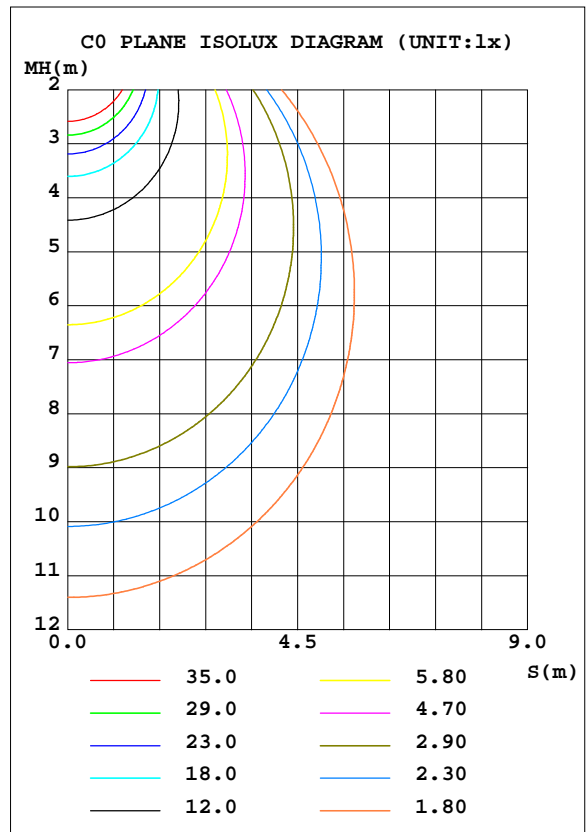
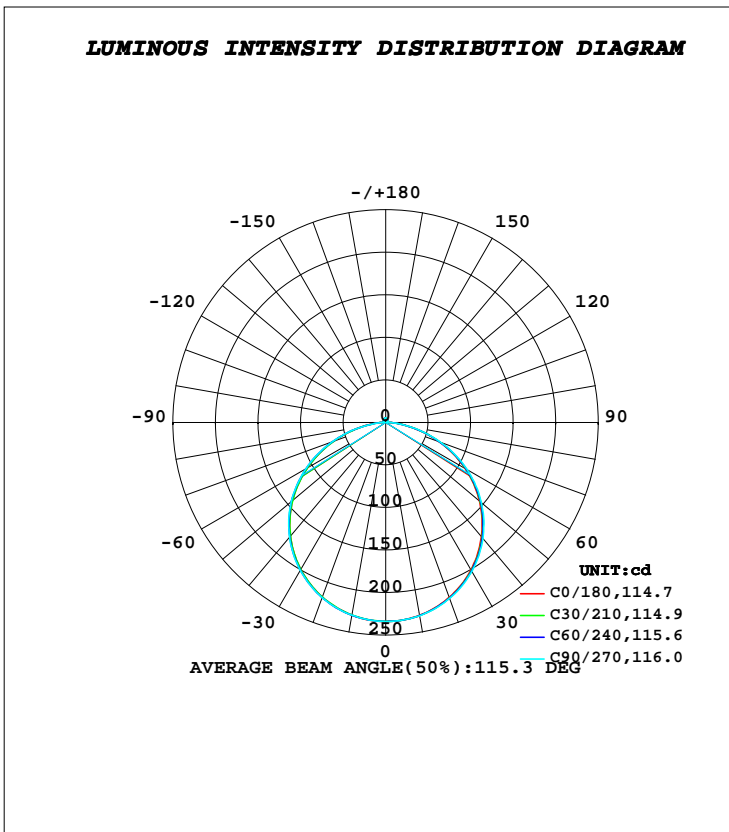


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.000V I:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059	TYPE:LED	
MFR.: Tronix Lighting		

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		Imax(cd)	234.2	S/MH(C0/180)	1.27
NOMINAL POWER(W)	8.7	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	709.88	η UP, DN(C0-180)	1.4, 48.8
NOMINAL FLUX(lm)	709.881	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.5, 48.3
LAMPS INSIDE	1	η up(%)	2.8	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	97.2	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2019-03-31

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:

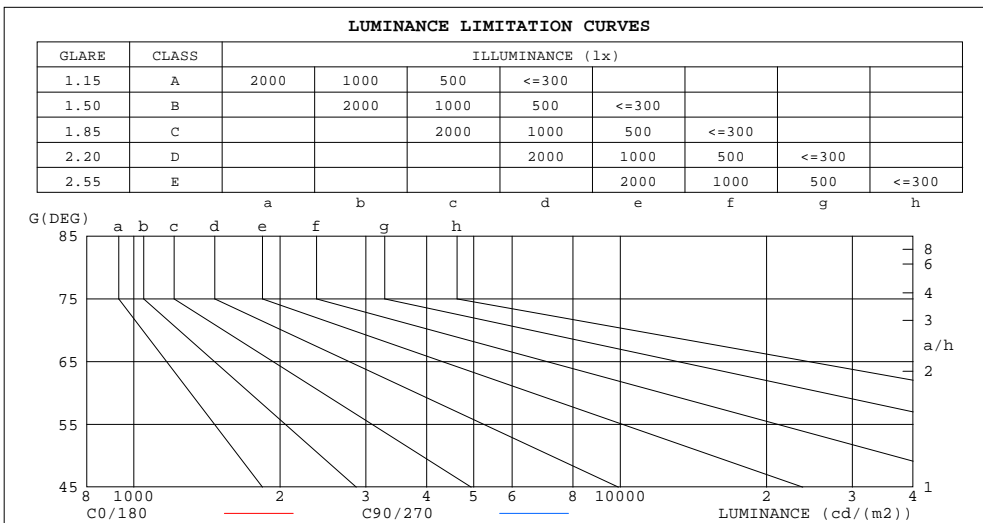
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	230.1	230.4	230.6	230.5	229.9	229.8	229.9	230.3	0- 10	22.16	22.16	3.12,3.12
20	218.7	219.5	220.0	219.5	218.4	218.5	218.9	219.2	10- 20	63.69	85.85	12.1,12.1
30	200.3	201.4	202.4	201.4	199.7	200.1	200.8	200.9	20- 30	97.21	183.1	25.8,25.8
40	175.1	176.5	177.9	176.5	174.3	174.9	175.9	175.9	30- 40	118.4	301.4	42.5,42.5
50	143.8	145.5	147.0	145.2	143.3	143.8	144.9	145.1	40- 50	124.2	425.6	60,60
60	107.5	108.9	110.4	108.5	106.2	106.7	108.0	108.3	50- 60	113.5	539.1	75.9,75.9
70	67.25	68.30	69.38	67.73	65.65	65.94	67.22	67.79	60- 70	87.06	626.2	88.2,88.2
80	27.48	27.70	28.11	27.45	27.07	26.01	26.12	27.65	70- 80	49.42	675.6	95.2,95.2
90	4.837	3.678	1.631	3.214	3.963	3.065	2.008	4.049	80- 90	14.07	689.7	97.2,97.2
100	1.843	1.834	1.871	1.887	2.153	2.215	2.221	2.169	90-100	2.385	692.1	97.5,97.5
110	2.364	2.341	2.385	2.404	2.625	2.671	2.666	2.599	100-110	2.390	694.5	97.8,97.8
120	2.924	2.865	2.907	2.962	3.123	3.175	3.138	3.082	110-120	2.739	697.2	98.2,98.2
130	3.492	3.397	3.438	3.520	3.614	3.672	3.613	3.556	120-130	2.937	700.1	98.6,98.6
140	4.001	3.920	3.966	4.043	4.066	4.142	4.083	4.017	130-140	2.926	703.1	99,99
150	4.483	4.407	4.481	4.529	4.510	4.595	4.566	4.472	140-150	2.675	705.7	99.4,99.4
160	4.939	4.880	4.962	4.983	4.947	4.996	5.008	4.911	150-160	2.183	707.9	99.7,99.7
170	5.319	5.283	5.357	5.348	5.278	5.316	5.358	5.278	160-170	1.452	709.4	99.9,99.9
180	5.448	5.457	5.520	5.481	5.448	5.456	5.521	5.482	170-180	0.5141	709.9	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:2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	TYPE:LED	
MFR.: Tronix Lighting		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	48944	42882
80	52743	53952
75	60193	62161
70	65545	67619
65	69221	71195
60	71657	73600
55	73431	75170
50	74585	76254
45	75549	76948

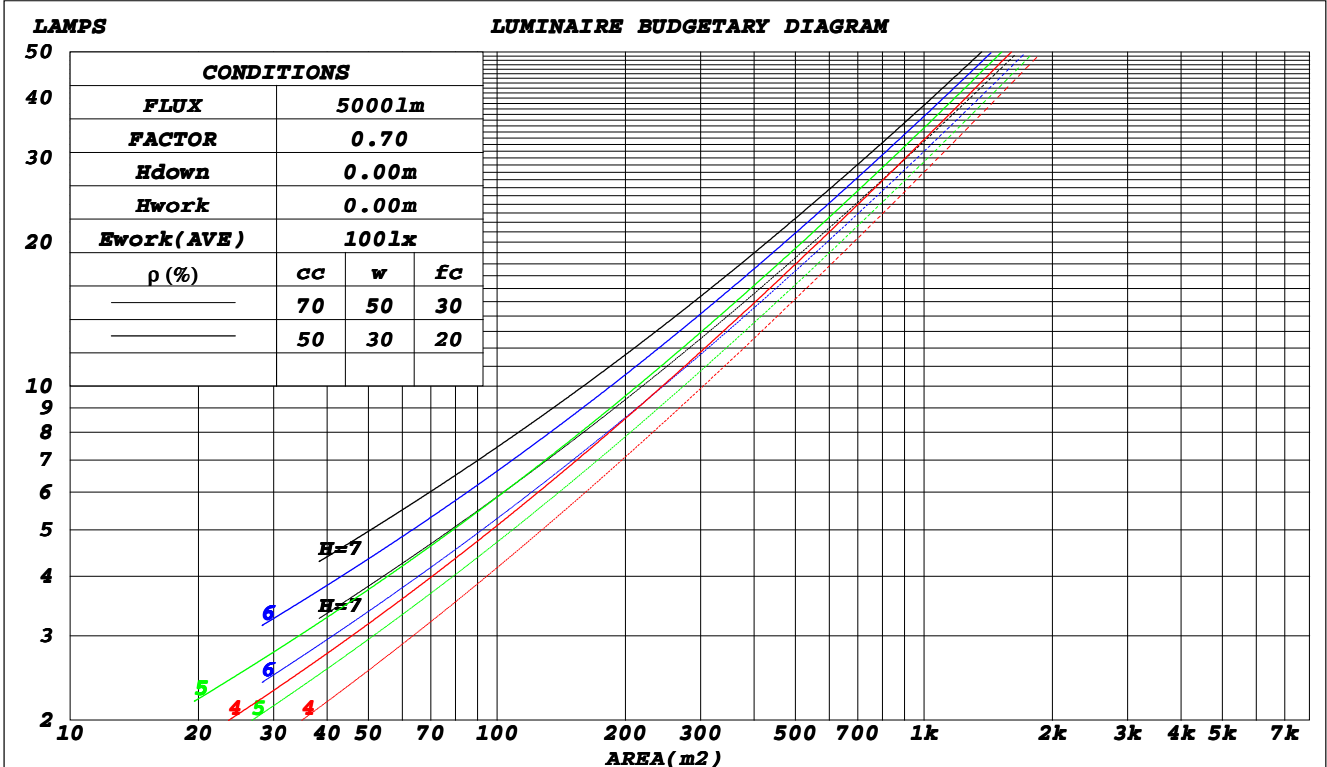
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	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	.99	.95	1.01	.97	.93	.96	.93	.90	.91	.89	.86	.87	.85	.83	.81
2.0	.90	.83	.77	.87	.81	.76	.83	.78	.74	.80	.75	.71	.76	.73	.69	.67
3.0	.79	.70	.64	.77	.69	.63	.73	.67	.61	.70	.65	.60	.67	.63	.59	.56
4.0	.69	.61	.54	.68	.60	.53	.65	.58	.52	.62	.56	.51	.60	.55	.50	.48
5.0	.62	.53	.46	.61	.52	.46	.58	.51	.45	.56	.49	.44	.54	.48	.44	.41
6.0	.56	.47	.40	.55	.46	.40	.52	.45	.39	.50	.44	.39	.49	.43	.38	.36
7.0	.50	.42	.35	.49	.41	.35	.48	.40	.35	.46	.39	.34	.44	.38	.34	.32
8.0	.46	.37	.31	.45	.37	.31	.44	.36	.31	.42	.35	.31	.41	.35	.30	.28
9.0	.42	.34	.28	.41	.34	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.25
10.0	.39	.31	.26	.38	.31	.25	.37	.30	.25	.36	.29	.25	.35	.29	.25	.23



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	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	.312	.177	.056	.304	.173	.055	.289	.166	.053	.276	.159	.051	.263	.152	.049	
2.0	.293	.161	.049	.286	.158	.049	.273	.152	.047	.261	.146	.046	.249	.141	.044	
3.0	.271	.144	.043	.265	.142	.043	.253	.137	.042	.242	.133	.041	.232	.128	.040	
4.0	.250	.130	.038	.244	.128	.038	.234	.124	.037	.224	.120	.036	.215	.117	.036	
5.0	.231	.118	.034	.226	.116	.034	.217	.113	.033	.208	.110	.033	.200	.107	.032	
6.0	.214	.107	.031	.210	.106	.030	.201	.103	.030	.193	.100	.030	.186	.098	.029	
7.0	.199	.098	.028	.195	.097	.028	.188	.095	.027	.180	.093	.027	.174	.090	.027	
8.0	.186	.091	.026	.182	.090	.025	.175	.088	.025	.169	.086	.025	.163	.084	.024	
9.0	.174	.084	.024	.171	.083	.023	.165	.081	.023	.159	.080	.023	.153	.078	.023	
10.0	.164	.078	.022	.161	.078	.022	.155	.076	.021	.150	.074	.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	.181	.181	.181	.124	.124	.124	.071	.071	.071	.023	.023	.023	
2.0	.194	.154	.120	.167	.132	.104	.114	.092	.072	.066	.053	.042	.021	.017	.014	
3.0	.187	.136	.096	.160	.118	.083	.110	.082	.059	.063	.048	.035	.020	.016	.011	
4.0	.179	.123	.080	.154	.106	.070	.106	.074	.049	.061	.043	.029	.020	.014	.010	
5.0	.172	.113	.069	.148	.098	.060	.102	.068	.043	.059	.040	.025	.019	.013	.008	
6.0	.165	.105	.061	.142	.091	.054	.098	.063	.038	.057	.037	.023	.018	.012	.007	
7.0	.158	.098	.056	.136	.085	.048	.094	.059	.034	.055	.035	.020	.018	.011	.007	
8.0	.151	.092	.051	.130	.080	.045	.090	.056	.032	.052	.033	.019	.017	.011	.006	
9.0	.145	.087	.048	.125	.076	.042	.087	.053	.030	.051	.031	.018	.016	.010	.006	
10.0	.140	.083	.045	.120	.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:2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	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	27.7	29.2	28.0	29.5	29.7	27.8	29.3	28.1	29.5	29.8
3H	29.3	30.6	29.6	30.9	31.2	29.4	30.7	29.7	31.0	31.3
4H	29.8	31.2	30.2	31.5	31.8	30.0	31.3	30.3	31.6	31.9
6H	30.3	31.5	30.6	31.8	32.1	30.4	31.6	30.7	31.9	32.3
8H	30.4	31.6	30.8	31.9	32.3	30.5	31.7	30.9	32.0	32.4
12H	30.5	31.6	30.9	31.9	32.3	30.5	31.7	30.9	32.0	32.4
4H 2H	28.3	29.6	28.7	30.0	30.3	28.4	29.7	28.8	30.0	30.3
3H	30.1	31.2	30.4	31.5	31.9	30.1	31.3	30.5	31.6	32.0
4H	30.8	31.8	31.2	32.2	32.6	30.9	31.9	31.3	32.3	32.7
6H	31.3	32.2	31.7	32.6	33.1	31.4	32.3	31.8	32.7	33.1
8H	31.5	32.3	31.9	32.8	33.2	31.5	32.4	32.0	32.8	33.3
12H	31.6	32.4	32.1	32.8	33.3	31.6	32.4	32.1	32.9	33.3
8H 4H	31.0	31.9	31.5	32.3	32.8	31.1	32.0	31.6	32.4	32.8
6H	31.7	32.4	32.2	32.9	33.4	31.8	32.5	32.2	32.9	33.4
8H	32.0	32.6	32.5	33.1	33.6	32.0	32.6	32.5	33.1	33.6
12H	32.2	32.7	32.7	33.2	33.7	32.2	32.7	32.7	33.2	33.7
12H 4H	31.0	31.8	31.5	32.3	32.7	31.1	31.9	31.6	32.3	32.8
6H	31.8	32.4	32.3	32.9	33.4	31.8	32.4	32.3	32.9	33.4
8H	32.0	32.6	32.6	33.1	33.6	32.1	32.6	32.6	33.1	33.7
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	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 709.9 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -1.2)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	TYPE:LED	
MFR.: Tronix Lighting		

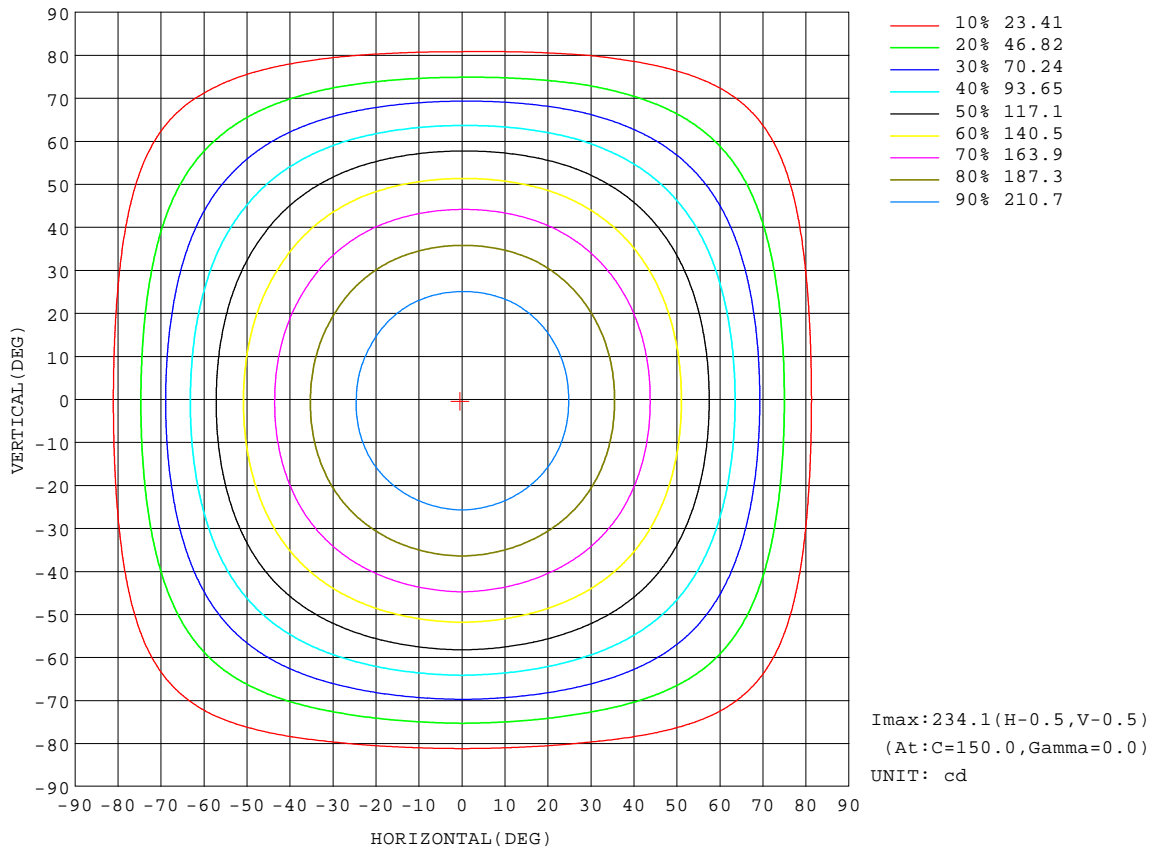
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	56	44	37	55	44	37	54	44	37	31
0.80	66	54	47	65	54	47	63	53	46	39
1.00	75	63	56	73	63	56	71	64	55	47
1.25	82	71	64	80	70	63	77	69	62	55
1.50	87	77	70	85	76	69	82	74	68	60
2.00	94	85	78	92	84	78	88	81	76	67
2.50	98	90	84	95	88	83	91	85	80	71
3.00	101	94	88	99	92	87	94	89	85	75
4.00	105	99	95	103	97	93	98	94	90	80
5.00	108	103	99	105	101	97	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:2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	TYPE:LED	
MFR.: Tronix Lighting		



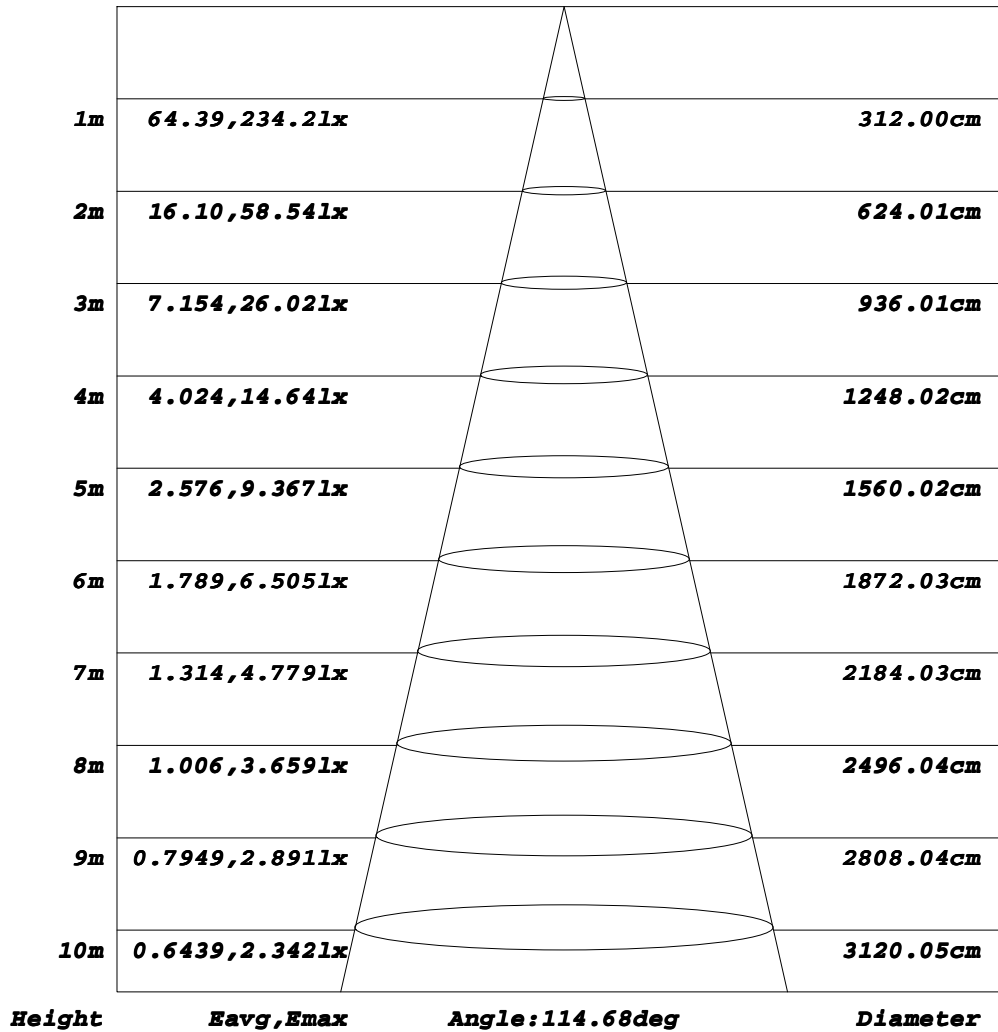
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	TYPE:LED	
MFR.: Tronix Lighting		

Flux out:518.1 lm



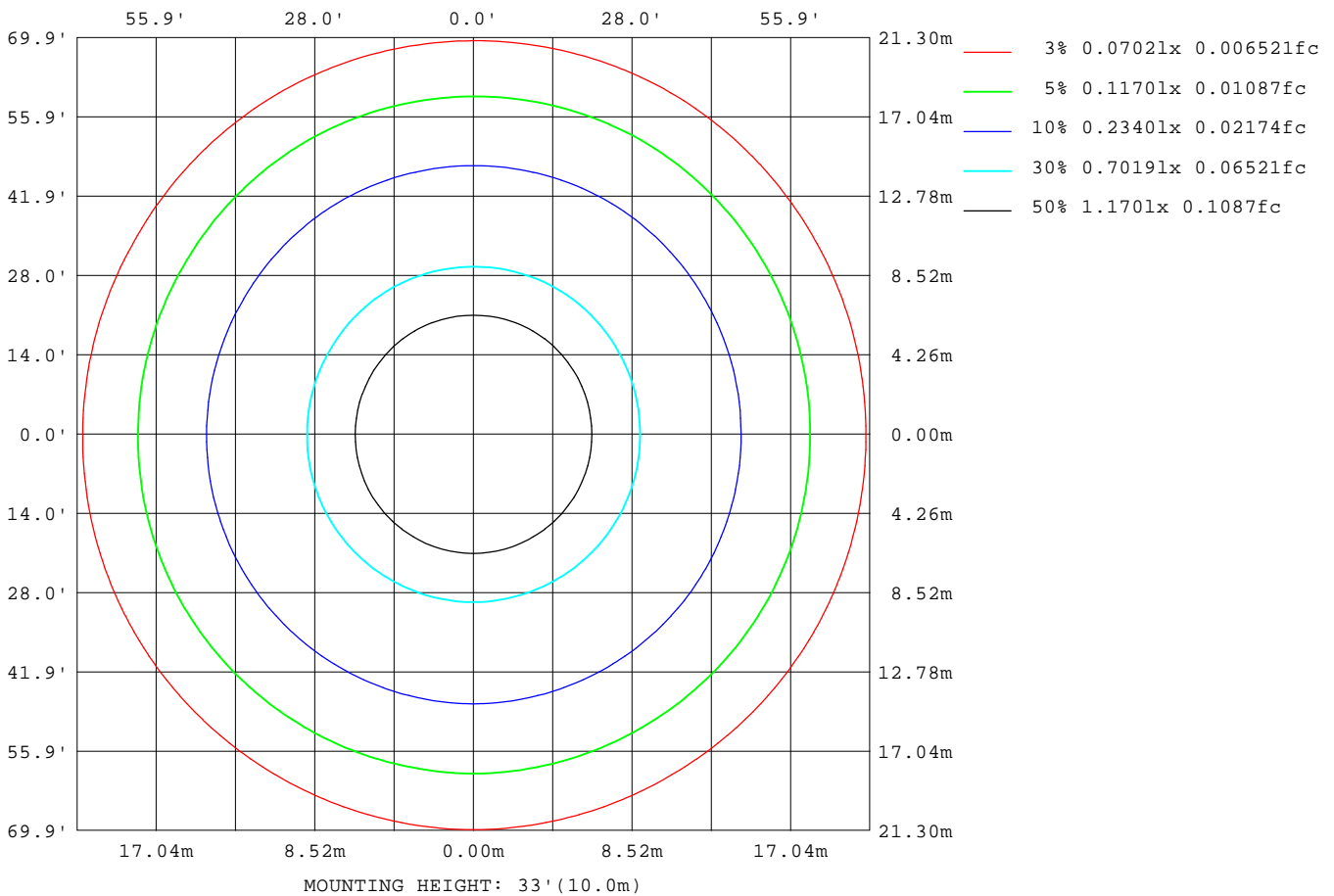
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-31

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

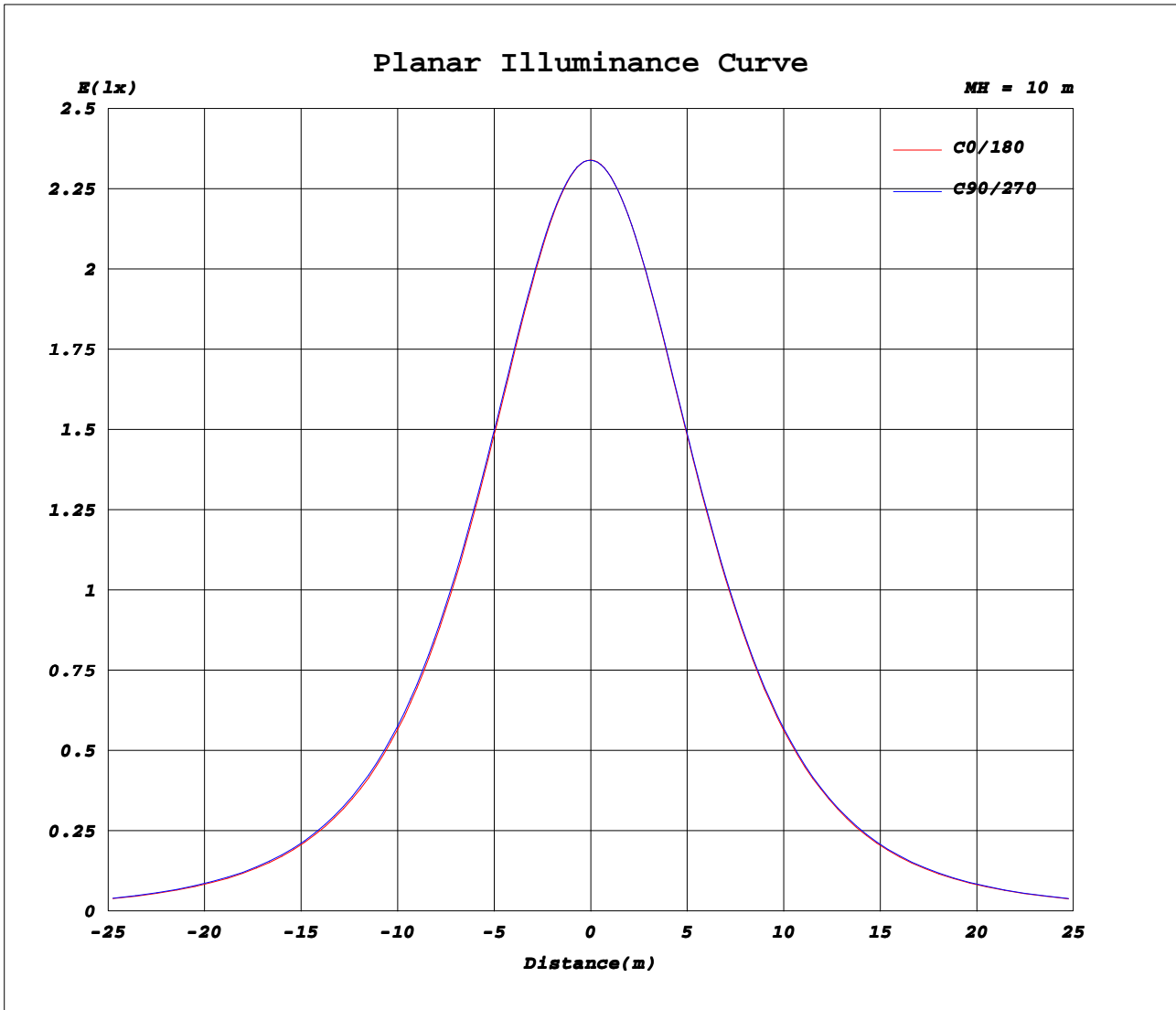
Test:U:24.000V I:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	TYPE:LED	
MFR.: Tronix Lighting		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-31

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: 2019-03-31

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:0.3630A P:8.7000W PF:1.0000 Freq:0Hz Lamp Flux:709.881x1 lm		
NAME: 127-059_060_119_120	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	234	234	234	234	234	234	234	234	234	234	234	234							
5	233	233	233	233	233	233	233	233	233	233	233	233							
10	230	230	230	231	231	230	230	230	230	230	230	230							
15	225	226	226	226	226	226	225	225	225	225	226	226							
20	219	219	220	220	220	219	218	218	219	219	219	219							
25	210	211	212	212	212	211	210	210	211	211	211	211							
30	200	201	202	202	202	201	200	200	201	201	201	201							
35	189	190	190	191	190	189	188	188	189	189	190	189							
40	175	176	177	178	177	176	174	174	176	176	176	175							
45	160	161	162	163	162	161	159	159	161	161	162	161							
50	144	145	146	147	146	145	143	143	145	145	146	144							
55	126	128	128	129	128	127	125	125	127	127	128	127							
60	107	109	109	110	109	108	106	106	108	108	109	108							
65	87.8	88.7	89.2	90.3	89.0	88.0	86.3	85.8	87.6	88.1	89.0	88.0							
70	67.3	68.2	68.3	69.4	68.1	67.3	65.7	65.2	66.7	67.2	68.2	67.4							
75	46.7	47.7	47.2	48.3	47.0	46.9	45.6	44.5	45.9	46.1	47.5	46.8							
80	27.5	28.3	27.1	28.1	27.0	27.9	27.1	25.6	26.4	26.1	27.8	27.5							
85	12.8	12.6	11.3	11.2	11.4	12.5	12.5	11.1	10.7	9.90	11.8	12.5							
90	4.84	4.36	2.99	1.63	2.78	3.65	3.96	3.32	2.81	2.01	3.44	4.66							
95	2.27	1.99	1.67	1.62	1.67	1.69	2.00	2.04	2.05	2.02	2.07	2.43							
100	1.84	1.82	1.84	1.87	1.89	1.89	2.15	2.21	2.22	2.22	2.19	2.15							
105	2.10	2.08	2.09	2.13	2.14	2.14	2.38	2.43	2.44	2.44	2.39	2.36							
110	2.36	2.34	2.34	2.39	2.40	2.40	2.62	2.67	2.67	2.67	2.61	2.58							
115	2.64	2.60	2.60	2.65	2.68	2.68	2.87	2.92	2.92	2.90	2.84	2.83							
120	2.92	2.87	2.86	2.91	2.96	2.97	3.12	3.18	3.17	3.14	3.08	3.08							
125	3.21	3.14	3.12	3.17	3.23	3.25	3.37	3.43	3.42	3.37	3.32	3.32							
130	3.49	3.41	3.38	3.44	3.51	3.53	3.61	3.68	3.66	3.61	3.55	3.56							
135	3.75	3.68	3.65	3.71	3.77	3.79	3.84	3.92	3.89	3.85	3.77	3.80							
140	4.00	3.94	3.90	3.97	4.03	4.05	4.07	4.15	4.13	4.08	4.01	4.03							
145	4.24	4.17	4.15	4.22	4.28	4.29	4.29	4.37	4.37	4.33	4.24	4.25							
150	4.48	4.41	4.40	4.48	4.53	4.53	4.51	4.59	4.60	4.57	4.48	4.47							
155	4.71	4.64	4.65	4.73	4.76	4.76	4.74	4.79	4.81	4.80	4.71	4.68							
160	4.94	4.87	4.89	4.96	4.99	4.97	4.95	4.98	5.01	5.01	4.93	4.89							
165	5.15	5.08	5.11	5.18	5.19	5.17	5.12	5.15	5.19	5.20	5.13	5.08							
170	5.32	5.26	5.30	5.36	5.36	5.33	5.28	5.29	5.34	5.36	5.31	5.24							
175	5.43	5.39	5.44	5.48	5.48	5.44	5.36	5.36	5.43	5.45	5.42	5.34							
180	5.45	5.43	5.49	5.52	5.51	5.45	5.45	5.43	5.49	5.52	5.51	5.45							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2019-03-31

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: