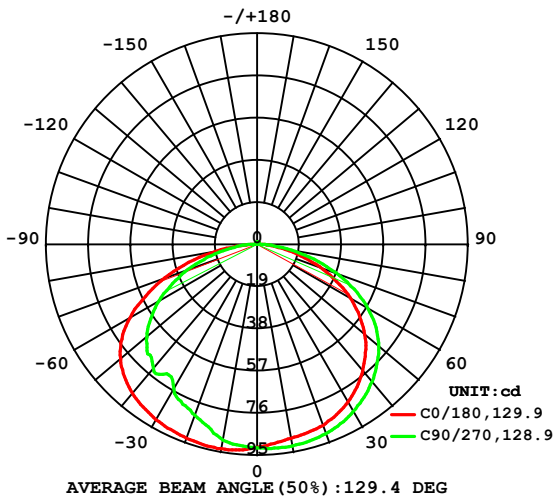
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:23.998V I:0.1989A P:4.7732W PF:1.0000 Freq:49.99Hz Lamp Flux:324.219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

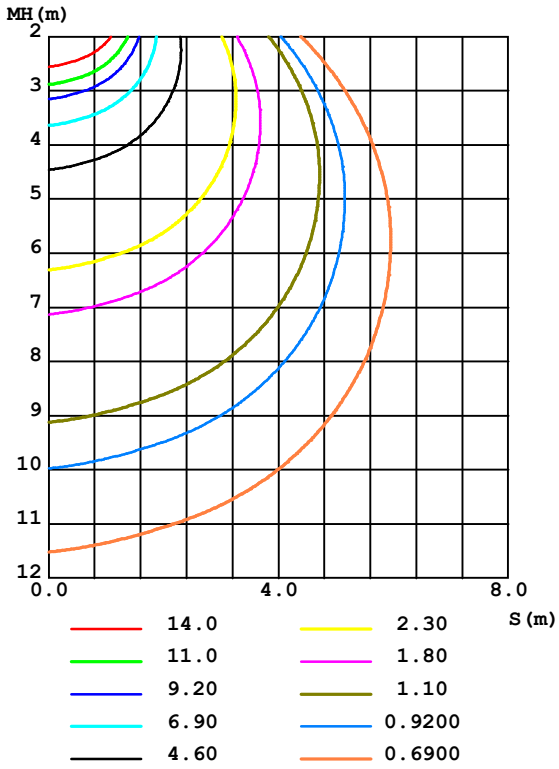
DATA OF LAMP		PHOTOMETRIC DATA Eff: 67.92 lm/W			
MODEL	TF5RGB-300	Imax(cd)	93.56	S/MH(C0/180)	1.50
NOMINAL POWER(W)	14.4	LOR(%)	100.0	S/MH(C90/270)	1.22
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	324.22	η UP,DN(C0-180)	0.7,47.9
NOMINAL FLUX(lm)	324.219	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.7,50.7
LAMPS INSIDE	1	η up(%)	1.4	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	98.6	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):129.4 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LMJ
Test Date:2021-06-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: G

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ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	88.64	92.15	93.53	89.46					0- 10	8.715	8.715	2.69,2.69
20	86.71	90.69	92.89	82.08					10- 20	25.34	34.06	10.5,10.5
30	81.96	86.87	91.09	75.42					20- 30	39.85	73.91	22.8,22.8
40	74.14	80.64	87.46	72.82					30- 40	50.90	124.8	38.5,38.5
50	63.44	71.56	80.41	64.94					40- 50	57.75	182.6	56.3,56.3
60	48.54	57.74	66.13	51.14					50- 60	56.85	239.4	73.8,73.8
70	30.10	37.68	44.13	33.18					60- 70	45.85	285.3	88,88
80	11.41	15.83	19.04	13.90					70- 80	26.99	312.2	96.3,96.3
90	0.5768	1.412	0.2798	2.016					80- 90	7.376	319.6	98.6,98.6
100	0.4108	0.4671	0.3429	0.4923					90-100	0.5780	320.2	98.8,98.8
110	0.5779	0.5979	0.4922	0.6039					100-110	0.5245	320.7	98.9,98.9
120	0.7037	0.7163	0.6416	0.7348					110-120	0.6298	321.3	99.1,99.1
130	0.8406	0.8346	0.7660	0.8471					120-130	0.6824	322.0	99.3,99.3
140	0.9465	0.9340	0.8843	0.9711					130-140	0.6807	322.7	99.5,99.5
150	1.021	0.9653	0.9531	1.071					140-150	0.6069	323.3	99.7,99.7
160	1.117	1.034	1.034	1.146					150-160	0.4820	323.8	99.9,99.9
170	1.135	1.127	1.090	1.189					160-170	0.3137	324.1	100,100
180	1.133	1.183	1.133	1.196					170-180	0.1097	324.2	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LMJ
Test Date:2021-06-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: G

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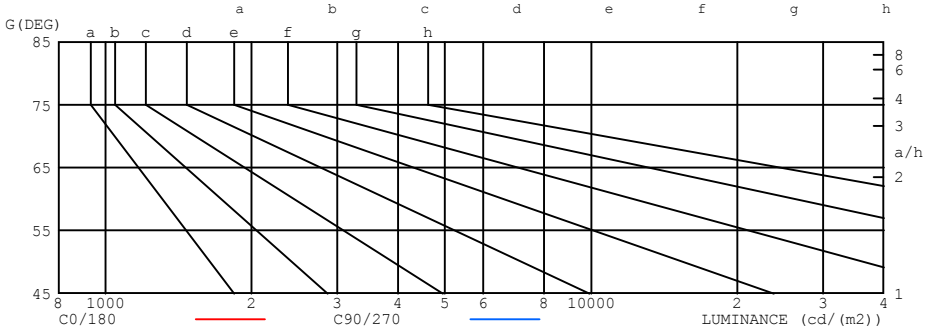
LUMINANCE LIMITATION CURVES

Test:U:23.998V I:0.1989A P:4.7732W PF:1.0000 Freq:49.99Hz Lamp Flux:324.219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	142	214
80	186	258
75	223	291
70	249	312
65	266	324
60	275	327
55	279	324
50	280	316
45	277	307

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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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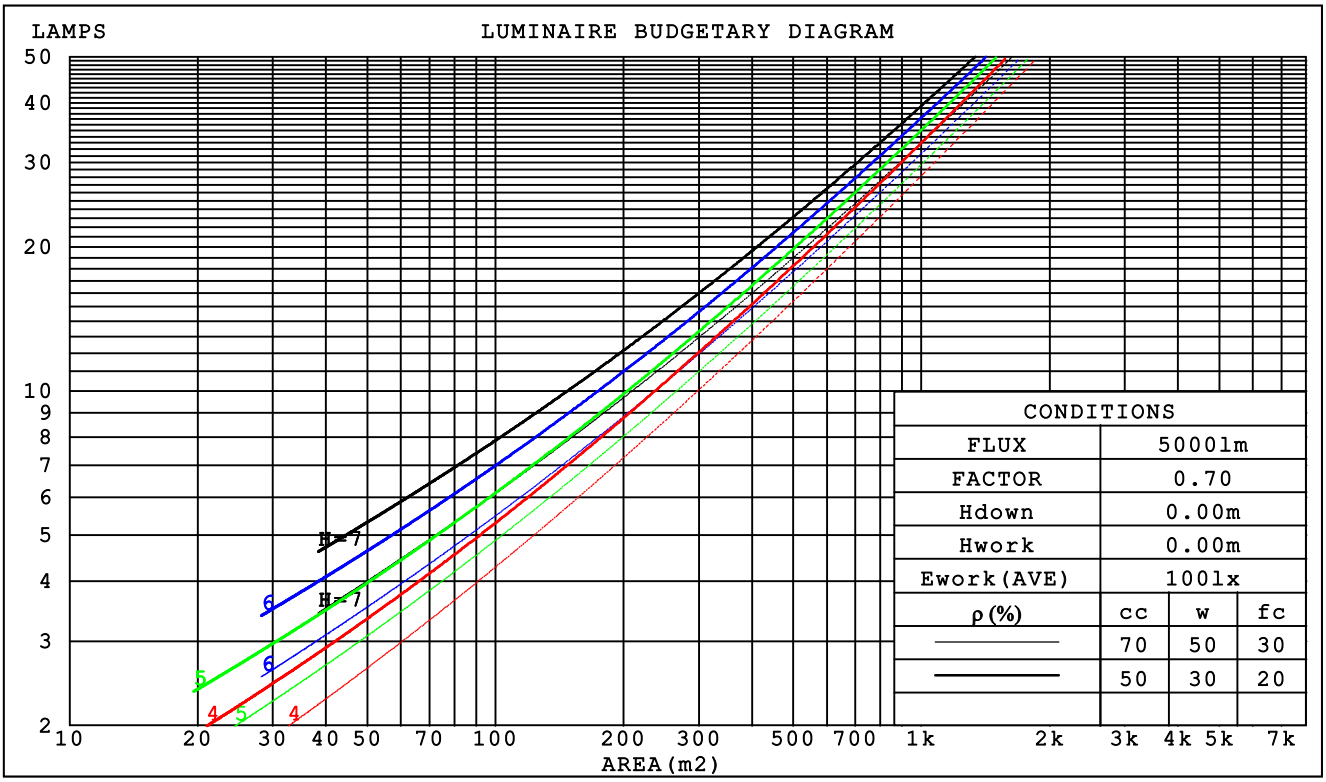
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	1.01	1.01	1.01	.99
1.0	1.03	.98	.94	1.00	.96	.92	.96	.92	.89	.91	.89	.86	.87	.85	.83	.81
2.0	.88	.81	.75	.86	.80	.74	.82	.77	.72	.79	.74	.70	.76	.72	.68	.66
3.0	.77	.68	.61	.75	.67	.61	.72	.65	.59	.69	.63	.58	.66	.61	.57	.55
4.0	.68	.58	.51	.66	.57	.51	.63	.56	.50	.61	.54	.49	.58	.53	.48	.46
5.0	.60	.50	.44	.59	.50	.43	.56	.49	.43	.54	.47	.42	.52	.46	.41	.39
6.0	.54	.44	.38	.53	.44	.37	.51	.43	.37	.49	.42	.36	.47	.41	.36	.34
7.0	.48	.39	.33	.47	.39	.33	.46	.38	.32	.44	.37	.32	.43	.36	.32	.30
8.0	.44	.35	.29	.43	.35	.29	.42	.34	.29	.40	.33	.28	.39	.33	.28	.26
9.0	.40	.32	.26	.40	.31	.26	.38	.31	.26	.37	.30	.25	.36	.30	.25	.23
10.0	.37	.29	.23	.36	.29	.23	.35	.28	.23	.34	.28	.23	.33	.27	.23	.21



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γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
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WEC AND CCEC

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NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.329	.187	.059	.322	.184	.058	.308	.177	.056	.295	.170	.055	.283	.164	.053	
2.0	.308	.169	.052	.302	.166	.051	.289	.161	.050	.277	.156	.049	.267	.151	.048	
3.0	.284	.151	.045	.278	.149	.045	.267	.144	.044	.256	.140	.043	.247	.137	.042	
4.0	.261	.135	.040	.255	.134	.039	.245	.130	.039	.236	.127	.038	.227	.124	.038	
5.0	.240	.122	.035	.235	.121	.035	.226	.118	.035	.218	.115	.034	.210	.112	.034	
6.0	.222	.111	.032	.217	.110	.032	.210	.107	.031	.202	.105	.031	.195	.103	.031	
7.0	.206	.102	.029	.202	.101	.029	.195	.098	.028	.188	.096	.028	.182	.094	.028	
8.0	.192	.094	.026	.188	.093	.026	.182	.091	.026	.176	.089	.026	.170	.087	.025	
9.0	.179	.087	.024	.176	.086	.024	.170	.084	.024	.165	.083	.024	.160	.081	.023	
10.0	.168	.081	.022	.165	.080	.022	.160	.078	.022	.155	.077	.022	.150	.076	.022	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.201	.201	.201	.172	.172	.172	.117	.117	.117	.067	.067	.067	.022	.022	.022	
1.0	.193	.167	.144	.165	.143	.124	.113	.099	.086	.065	.057	.050	.021	.018	.016	
2.0	.185	.143	.107	.159	.123	.092	.109	.085	.065	.063	.049	.038	.020	.016	.012	
3.0	.178	.125	.083	.153	.108	.072	.105	.075	.051	.061	.044	.030	.019	.014	.010	
4.0	.171	.112	.068	.147	.097	.059	.101	.068	.041	.058	.040	.025	.019	.013	.008	
5.0	.163	.102	.057	.140	.088	.049	.097	.062	.035	.056	.036	.021	.018	.012	.007	
6.0	.156	.094	.049	.134	.081	.043	.093	.057	.030	.054	.033	.018	.017	.011	.006	
7.0	.149	.087	.043	.128	.075	.038	.089	.053	.027	.052	.031	.016	.017	.010	.005	
8.0	.143	.081	.039	.123	.070	.034	.085	.049	.024	.049	.029	.014	.016	.010	.005	
9.0	.136	.076	.036	.117	.066	.031	.081	.047	.022	.047	.028	.013	.015	.009	.004	
10.0	.130	.072	.033	.112	.063	.029	.078	.044	.021	.046	.026	.012	.015	.009	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LMJ
Test Date:2021-06-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: G

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UGR(Unified Glare Rating) Table

Test:U:23.998V I:0.1989A P:4.7732W PF:1.0000 Freq:49.99Hz Lamp Flux:324.219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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	12.4	13.9	12.7	14.2	14.4	13.0	14.6	13.3	14.8	15.0
3H	13.9	15.4	14.2	15.6	15.9	14.8	16.2	15.1	16.5	16.7
4H	14.5	15.9	14.8	16.2	16.4	15.4	16.8	15.8	17.1	17.4
6H	14.8	16.1	15.2	16.4	16.8	15.9	17.2	16.3	17.5	17.8
8H	14.9	16.2	15.3	16.5	16.8	16.1	17.3	16.4	17.6	18.0
12H	15.0	16.2	15.3	16.5	16.8	16.1	17.4	16.5	17.7	18.0
4H 2H	13.1	14.5	13.5	14.8	15.1	13.6	15.0	13.9	15.3	15.5
3H	14.8	16.0	15.2	16.4	16.7	15.5	16.7	15.9	17.0	17.4
4H	15.5	16.6	15.9	17.0	17.3	16.3	17.4	16.7	17.8	18.1
6H	16.0	17.0	16.4	17.3	17.7	16.9	17.9	17.3	18.3	18.7
8H	16.1	17.0	16.5	17.4	17.8	17.1	18.0	17.6	18.4	18.8
12H	16.2	17.0	16.6	17.4	17.9	17.2	18.1	17.7	18.5	18.9
8H 4H	15.8	16.8	16.3	17.1	17.6	16.5	17.5	17.0	17.9	18.3
6H	16.4	17.2	16.9	17.6	18.1	17.3	18.0	17.7	18.5	18.9
8H	16.6	17.3	17.1	17.8	18.2	17.6	18.2	18.0	18.7	19.2
12H	16.8	17.3	17.3	17.8	18.3	17.8	18.3	18.3	18.8	19.3
12H 4H	15.8	16.7	16.3	17.1	17.5	16.5	17.4	17.0	17.8	18.2
6H	16.5	17.2	17.0	17.6	18.1	17.3	18.0	17.8	18.4	18.9
8H	16.7	17.3	17.2	17.8	18.3	17.6	18.2	18.1	18.7	19.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.5					+ 0.2 / - 0.3				

CIE Pub.117, 324.2 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -3.9)

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UTILIZATION FACTORS TABLE

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NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	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) x RCR = 5									
k = 0.60	54	42	34	53	41	34	52	41	34	27
0.80	64	52	44	63	51	44	61	50	43	36
1.00	73	61	53	71	60	53	69	62	52	44
1.25	80	69	61	78	68	61	75	66	60	52
1.50	85	75	67	83	74	67	80	72	65	57
2.00	93	83	76	91	82	76	87	80	74	65
2.50	97	88	82	95	87	81	90	84	79	70
3.00	100	93	87	98	91	86	94	88	84	74
4.00	105	99	94	102	97	92	98	93	89	80
5.00	107	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	

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ISOCANDELA DIAGRAM

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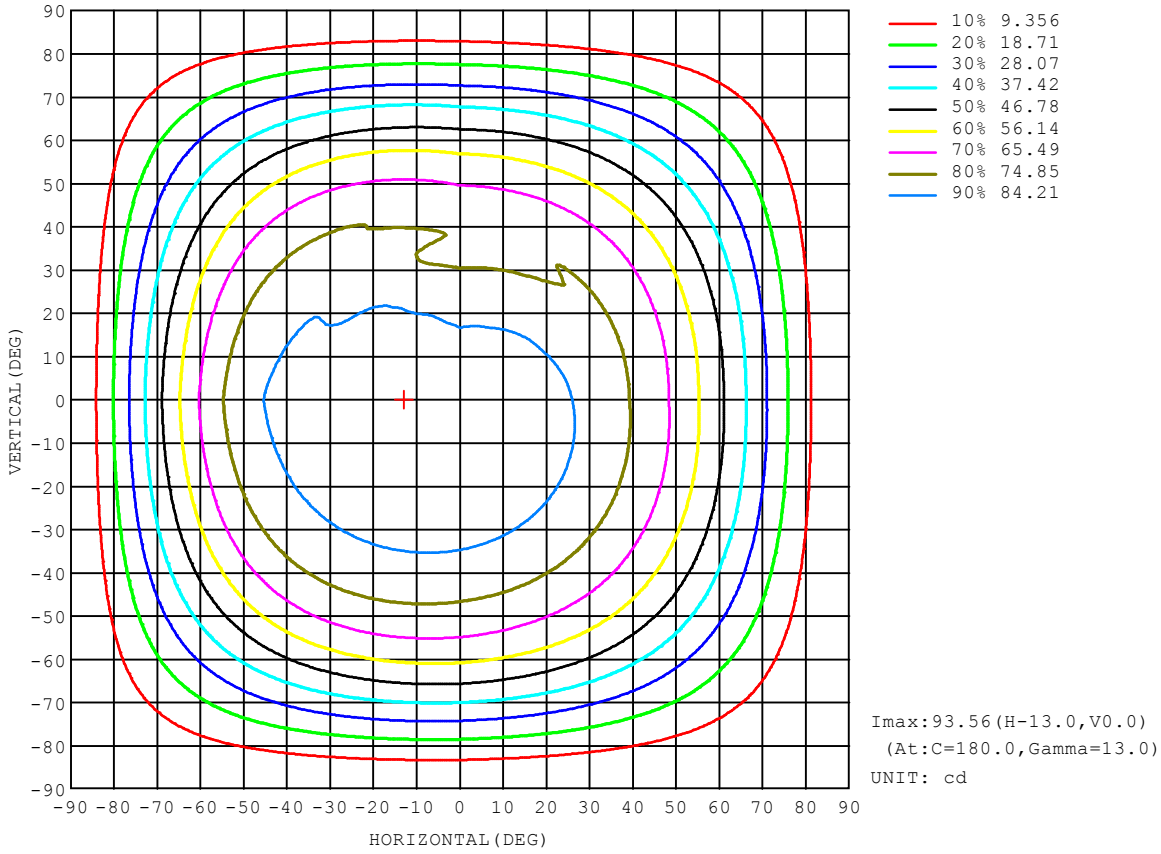

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AAI Figure

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NAME:	TYPE:	WEIGHT:
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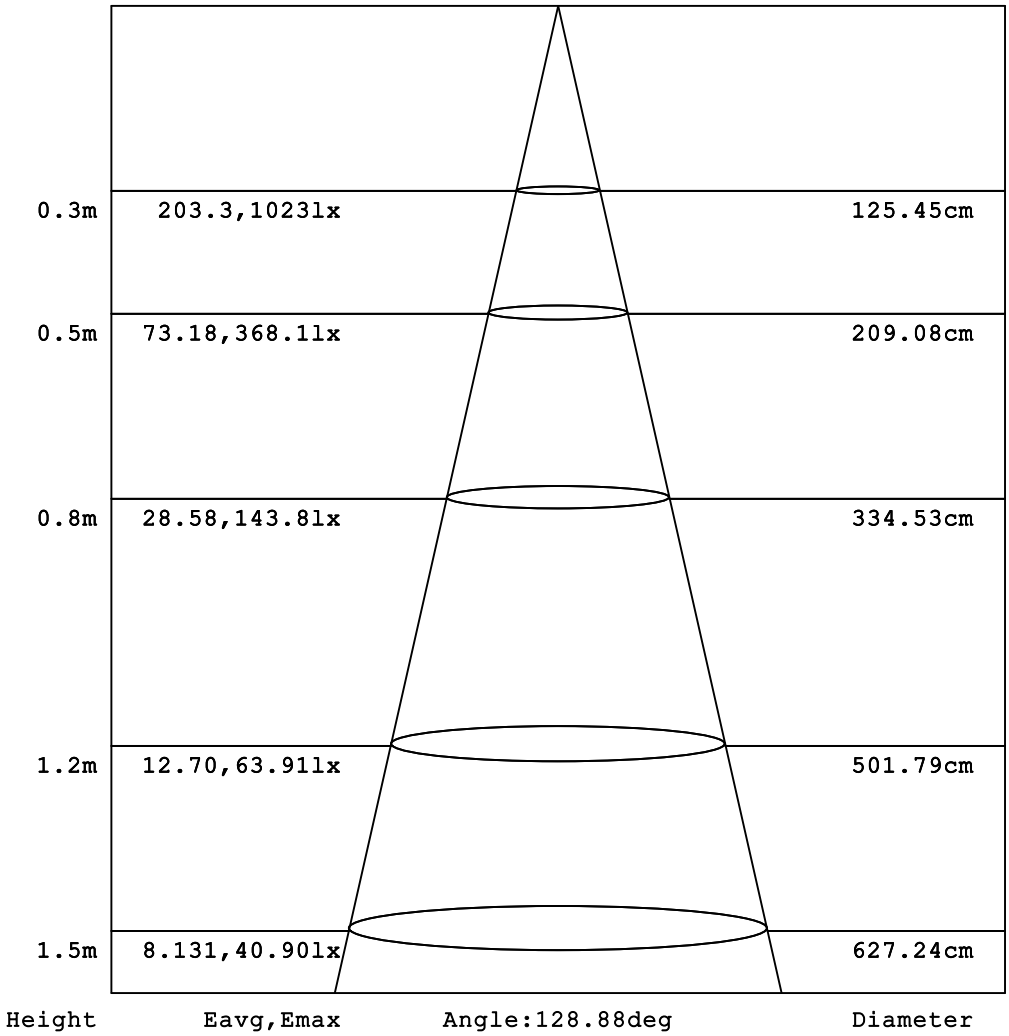
Flux out:264.3 lm



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

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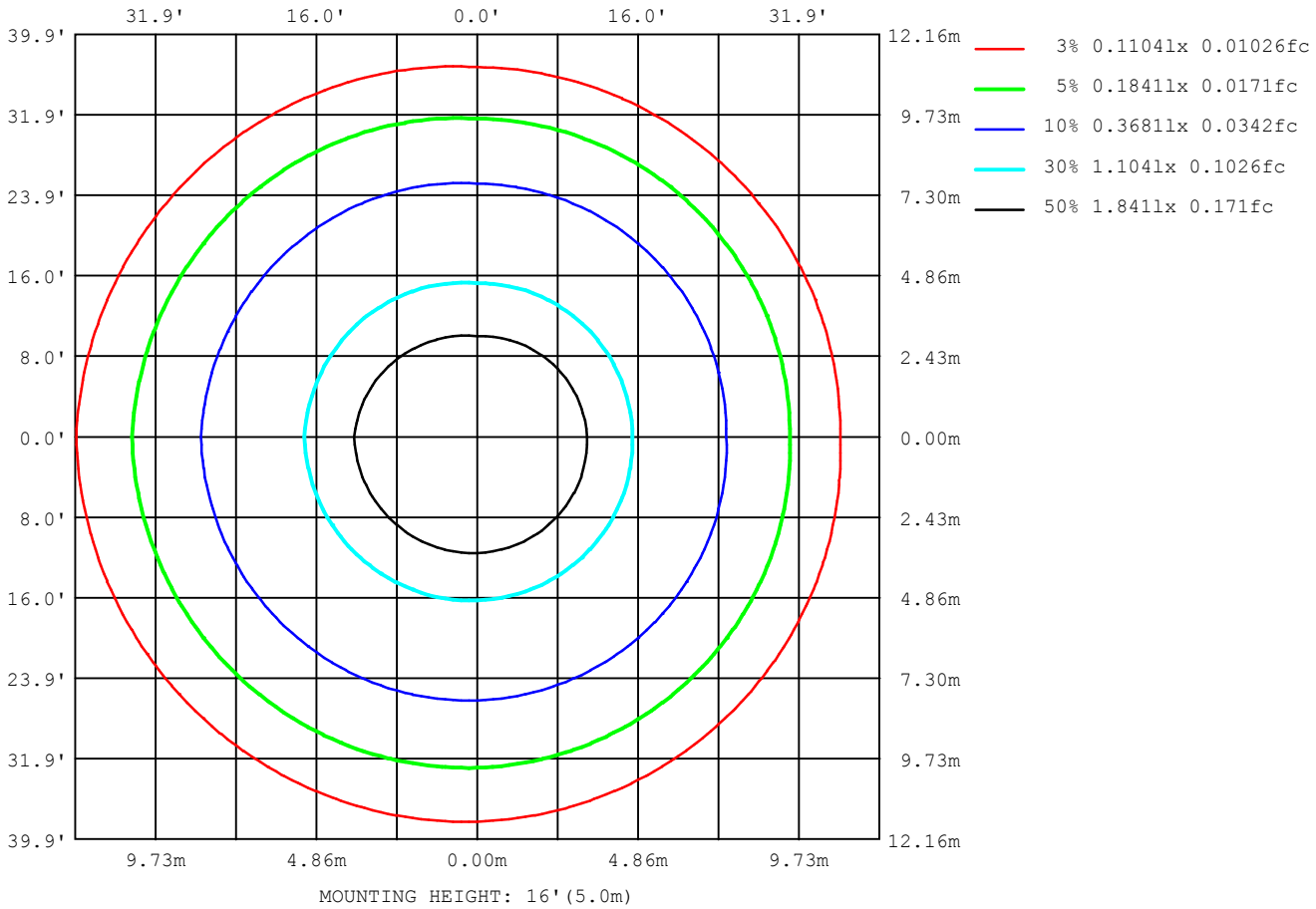
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LMJ
Test Date:2021-06-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: G

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LED Avg.L Report

Test:U:23.998V I:0.1989A P:4.7732W PF:1.0000 Freq:49.99Hz Lamp Flux:324.219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

AvgL	cd/m2
L_0~180(65)av	319
L_0~180(75)av	287
L_0~180(85)av	190
L_90~270(65)av	303
L_90~270(75)av	273
L_90~270(85)av	212
L_45(65)av	312
L_45(75)av	282
L_45(85)av	206

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LMJ
Test Date:2021-06-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: G

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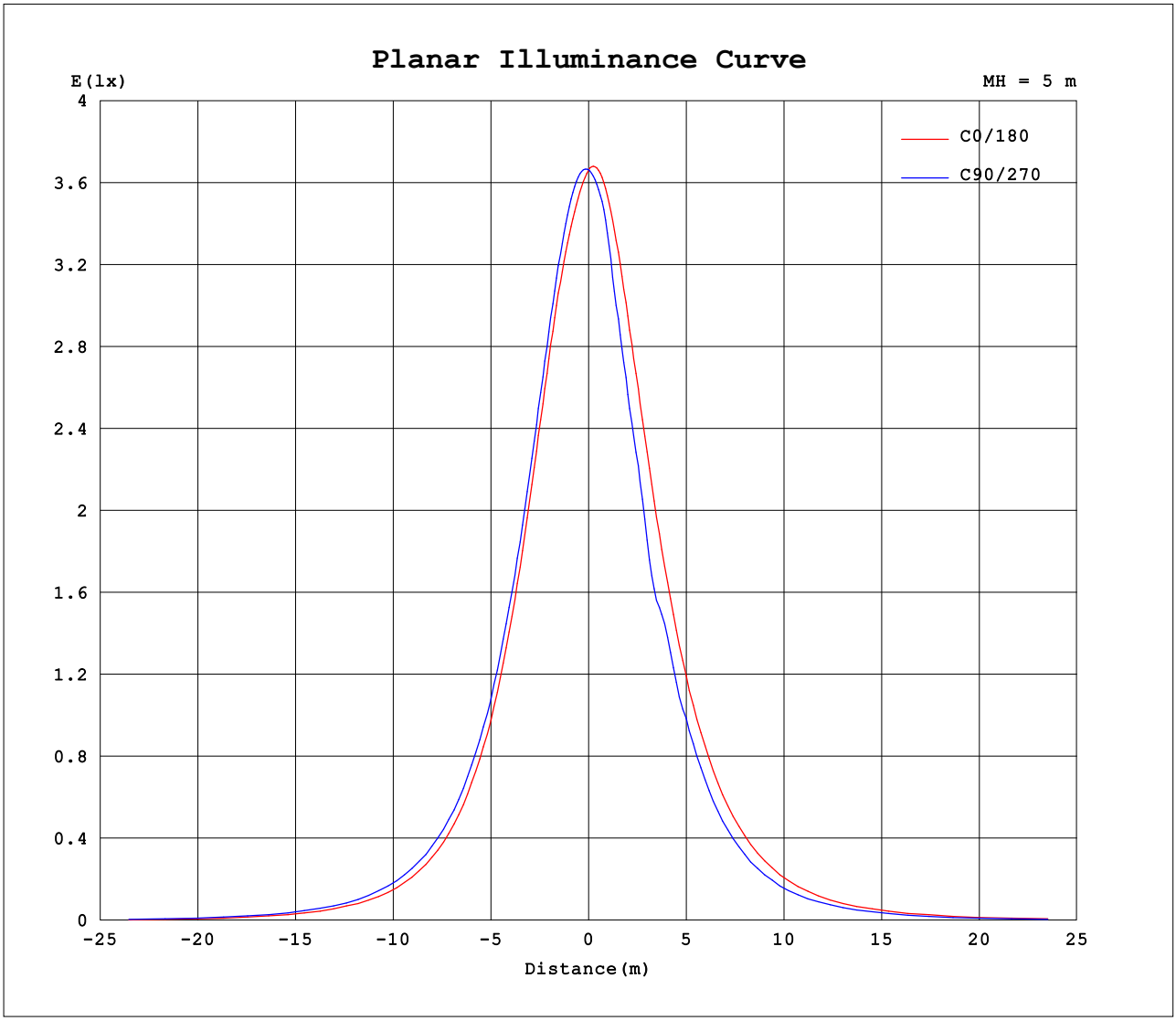
Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LMJ
Test Date:2021-06-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:9.643m [K=1.0000]
Remarks: G

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LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:23.998V I:0.1989A P:4.7732W PF:1.0000 Freq:49.99Hz Lamp Flux:324.219x1 lm		
NAME:	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	90	180	270															
0	91.5	91.6	91.5	91.6															
5	89.9	92.1	92.9	90.9															
10	88.6	92.1	93.5	89.5															
15	87.9	91.7	93.5	85.2															
20	86.7	90.7	92.9	82.1															
25	84.7	89.2	92.1	79.4															
30	82.0	86.9	91.1	75.4															
35	78.5	84.1	89.6	71.2															
40	74.1	80.6	87.5	72.8															
45	69.1	76.5	84.5	69.7															
50	63.4	71.6	80.4	64.9															
55	56.5	65.5	74.4	58.7															
60	48.5	57.7	66.1	51.1															
65	39.7	48.3	55.6	41.9															
70	30.1	37.7	44.1	33.2															
75	20.4	26.6	32.0	23.3															
80	11.4	15.8	19.0	13.9															
85	4.37	6.58	7.30	6.44															
90	0.58	1.41	0.28	2.02															
95	0.32	0.50	0.27	0.69															
100	0.41	0.47	0.34	0.49															
105	0.52	0.54	0.41	0.52															
110	0.58	0.60	0.49	0.60															
115	0.64	0.67	0.57	0.67															
120	0.70	0.72	0.64	0.73															
125	0.78	0.78	0.70	0.80															
130	0.84	0.83	0.77	0.85															
135	0.90	0.88	0.83	0.92															
140	0.95	0.93	0.88	0.97															
145	0.99	0.94	0.92	1.02															
150	1.02	0.97	0.95	1.07															
155	1.09	1.00	1.00	1.11															
160	1.12	1.03	1.03	1.15															
165	1.13	1.08	1.07	1.16															
170	1.13	1.13	1.09	1.19															
175	1.14	1.16	1.12	1.21															
180	1.13	1.18	1.13	1.20															

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
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