150	1.882	500.9	99.4,99.4
160	3.461	3.418	3.492	3.517	3.480	3.514	3.514	3.444	150-160	1.534	502.4	99.7,99.7
170	3.730	3.705	3.763	3.765	3.707	3.728	3.758	3.706	160-170	1.020	503.5	99.9,99.9
180	3.821	3.826	3.872	3.850	3.820	3.825	3.873	3.851	170-180	0.3609	503.8	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-03-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	45662	34529
80	43683	39536
75	46269	44030
70	48653	47377
65	50573	49821
60	51981	51702
55	52978	52903
50	53551	53667
45	53980	54129

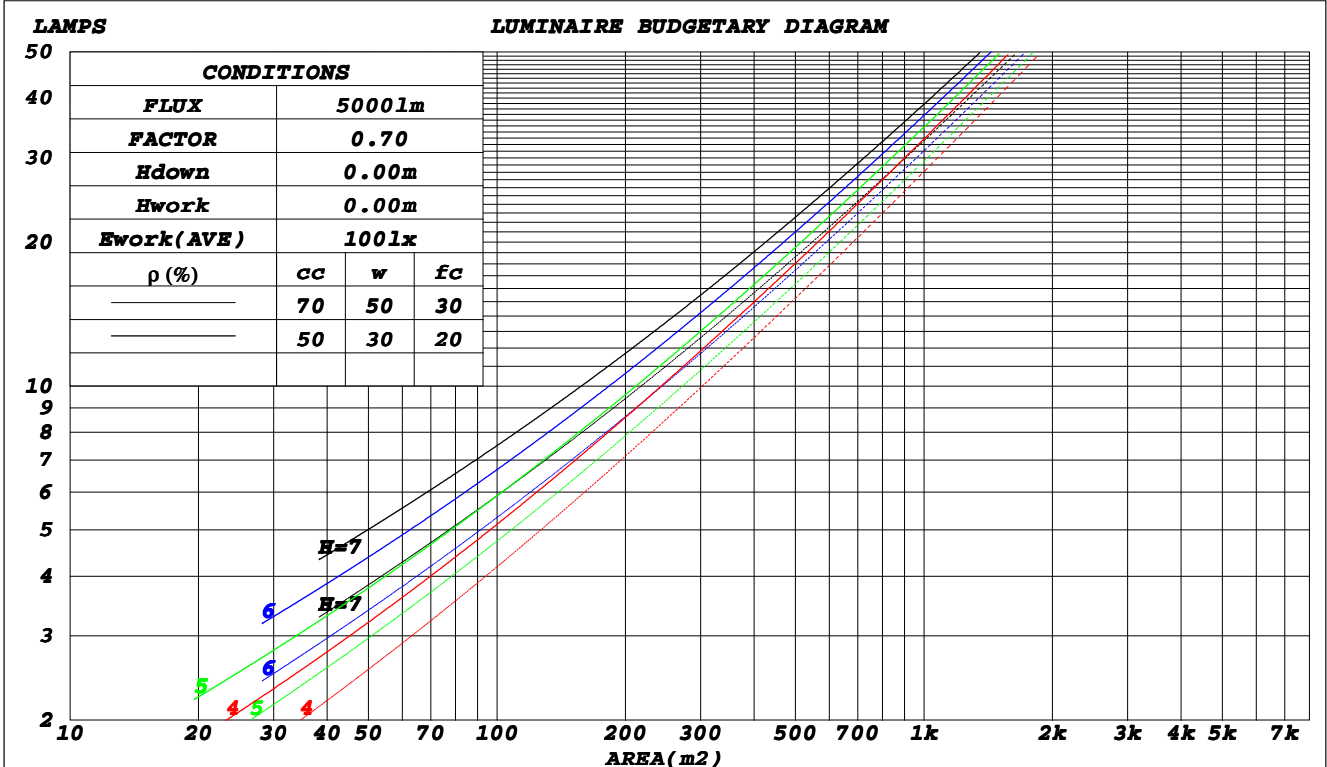
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.03	.98	.94	1.00	.96	.93	.95	.92	.89	.91	.88	.86	.87	.85	.83	.81
2.0	.89	.82	.77	.87	.81	.75	.83	.78	.73	.79	.75	.71	.76	.72	.69	.67
3.0	.78	.70	.63	.76	.69	.63	.73	.66	.61	.70	.64	.60	.67	.62	.58	.56
4.0	.69	.60	.53	.68	.59	.53	.65	.58	.52	.62	.56	.51	.60	.54	.50	.48
5.0	.62	.53	.46	.60	.52	.45	.58	.50	.45	.56	.49	.44	.53	.48	.43	.41
6.0	.55	.46	.40	.54	.46	.40	.52	.45	.39	.50	.43	.38	.48	.42	.38	.36
7.0	.50	.41	.35	.49	.41	.35	.47	.40	.34	.46	.39	.34	.44	.38	.33	.31
8.0	.46	.37	.31	.45	.37	.31	.43	.36	.31	.42	.35	.30	.40	.34	.30	.28
9.0	.42	.34	.28	.41	.33	.28	.40	.33	.28	.38	.32	.27	.37	.31	.27	.25
10.0	.39	.31	.25	.38	.30	.25	.37	.30	.25	.36	.29	.25	.35	.29	.24	.23



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-03-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.316	.180	.057	.308	.176	.056	.293	.168	.054	.280	.161	.052	.267	.155	.050	
2.0	.296	.162	.050	.289	.159	.049	.275	.153	.048	.263	.148	.046	.252	.142	.045	
3.0	.273	.145	.043	.266	.143	.043	.255	.138	.042	.244	.134	.041	.234	.129	.040	
4.0	.251	.131	.038	.246	.129	.038	.235	.125	.037	.225	.121	.037	.216	.118	.036	
5.0	.232	.118	.034	.227	.117	.034	.218	.113	.033	.209	.110	.033	.201	.107	.032	
6.0	.215	.108	.031	.210	.106	.031	.202	.104	.030	.194	.101	.030	.187	.098	.029	
7.0	.200	.099	.028	.196	.098	.028	.188	.095	.027	.181	.093	.027	.174	.091	.027	
8.0	.186	.091	.026	.183	.090	.025	.176	.088	.025	.170	.086	.025	.164	.084	.024	
9.0	.175	.084	.024	.171	.084	.023	.165	.082	.023	.159	.080	.023	.154	.078	.023	
10.0	.164	.079	.022	.161	.078	.022	.156	.076	.021	.150	.075	.021	.145	.073	.021	

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0																
1.0	.212	.212	.212	.182	.182	.182	.124	.124	.124	.071	.071	.071	.023	.023	.023	
2.0	.195	.154	.120	.167	.133	.104	.114	.092	.072	.066	.053	.042	.021	.017	.014	
3.0	.187	.137	.096	.161	.118	.084	.110	.082	.059	.064	.048	.035	.020	.016	.011	
4.0	.180	.124	.081	.154	.107	.070	.106	.074	.049	.061	.044	.029	.020	.014	.010	
5.0	.172	.113	.070	.148	.098	.060	.102	.068	.043	.059	.040	.025	.019	.013	.008	
6.0	.165	.105	.062	.142	.091	.054	.098	.064	.038	.057	.037	.023	.018	.012	.007	
7.0	.158	.098	.056	.136	.085	.049	.094	.060	.034	.055	.035	.021	.018	.012	.007	
8.0	.152	.092	.051	.131	.080	.045	.091	.056	.032	.053	.033	.019	.017	.011	.006	
9.0	.146	.087	.048	.126	.076	.042	.087	.053	.030	.051	.032	.018	.016	.010	.006	
10.0	.140	.083	.045	.121	.072	.039	.084	.051	.028	.049	.030	.017	.016	.010	.006	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-03-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

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	26.6	28.1	26.9	28.4	28.6	26.6	28.1	26.9	28.3	28.6
3H	28.2	29.6	28.5	29.9	30.2	28.1	29.5	28.5	29.8	30.1
4H	28.8	30.2	29.2	30.5	30.8	28.7	30.0	29.1	30.3	30.7
6H	29.3	30.6	29.7	30.9	31.3	29.2	30.4	29.5	30.7	31.1
8H	29.5	30.7	29.9	31.1	31.4	29.3	30.5	29.7	30.8	31.2
12H	29.7	30.8	30.1	31.2	31.5	29.4	30.5	29.8	30.9	31.2
4H 2H	27.2	28.5	27.6	28.8	29.2	27.2	28.5	27.5	28.8	29.1
3H	29.0	30.1	29.4	30.5	30.9	28.9	30.1	29.3	30.4	30.8
4H	29.8	30.8	30.2	31.2	31.6	29.7	30.7	30.1	31.1	31.5
6H	30.4	31.3	30.9	31.7	32.2	30.2	31.1	30.7	31.5	32.0
8H	30.7	31.5	31.1	31.9	32.4	30.4	31.3	30.9	31.7	32.1
12H	30.9	31.7	31.3	32.1	32.6	30.5	31.3	31.0	31.8	32.2
8H 4H	30.0	30.9	30.5	31.3	31.8	29.9	30.8	30.4	31.2	31.7
6H	30.8	31.6	31.3	32.0	32.5	30.6	31.4	31.1	31.8	32.3
8H	31.2	31.8	31.7	32.3	32.8	30.9	31.6	31.4	32.0	32.5
12H	31.5	32.0	32.0	32.5	33.1	31.1	31.7	31.7	32.2	32.7
12H 4H	30.0	30.8	30.5	31.3	31.8	29.9	30.7	30.4	31.2	31.7
6H	30.9	31.5	31.4	32.0	32.5	30.7	31.4	31.2	31.8	32.3
8H	31.3	31.8	31.8	32.3	32.9	31.0	31.6	31.6	32.1	32.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 503.8 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -2.4)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-03-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

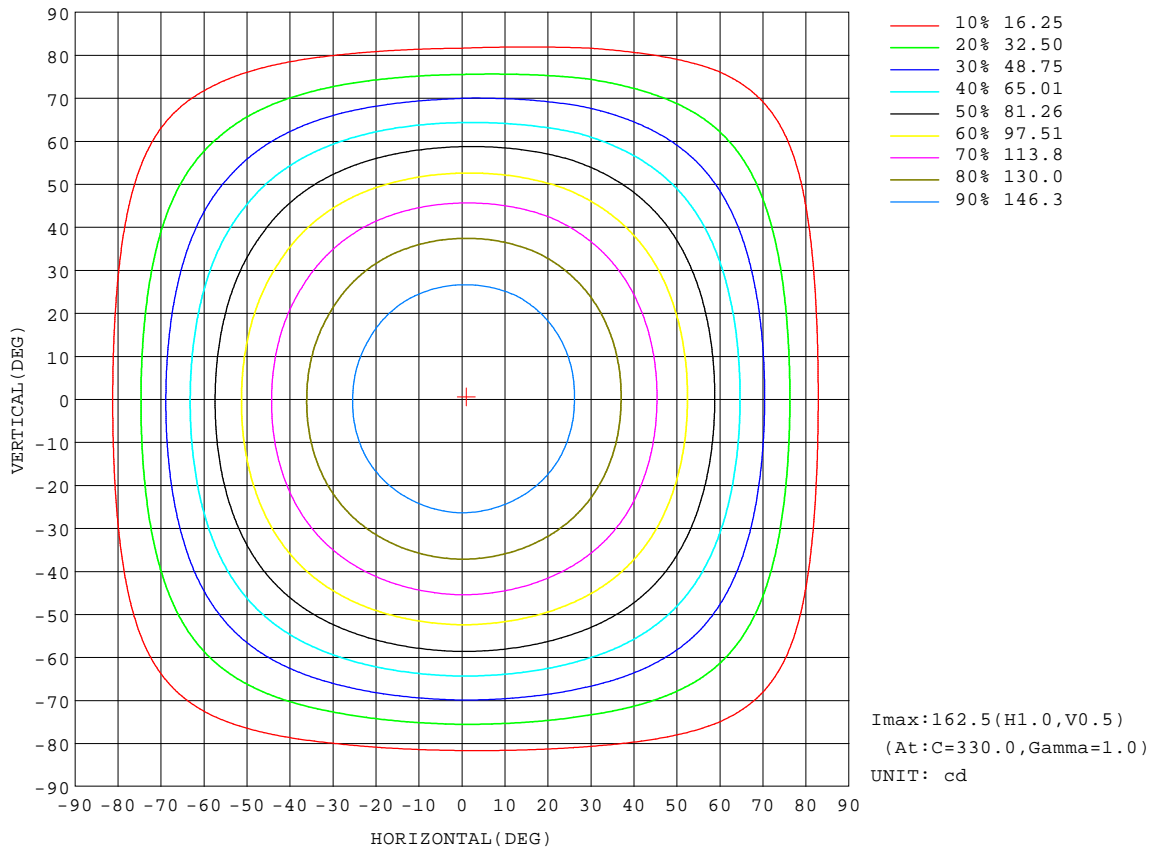
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	44	37	55	44	37	54	43	37	30
0.80	66	54	47	65	54	46	63	53	46	39
1.00	74	63	56	73	62	55	70	63	54	47
1.25	81	71	63	80	70	63	77	68	62	54
1.50	87	76	69	85	75	69	81	73	67	59
2.00	93	85	78	91	83	77	88	81	75	67
2.50	98	89	83	95	88	82	91	85	80	71
3.00	101	94	88	99	92	87	94	89	84	75
4.00	105	99	94	102	97	93	98	93	90	80
5.00	108	102	98	105	100	96	100	96	93	83
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:2019-03-30

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity:65.0%
Test Distance:8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		



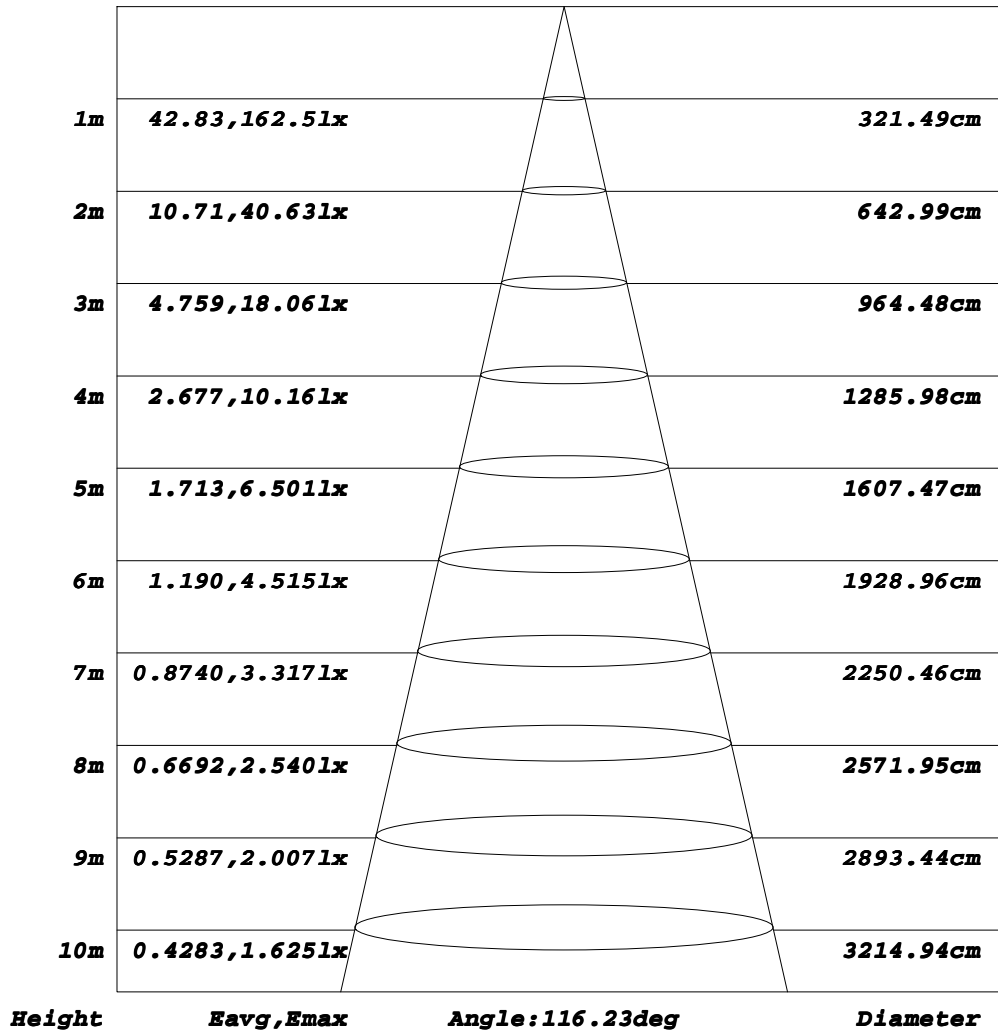
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

Flux out:372.7 lm



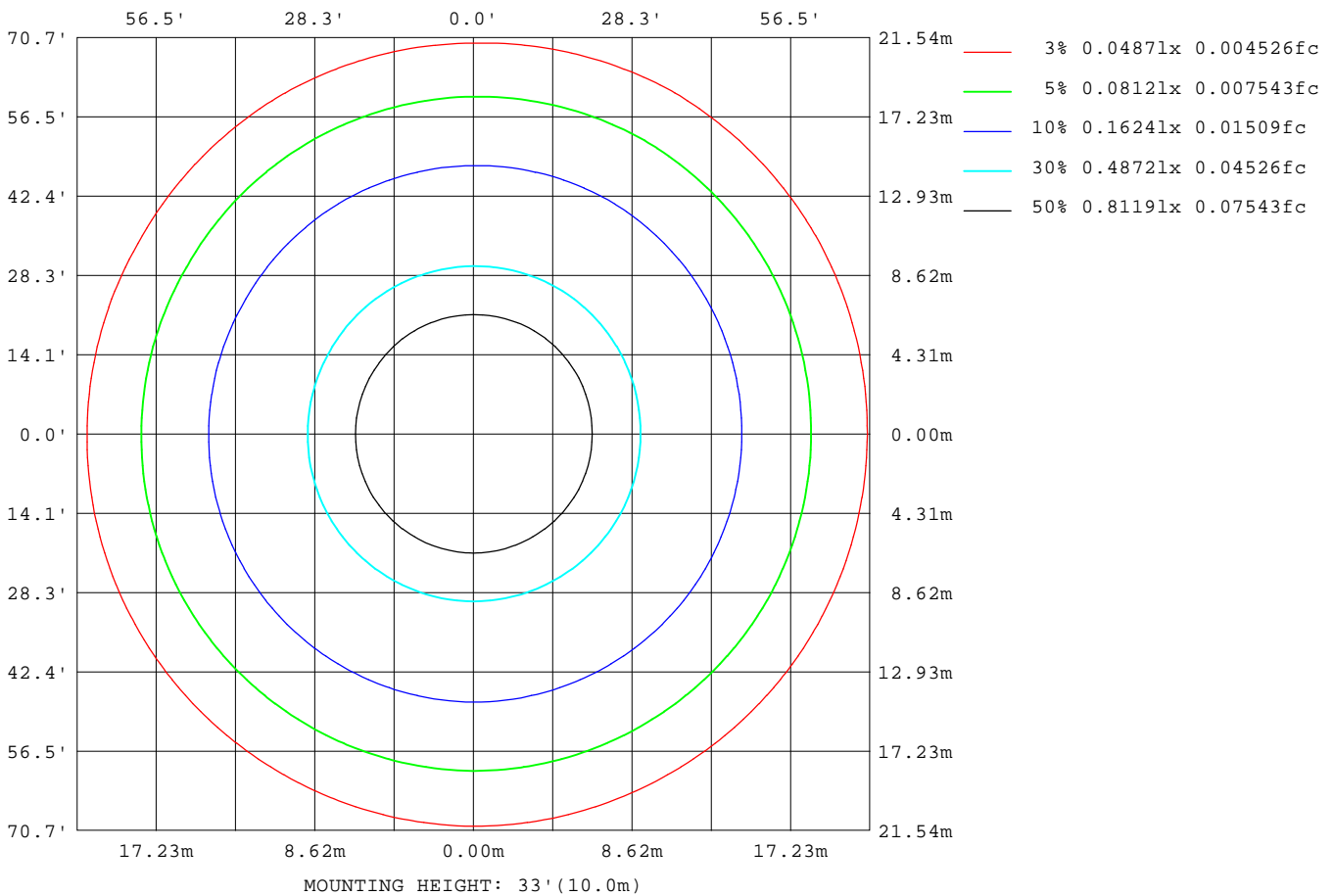
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

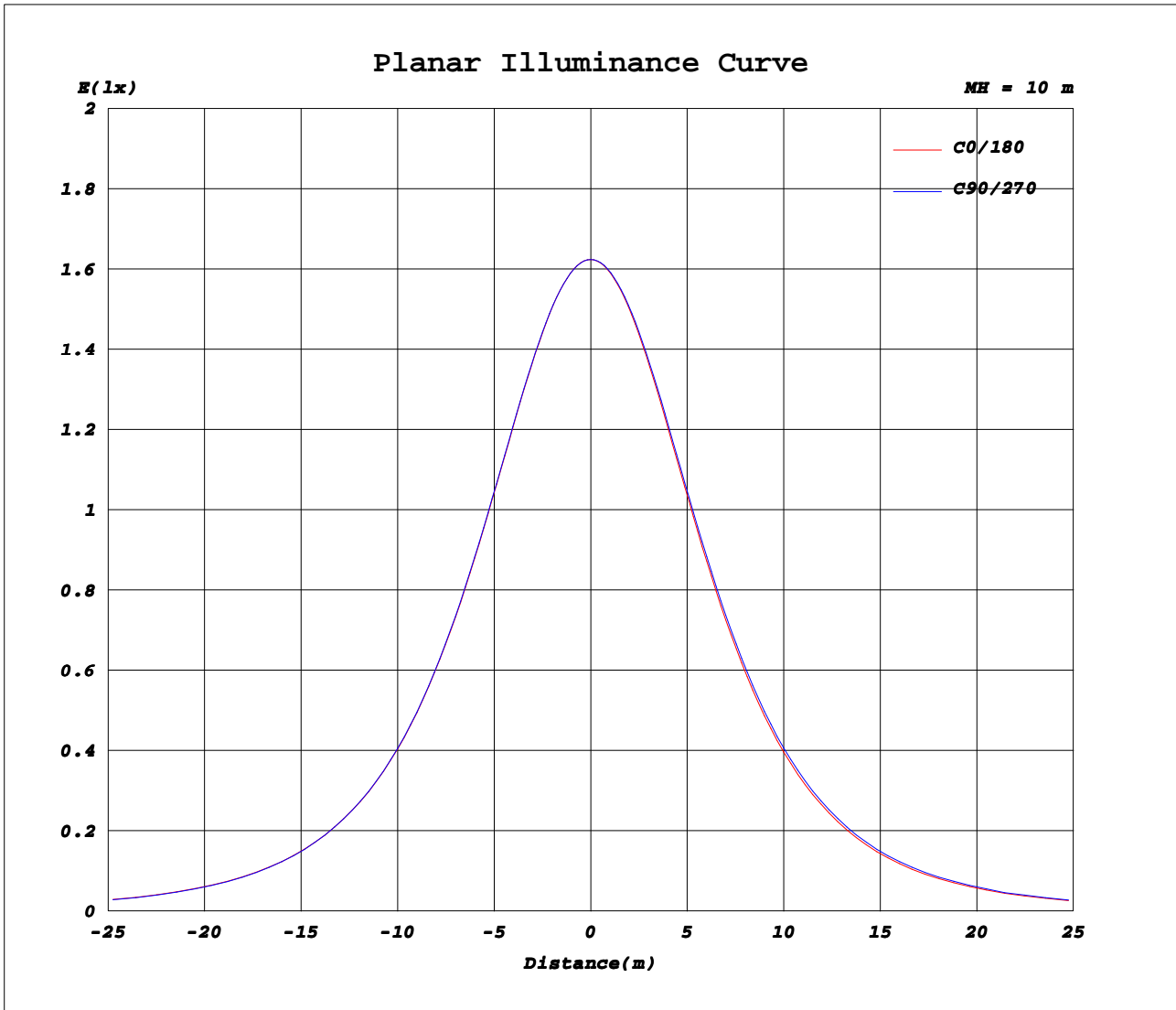
Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.000V I:0.1920A P:4.6000W PF:1.0000 Freq:0Hz Lamp Flux:503.812x1 lm		
NAME: 127-044	TYPE:LED	
MFR.: Tronix Lighting		

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	162	162	162	162	162	163	162	162	162	162	162	163							
5	162	162	162	162	162	162	162	162	162	162	162	162							
10	160	160	160	160	160	160	160	160	160	160	160	160							
15	157	157	157	157	157	157	157	157	157	157	158	158							
20	153	153	153	153	153	153	152	152	153	153	154	154							
25	148	148	148	148	148	147	147	147	148	148	149	148							
30	141	141	141	142	141	141	140	140	141	142	142	142							
35	133	134	134	134	133	133	132	132	133	134	135	134							
40	125	125	125	125	124	124	123	123	124	125	126	125							
45	115	115	115	115	114	113	112	112	114	115	116	115							
50	103	103	103	103	102	102	101	100	103	104	105	104							
55	91.2	91.2	90.8	91.0	89.8	88.8	87.8	87.7	89.7	91.1	92.7	92.0							
60	78.0	77.9	77.4	77.6	76.1	75.3	74.1	73.8	76.0	77.6	79.4	78.8							
65	64.1	63.9	63.2	63.2	61.9	60.9	59.9	59.6	61.5	61.9	65.3	65.0							
70	49.9	49.7	48.6	48.6	47.2	46.6	45.5	45.1	46.9	48.6	50.8	50.8							
75	35.9	35.6	34.3	34.2	32.8	32.4	31.6	31.0	32.6	34.1	36.5	36.6							
80	22.8	22.4	20.8	20.6	19.3	19.6	19.0	18.4	19.4	20.2	23.0	23.4							
85	11.9	11.2	9.75	9.03	8.46	8.79	8.74	8.16	8.45	8.47	11.4	12.2							
90	4.94	4.21	2.83	1.08	1.90	2.29	2.66	2.50	2.30	1.34	3.75	5.02							
95	2.44	1.98	1.36	1.15	1.22	1.21	1.41	1.45	1.47	1.42	1.79	2.56							
100	1.72	1.49	1.30	1.32	1.36	1.38	1.55	1.59	1.59	1.56	1.55	1.82							
105	1.49	1.46	1.46	1.50	1.53	1.55	1.70	1.74	1.73	1.72	1.68	1.67							
110	1.65	1.64	1.64	1.69	1.72	1.74	1.87	1.91	1.90	1.88	1.84	1.81							
115	1.85	1.83	1.83	1.87	1.91	1.93	2.04	2.08	2.07	2.04	2.00	1.98							
120	2.05	2.01	2.01	2.05	2.10	2.13	2.22	2.26	2.25	2.21	2.16	2.15							
125	2.25	2.21	2.19	2.24	2.29	2.33	2.39	2.44	2.42	2.38	2.32	2.32							
130	2.45	2.40	2.38	2.42	2.49	2.52	2.56	2.61	2.58	2.54	2.48	2.49							
135	2.63	2.58	2.56	2.61	2.67	2.71	2.72	2.78	2.75	2.71	2.65	2.65							
140	2.81	2.76	2.74	2.80	2.85	2.88	2.87	2.93	2.92	2.87	2.81	2.81							
145	2.97	2.93	2.91	2.98	3.03	3.05	3.02	3.08	3.08	3.04	2.97	2.97							
150	3.14	3.09	3.08	3.15	3.19	3.21	3.17	3.23	3.23	3.20	3.14	3.13							
155	3.30	3.25	3.26	3.32	3.36	3.37	3.33	3.37	3.38	3.36	3.31	3.28							
160	3.46	3.41	3.42	3.49	3.52	3.52	3.48	3.50	3.52	3.51	3.46	3.42							
165	3.60	3.56	3.58	3.64	3.66	3.64	3.60	3.62	3.64	3.65	3.60	3.56							
170	3.73	3.69	3.72	3.76	3.77	3.76	3.71	3.71	3.75	3.76	3.73	3.68							
175	3.81	3.78	3.81	3.85	3.85	3.83	3.76	3.76	3.80	3.82	3.81	3.75							
180	3.82	3.81	3.85	3.87	3.87	3.83	3.82	3.81	3.84	3.87	3.87	3.83							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-30

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.406.11
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks: