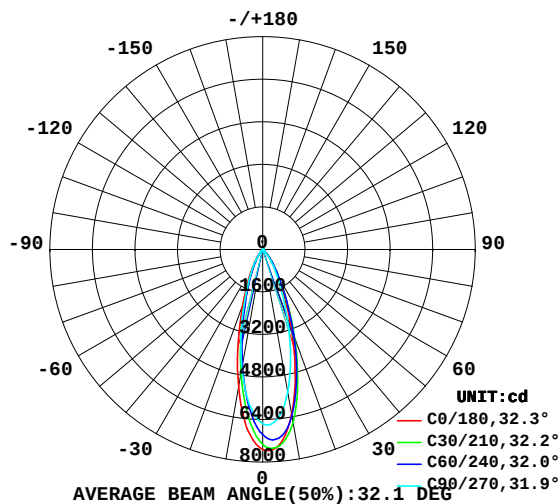


LUMINAIRE PHOTOMETRIC TEST REPORT

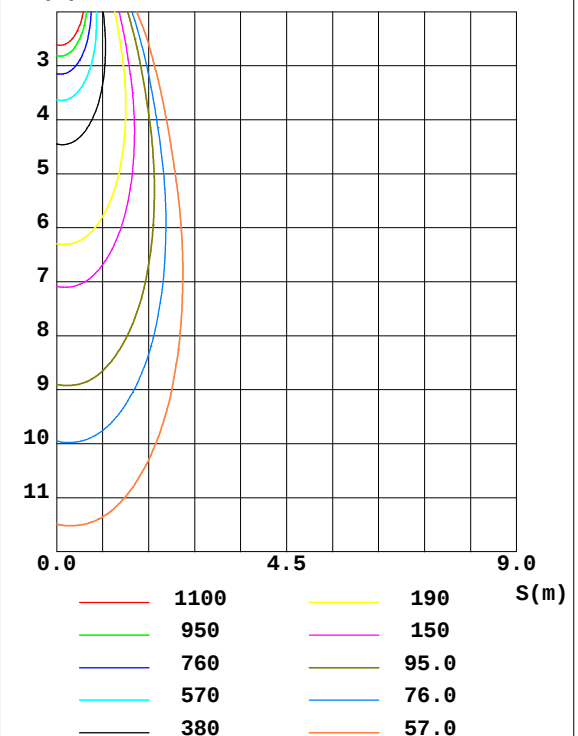
Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE:LED	
MFR.: shenzhen powerstar technology co.,ltd		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 97.33 lm/W			
MODEL	CRI80-4000K-30W	Imax(cd)	7568	S/MH(C0/180)	0.59
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.58
RATED VOLTAGE(V)	222	TOTAL FLUX(lm)	2842.2	η UP, DN(C0-180)	0.6, 52.8
NOMINAL FLUX(lm)	2842.16	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.0, 45.6
LAMPS INSIDE	1	η up(%)	1.7	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	222.1	η down(%)	98.3	CIBSE SHR MAX	0.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2015-12-07

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.6625]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	6391	6472	5444	4359	5244	4560	4532	5798	0- 10	581.7	581.7	20.5,20.5
20	3163	3463	2689	1784	2163	1804	1921	3026	10- 20	1055	1637	57.6,57.6
30	1112	1266	1005	645.7	753.6	605.3	675.8	1114	20- 30	711.6	2349	82.6,82.6
40	355.4	410.3	292.1	140.1	173.8	128.7	163.2	357.9	30- 40	324.1	2673	94,94
50	58.67	76.09	42.74	12.90	17.37	12.18	17.38	63.56	40- 50	92.44	2765	97.3,97.3
60	6.991	7.613	5.826	4.738	5.873	5.723	5.771	7.206	50- 60	13.41	2779	97.8,97.8
70	4.996	5.002	4.388	3.804	5.786	5.735	5.651	5.946	60- 70	5.479	2784	98,98
80	3.990	4.060	3.600	3.195	5.916	5.833	5.735	5.873	70- 80	5.231	2789	98.1,98.1
90	2.852	3.008	2.661	2.041	5.840	5.804	5.529	5.523	80- 90	4.898	2794	98.3,98.3
100	2.999	2.978	3.197	3.633	6.389	6.373	6.020	5.793	90-100	4.806	2799	98.5,98.5
110	3.905	3.873	4.386	4.937	7.547	7.633	7.072	6.539	100-110	5.451	2805	98.7,98.7
120	4.950	4.911	5.578	6.265	9.934	10.14	9.251	8.146	110-120	6.472	2811	98.9,98.9
130	6.029	6.195	7.064	7.655	12.94	13.03	12.22	10.97	120-130	7.535	2819	99.2,99.2
140	7.304	7.738	8.915	9.182	14.10	13.90	13.90	13.55	130-140	8.021	2827	99.5,99.5
150	8.216	8.792	9.926	9.786	12.42	12.17	13.02	13.77	140-150	7.033	2834	99.7,99.7
160	8.657	9.198	10.07	9.651	9.985	9.857	11.05	11.98	150-160	4.923	2839	99.9,99.9
170	8.563	8.953	9.535	8.929	8.471	8.372	9.454	9.988	160-170	2.725	2841	100,100
180	8.332	8.454	9.001	9.013	8.352	8.441	9.075	8.961	170-180	0.8437	2842	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

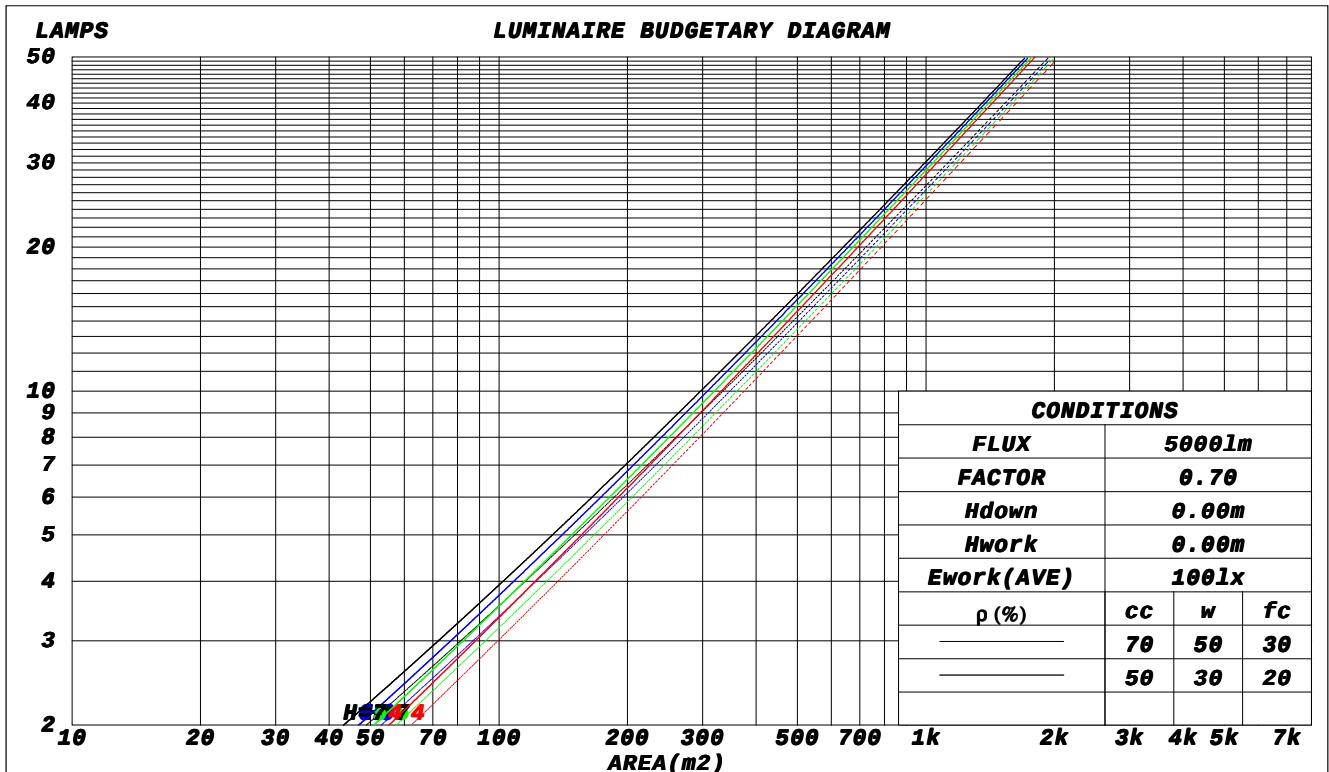
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2015-12-07

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.6625]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE:LED	
MFR.: shenzhen powerstar technology co.,ltd		

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	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	.98
1.0	1.11	1.09	1.07	1.09	1.07	1.05	1.05	1.03	1.02	1.01	.99	.98	.97	.96	.95	.93
2.0	1.05	1.01	.98	1.03	.99	.97	.99	.97	.94	.96	.94	.92	.93	.92	.90	.88
3.0	.99	.94	.91	.97	.93	.90	.94	.91	.88	.92	.89	.87	.89	.87	.85	.84
4.0	.93	.89	.85	.92	.88	.84	.90	.86	.83	.88	.85	.82	.86	.83	.81	.80
5.0	.89	.84	.80	.88	.83	.80	.86	.82	.79	.84	.81	.78	.82	.79	.77	.76
6.0	.84	.79	.76	.84	.79	.75	.82	.78	.75	.81	.77	.74	.79	.76	.73	.72
7.0	.81	.75	.72	.80	.75	.72	.79	.74	.71	.77	.73	.71	.76	.73	.70	.69
8.0	.77	.72	.68	.76	.72	.68	.75	.71	.68	.74	.70	.67	.73	.70	.67	.66
9.0	.74	.69	.65	.73	.68	.65	.72	.68	.65	.71	.67	.65	.70	.67	.64	.63
10.0	.71	.66	.62	.70	.66	.62	.69	.65	.62	.69	.65	.62	.68	.64	.62	.61



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2015-12-07

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.6625]
 Remarks:

WEC AND CCEC

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE:LED	
MFR.: shenzhen powerstar technology co.,ltd		

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	.162	.092	.029	.155	.088	.028	.141	.081	.026	.129	.074	.024	.117	.068	.022		
2.0	.152	.083	.026	.146	.080	.025	.135	.075	.023	.124	.070	.022	.115	.065	.020		
3.0	.143	.076	.023	.138	.074	.022	.128	.070	.021	.120	.065	.020	.111	.062	.019		
4.0	.135	.070	.021	.131	.069	.020	.123	.065	.019	.115	.062	.019	.108	.059	.018		
5.0	.128	.065	.019	.125	.064	.019	.117	.061	.018	.111	.058	.017	.104	.056	.017		
6.0	.122	.061	.018	.119	.060	.017	.112	.058	.017	.106	.055	.016	.101	.053	.016		
7.0	.116	.058	.016	.113	.057	.016	.108	.055	.016	.103	.053	.015	.098	.051	.015		
8.0	.111	.054	.015	.109	.053	.015	.104	.052	.015	.099	.050	.014	.094	.049	.014		
9.0	.107	.052	.014	.104	.051	.014	.100	.049	.014	.095	.048	.014	.091	.046	.013		
10.0	.102	.049	.014	.100	.048	.013	.096	.047	.013	.092	.046	.013	.089	.045	.013		

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	.203	.203	.203	.174	.174	.174	.119	.119	.119	.068	.068	.068	.022	.022	.022	
1.0	.183	.170	.159	.157	.146	.137	.107	.101	.095	.062	.058	.055	.020	.019	.018	
2.0	.167	.146	.128	.143	.125	.111	.098	.087	.077	.056	.050	.045	.018	.016	.015	
3.0	.153	.127	.105	.131	.109	.091	.090	.076	.064	.052	.044	.038	.017	.014	.012	
4.0	.142	.112	.088	.122	.096	.077	.084	.067	.054	.048	.039	.032	.016	.013	.011	
5.0	.133	.100	.076	.114	.086	.066	.078	.060	.046	.045	.035	.028	.015	.012	.009	
6.0	.124	.090	.066	.107	.078	.057	.074	.055	.040	.043	.032	.024	.014	.011	.008	
7.0	.118	.082	.058	.101	.071	.050	.070	.050	.036	.041	.029	.021	.013	.010	.007	
8.0	.112	.076	.051	.096	.066	.045	.066	.046	.032	.039	.027	.019	.013	.009	.006	
9.0	.106	.071	.046	.092	.061	.041	.063	.043	.029	.037	.025	.017	.012	.008	.006	
10.0	.102	.066	.042	.088	.057	.037	.061	.040	.026	.035	.024	.016	.011	.008	.005	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2015-12-07

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.6625]
Remarks:

Uncorrected UGR Table

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm										
NAME: LED Track Light					TYPE:LED					
MFR.: shenzhen powerstar technology co.,ltd										
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	14.7	15.5	14.9	15.7	15.9	14.4	15.2	14.6	15.3	15.5
3H	14.5	15.3	14.8	15.5	15.7	14.2	14.9	14.5	15.2	15.4
4H	14.4	15.2	14.7	15.4	15.6	14.1	14.8	14.4	15.1	15.3
6H	14.4	15.0	14.7	15.3	15.6	14.1	14.7	14.4	15.0	15.2
8H	14.3	15.0	14.7	15.3	15.5	14.0	14.7	14.3	14.9	15.2
12H	14.3	14.9	14.7	15.2	15.5	14.0	14.6	14.3	14.9	15.2
4H 2H	14.4	15.1	14.7	15.4	15.6	14.1	14.8	14.4	15.1	15.3
3H	14.3	14.9	14.6	15.2	15.5	13.9	14.6	14.3	14.8	15.2
4H	14.2	14.7	14.6	15.1	15.4	13.9	14.4	14.2	14.7	15.1
6H	14.1	14.6	14.5	15.0	15.3	13.8	14.3	14.2	14.6	15.0
8H	14.1	14.5	14.5	14.9	15.3	13.8	14.2	14.2	14.6	15.0
12H	14.1	14.5	14.5	14.9	15.3	13.8	14.2	14.2	14.6	15.0
8H 4H	14.0	14.5	14.5	14.9	15.3	13.7	14.2	14.1	14.6	15.0
6H	14.0	14.4	14.4	14.8	15.2	13.7	14.0	14.1	14.5	14.9
8H	14.0	14.3	14.4	14.8	15.2	13.6	14.0	14.1	14.4	14.9
12H	14.0	14.3	14.5	14.7	15.2	13.7	13.9	14.2	14.4	14.9
12H 4H	14.0	14.4	14.4	14.8	15.2	13.7	14.1	14.1	14.5	14.9
6H	13.9	14.3	14.4	14.7	15.2	13.6	13.9	14.1	14.4	14.9
8H	13.9	14.2	14.4	14.7	15.2	13.6	13.9	14.1	14.4	14.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.6 / - 9.7					+ 2.7 / - 9.6				
1.5H	+ 4.6 / - 9.1					+ 4.5 / - 8.8				
2.0H	+ 5.9 / - 5.1					+ 5.8 / - 4.9				

CIE Pub.117 Corrected 2842 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.6)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2015-12-07

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.6625]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE:LED	
MFR.: shenzhen powerstar technology co.,ltd		

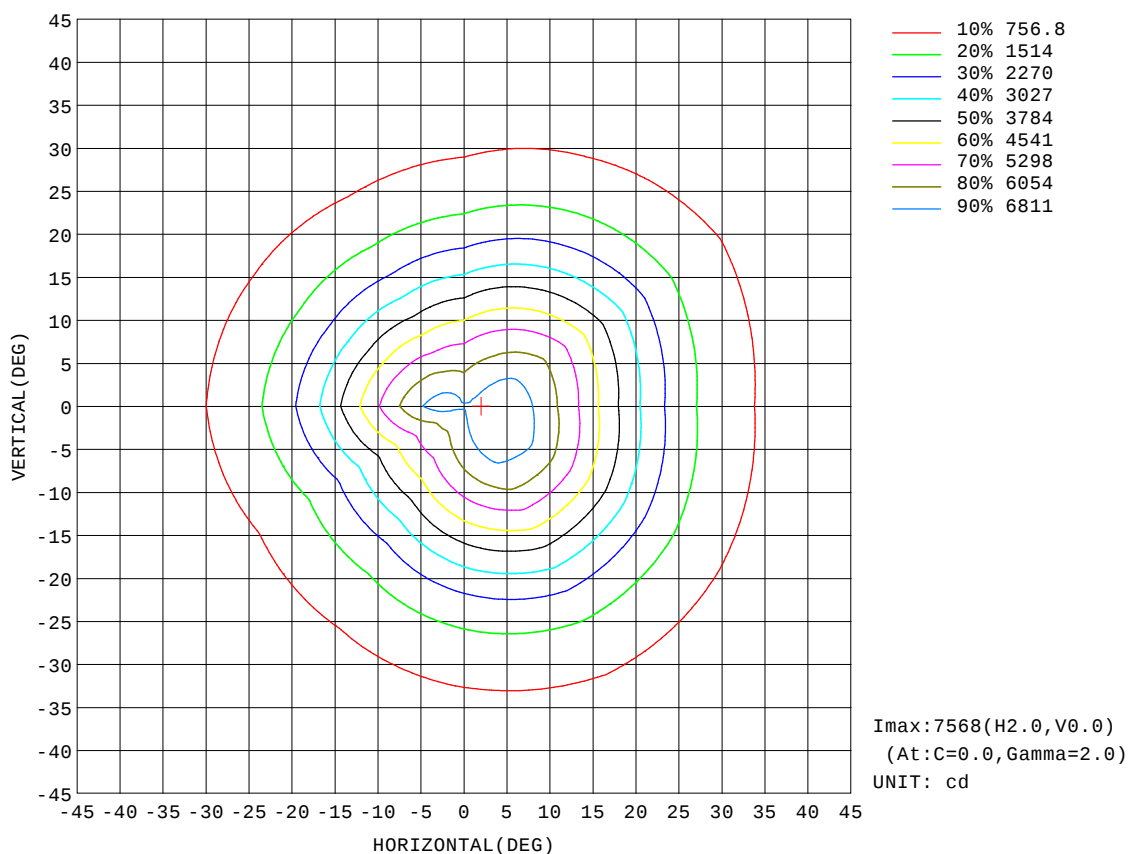
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	78	87	81	78	86	81	78	74
0.80	95	89	86	94	89	86	93	88	85	82
1.00	99	94	90	98	93	90	97	93	89	85
1.25	103	98	95	102	97	94	100	96	93	89
1.50	106	101	98	104	100	97	102	99	96	91
2.00	108	104	101	107	103	100	104	101	99	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	107	104	106	104	102	95
4.00	113	111	109	111	109	107	107	106	104	97
5.00	115	112	111	112	110	109	108	107	106	97
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:2015-12-07

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity:65.0%
Test Distance:8.000m [K=0.6625]
Remarks:

ISOCANDELA DIAGRAM

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE:LED	
MFR.: shenzhen powerstar technology co.,ltd		

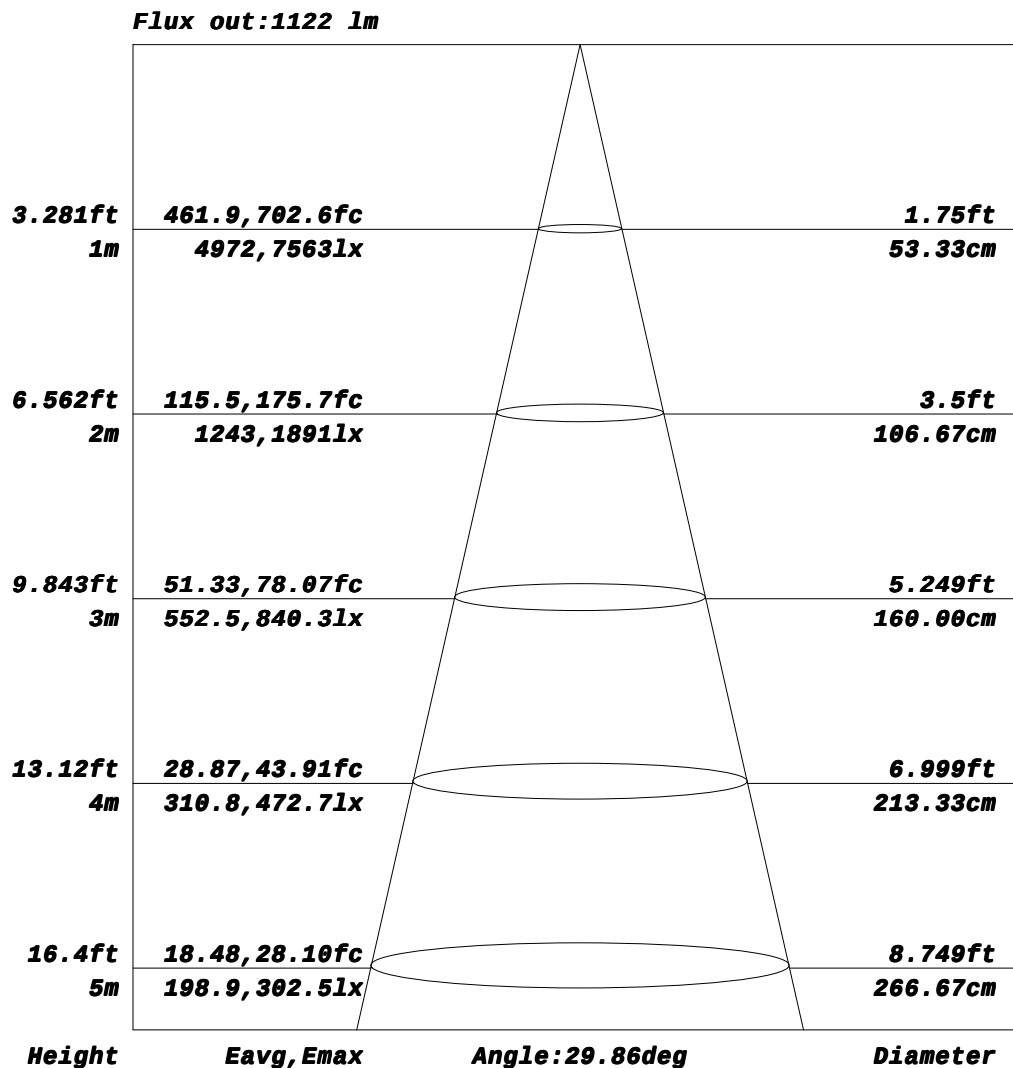


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2015-12-07

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.6625]
Remarks:

AAI Figure

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE: LED	
MFR.: shenzhen powerstar technology co.,ltd		



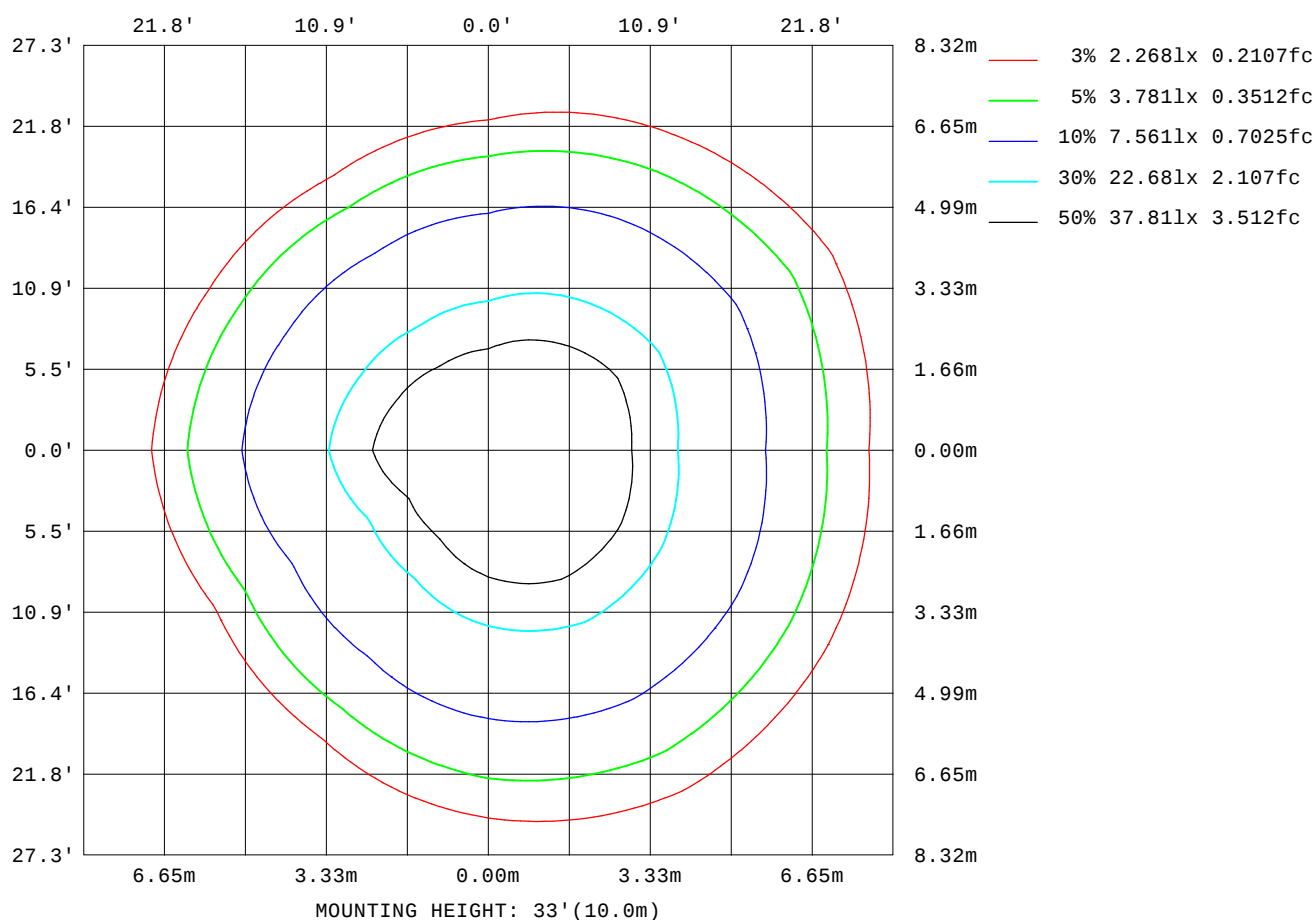
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2015-12-07

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.6625]
Remarks:

ISOLUX DIAGRAM

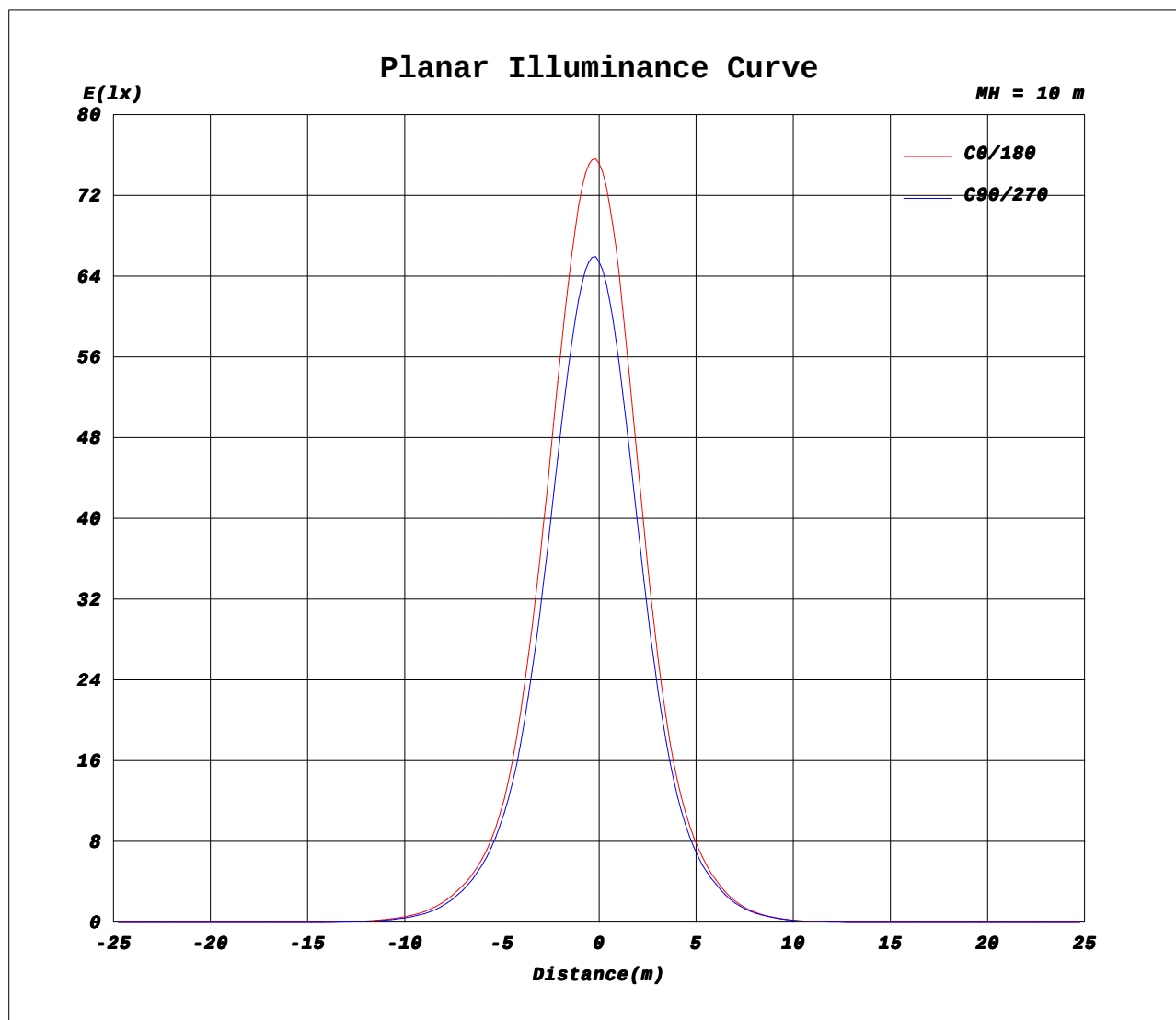
Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm		
NAME: LED Track Light	TYPE:LED	
MFR.: shenzhen powerstar technology co.,ltd		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2015-12-07

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.6625]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2015-12-07

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.6625]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:222.1V I:0.1390A P:29.20W PF:0.9470 Lamp Flux:2842.16x1 lm																	
NAME: LED Track Light									TYPE:LED								
MFR.: shenzhen powerstar technology co.,ltd																	

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330					
0	7524	7335	6957	6549	6458	6789	7524	7335	6957	6549	6458	6789					
5	7363	7411	7116	6402	5760	5733	6771	6308	5947	5837	6307	6941					
10	6301	6599	6344	5444	4484	4234	5244	4720	4401	4532	5359	6236					
15	4730	5113	4935	4054	3064	2759	3570	3125	2892	3107	4002	4901					
20	3163	3510	3416	2689	1904	1663	2163	1871	1737	1921	2653	3400					
25	1886	2156	2140	1648	1169	1006	1291	1101	1015	1145	1616	2116					
30	1112	1272	1261	1005	713	579	754	638	573	676	973	1254					
35	670	738	749	587	367	279	388	312	281	353	565	764					
40	355	407	413	292	163	118	174	134	124	163	285	430					
45	160	192	192	129	61.2	37.3	64.9	47.5	42.9	63.6	129	200					
50	58.7	76.8	75.4	42.7	15.6	10.2	17.4	12.7	11.7	17.4	45.4	81.7					
55	15.3	19.9	19.8	11.4	6.27	5.38	6.90	6.11	6.03	6.81	12.1	21.9					
60	6.99	7.81	7.41	5.83	4.94	4.53	5.87	5.74	5.71	5.77	6.36	8.06					
65	5.63	5.82	5.57	4.90	4.46	3.99	5.79	5.70	5.69	5.66	5.90	6.34					
70	5.00	5.11	4.90	4.39	4.05	3.56	5.79	5.74	5.73	5.65	5.79	6.10					
75	4.46	4.58	4.40	3.96	3.70	3.26	5.84	5.82	5.80	5.69	5.76	6.00					
80	3.99	4.13	3.99	3.60	3.40	2.99	5.92	5.86	5.81	5.74	5.78	5.97					
85	3.45	3.66	3.62	3.15	2.92	2.69	5.78	5.71	5.63	5.52	5.67	5.95					
90	2.85	3.01	3.00	2.66	2.81	2.87	5.84	5.85	5.76	5.53	5.43	5.62					
95	2.78	2.80	2.78	2.80	3.07	3.24	6.08	6.08	6.00	5.74	5.57	5.57					
100	3.00	2.96	3.00	3.20	3.50	3.76	6.39	6.42	6.33	6.02	5.80	5.78					
105	3.39	3.30	3.42	3.74	4.10	4.39	6.85	6.92	6.82	6.45	6.13	6.07					
110	3.91	3.77	3.98	4.39	4.82	5.06	7.55	7.68	7.58	7.07	6.60	6.47					
115	4.46	4.34	4.54	5.08	5.60	5.74	8.56	8.79	8.66	7.99	7.31	7.08					
120	4.95	4.85	4.97	5.58	6.24	6.29	9.93	10.2	10.1	9.25	8.32	7.97					
125	5.46	5.40	5.59	6.20	6.91	6.86	11.5	11.7	11.6	10.7	9.68	9.21					
130	6.03	6.02	6.37	7.06	7.74	7.57	12.9	13.1	13.0	12.2	11.2	10.7					
135	6.64	6.68	7.15	7.93	8.58	8.28	13.9	13.9	13.8	13.4	12.7	12.3					
140	7.30	7.43	8.04	8.92	9.44	8.92	14.1	13.9	13.9	13.9	13.7	13.4					
145	7.83	8.02	8.68	9.57	9.93	9.29	13.5	13.2	13.3	13.7	14.0	14.0					
150	8.22	8.46	9.12	9.93	10.1	9.44	12.4	12.1	12.3	13.0	13.7	13.9					
155	8.50	8.77	9.40	10.1	10.2	9.43	11.2	10.8	11.1	12.0	12.9	13.1					
160	8.66	8.93	9.47	10.1	10.0	9.26	9.99	9.68	10.0	11.0	11.9	12.1					
165	8.67	8.91	9.42	9.89	9.74	8.94	9.06	8.76	9.18	10.2	10.9	11.0					
170	8.56	8.73	9.17	9.53	9.29	8.57	8.47	8.16	8.58	9.45	10.0	9.96					
175	8.40	8.46	8.86	9.15	9.01	8.48	8.25	8.02	8.42	9.10	9.44	9.24					
180	8.33	8.27	8.64	9.00	9.19	8.84	8.35	8.26	8.62	9.07	9.12	8.80					

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2015-12-07

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.6625]
Remarks: