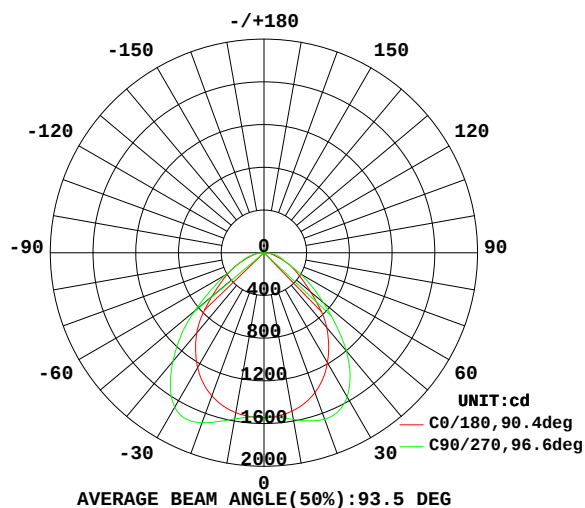


LUMINAIRE PHOTOMETRIC TEST REPORT

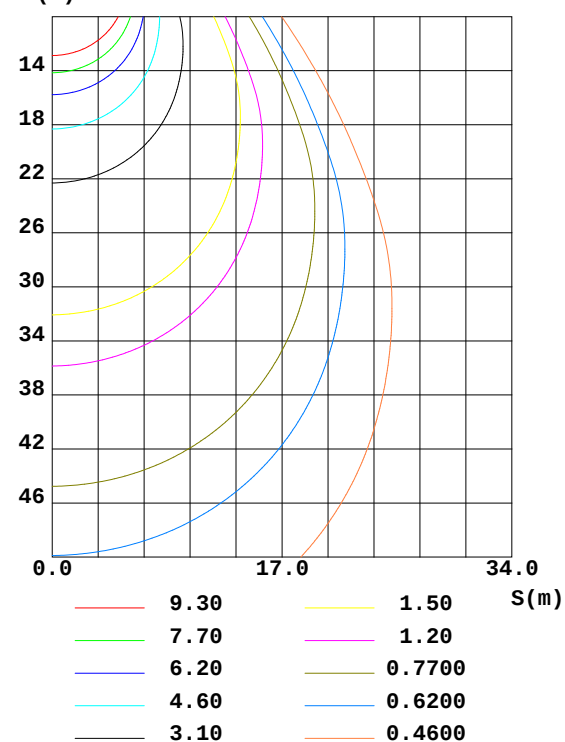
Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm					
NAME: VL-PLW406060-BC UGR<19			TYPE:		WEIGHT:
DIM.:			SPEC.:		SERIAL No.:
MFR.:			SUR.:620*620		PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 102.05 lm/W
MODEL		Imax(cd)	1719	S/MH(C0/180)	1.16	
NOMINAL POWER(W)	40	LOR(%)	100.0	S/MH(C90/270)	1.35	
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	3697.5	η UP, DN(C0-180)	0.3, 48.2	
NOMINAL FLUX(lm)	3697.52	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.2, 51.2	
LAMPS INSIDE	1	η up(%)	0.5	CIBSE SHR NOM	1.25	
TEST VOLTAGE(V)	220.4	η down(%)	99.5	CIBSE SHR MAX	1.35	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 29DEG
 Operators: Tommy
 Test Date: 2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity: 51%
 Test Distance: 10.500m [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	1507	1544	1585	1547	1520	1547	1580	1535	0- 10	147.1	147.1	3.98, 3.98
20	1394	1510	1659	1535	1427	1549	1694	1526	10- 20	438.2	585.4	15.8, 15.8
30	1189	1327	1557	1381	1243	1431	1670	1383	20- 30	684.5	1270	34.3, 34.3
40	914.7	1035	1198	1093	979.8	1139	1325	1081	30- 40	784.5	2054	55.6, 55.6
50	570.5	658.5	724.3	725.8	635.0	806.9	844.7	745.6	40- 50	700.8	2755	74.5, 74.5
60	342.5	323.7	389.5	372.2	390.4	417.6	416.1	375.8	50- 60	477.1	3232	87.4, 87.4
70	171.1	158.5	185.5	186.0	198.0	173.5	212.1	145.4	60- 70	262.9	3495	94.5, 94.5
80	66.99	85.06	100.8	98.58	90.36	86.68	91.71	76.25	70- 80	136.6	3632	98.2, 98.2
90	0.0002	0.0697	0.0008	1.117	3.828	8.428	3.435	0.0368	80- 90	46.54	3678	99.5, 99.5
100	0.2266	0.4467	0.3893	0.2979	0.0001	0	0.0507	0.0636	90-100	0.1680	3678	99.5, 99.5
110	1.118	1.474	1.458	1.255	0.7879	0.7926	1.022	1.033	100-110	0.6456	3679	99.5, 99.5
120	2.406	2.920	3.073	2.601	1.935	2.025	2.395	2.364	110-120	1.741	3681	99.5, 99.5
130	3.837	4.415	4.708	4.052	3.288	3.398	3.912	3.768	120-130	2.857	3684	99.6, 99.6
140	5.240	5.816	5.998	5.455	4.668	4.744	5.249	5.092	130-140	3.555	3687	99.7, 99.7
150	6.656	7.120	7.131	6.814	6.106	6.105	6.425	6.374	140-150	3.714	3691	99.8, 99.8
160	8.002	8.189	8.130	7.984	7.614	7.451	7.650	7.592	150-160	3.329	3694	99.9, 99.9
170	8.839	8.960	8.803	8.855	8.677	8.514	8.564	8.556	160-170	2.339	3697	100, 100
180	9.123	9.130	9.045	9.165	9.165	9.109	9.088	9.116	170-180	0.8507	3698	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

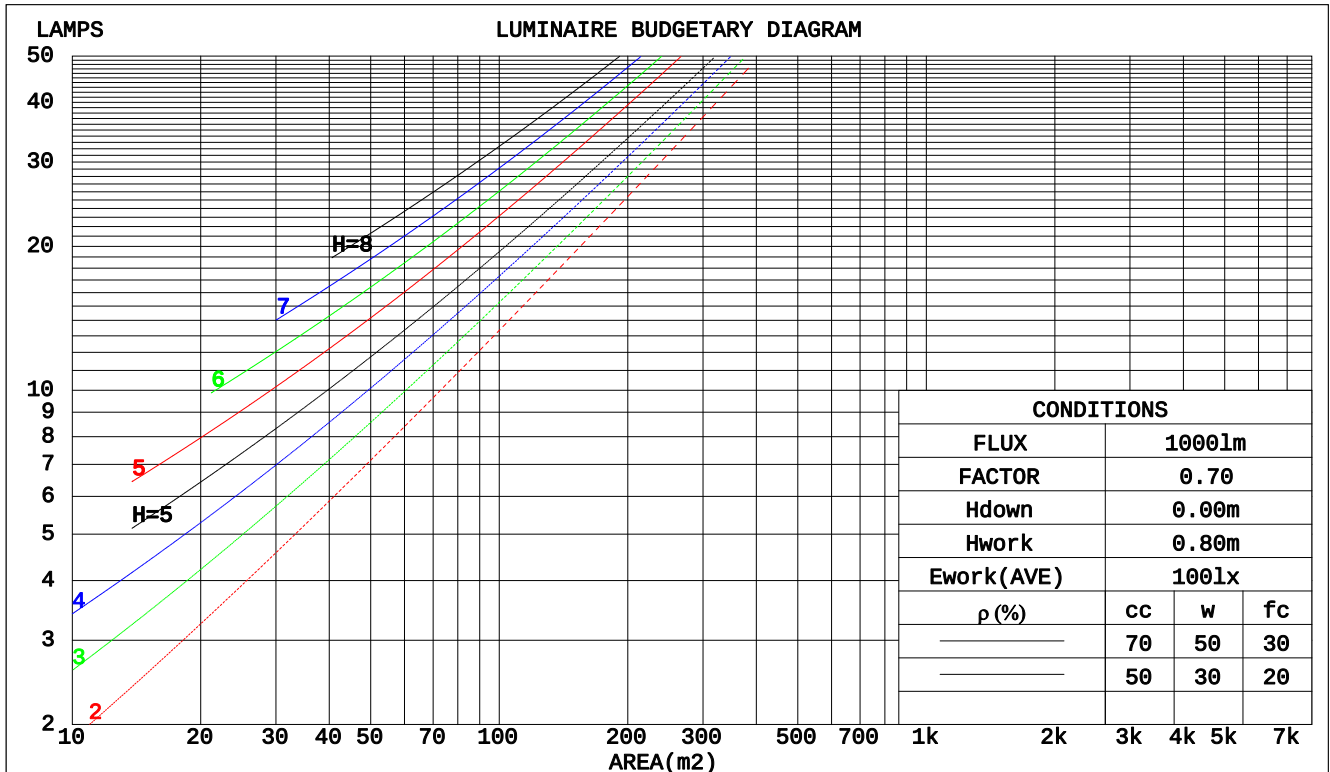
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 29DEG
 Operators: Tommy
 Test Date: 2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity: 51%
 Test Distance: 10.500m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm																
NAME: VL-PLW406060-BC UGR<19							TYPE:				WEIGHT:					
DIM.:							SPEC.:				SERIAL No.:					
MFR.:							SUR.:620*620				PROTECTION ANGLE:					

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															



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:29DEG
Operators:Tommy
Test Date:2015-10-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
Humidity:51%
Test Distance:10.500m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm									
NAME: VL-PLW406060-BC UGR<19					TYPE:			WEIGHT:	
DIM.:					SPEC.:			SERIAL No.:	
MFR.:					SUR.:620*620			PROTECTION ANGLE:	

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	.268	.152	.048	.261	.149	.047	.247	.142	.045	.235	.136	.043	.224	.130	.042		
2.0	.255	.140	.043	.249	.137	.042	.237	.132	.041	.227	.127	.040	.217	.123	.039		
3.0	.240	.127	.038	.234	.125	.038	.224	.121	.037	.214	.117	.036	.206	.114	.035		
4.0	.224	.116	.034	.219	.115	.034	.210	.111	.033	.202	.108	.033	.194	.105	.032		
5.0	.210	.107	.031	.205	.105	.031	.197	.103	.030	.190	.100	.030	.183	.098	.029		
6.0	.196	.098	.028	.193	.097	.028	.185	.095	.028	.179	.093	.027	.172	.091	.027		
7.0	.184	.091	.026	.181	.090	.026	.175	.088	.025	.169	.086	.025	.163	.085	.025		
8.0	.174	.085	.024	.171	.084	.024	.165	.082	.024	.159	.081	.023	.154	.079	.023		
9.0	.164	.079	.022	.161	.078	.022	.156	.077	.022	.151	.076	.022	.146	.074	.021		
10.0	.155	.074	.021	.152	.074	.021	.148	.072	.020	.143	.071	.020	.139	.070	.020		

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	.194	.194	.194	.166	.166	.166	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.181	.160	.142	.155	.138	.122	.106	.095	.084	.061	.055	.049	.020	.018	.016	
2.0	.171	.136	.106	.147	.117	.092	.101	.081	.064	.058	.047	.038	.019	.015	.012	
3.0	.163	.118	.083	.139	.102	.072	.096	.071	.050	.055	.041	.030	.018	.013	.010	
4.0	.155	.104	.066	.133	.090	.057	.091	.063	.040	.053	.037	.024	.017	.012	.008	
5.0	.147	.094	.054	.127	.081	.047	.087	.057	.033	.051	.033	.020	.016	.011	.007	
6.0	.140	.085	.046	.121	.074	.040	.083	.052	.028	.048	.030	.017	.016	.010	.006	
7.0	.134	.078	.039	.115	.068	.034	.080	.048	.024	.046	.028	.014	.015	.009	.005	
8.0	.128	.072	.034	.110	.063	.030	.076	.044	.021	.044	.026	.013	.014	.009	.004	
9.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.043	.024	.011	.014	.008	.004	
10.0	.117	.063	.027	.101	.055	.024	.070	.039	.017	.041	.023	.010	.013	.008	.003	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:29DEG
 Operators:Tommy
 Test Date:2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity:51%
 Test Distance:10.500m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm										
NAME: VL-PLW406060-BC UGR<19						TYPE:		WEIGHT:		
DIM.:						SPEC.:		SERIAL No.:		
MFR.:						SUR.:620*620		PROTECTION 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				
x = 2H y = 2H						Viewed endwise				
3H						14.0	15.4	14.3	15.6	15.8
4H						14.8	16.2	15.1	16.4	16.6
6H						15.4	16.7	15.7	16.9	17.2
8H						15.8	17.0	16.1	17.2	17.5
12H						15.2	16.3	15.5	16.6	16.9
						16.2	17.3	16.5	17.5	17.8
						16.3	17.4	16.6	17.7	18.0
						16.4	17.4	16.7	17.7	18.0
4H 2H						14.3	15.5	14.6	15.7	16.0
3H						14.9	16.1	15.2	16.4	16.6
4H						15.2	16.2	15.5	16.5	16.8
6H						15.6	16.5	15.9	16.8	17.2
8H						16.2	17.2	16.6	17.5	17.9
12H						15.9	16.7	16.3	17.1	17.5
						16.8	17.6	17.2	18.0	18.3
						17.0	17.8	17.4	18.2	18.6
						17.2	17.9	17.6	18.3	18.7
8H 4H						15.7	16.5	16.1	16.9	17.3
6H						16.4	17.1	16.8	17.5	17.9
8H						16.2	16.9	16.7	17.3	17.7
12H						17.1	17.7	17.5	18.1	18.6
						16.4	17.0	16.9	17.4	17.9
						17.4	17.9	17.8	18.4	18.8
						16.6	17.0	17.0	17.5	18.0
						17.6	18.1	18.1	18.5	19.0
12H 4H						15.7	16.4	16.2	16.8	17.3
6H						16.4	17.1	16.8	17.5	17.9
8H						16.3	16.9	16.8	17.3	17.8
						17.1	17.7	17.6	18.1	18.6
						16.5	17.0	17.0	17.5	18.0
						17.5	17.9	17.9	18.4	18.9
Variations with the observer position at spacings:										
S = 1.0H		+ 0.5 / - 0.6				+ 0.4 / - 0.5				
1.5H		+ 0.2 / - 0.4				+ 0.2 / - 0.3				
2.0H		+ 0.8 / - 0.7				+ 1.0 / - 0.9				

CIE Pub.117 Corrected 3698 lm Total Lamp Luminous Flux.(8log(F/F0) = 4.5)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:29DEG
 Operators:Tommy
 Test Date:2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity:51%
 Test Distance:10.500m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm		
NAME: VL-PLW406060-BC UGR<19	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:620*620	PROTECTION ANGLE:

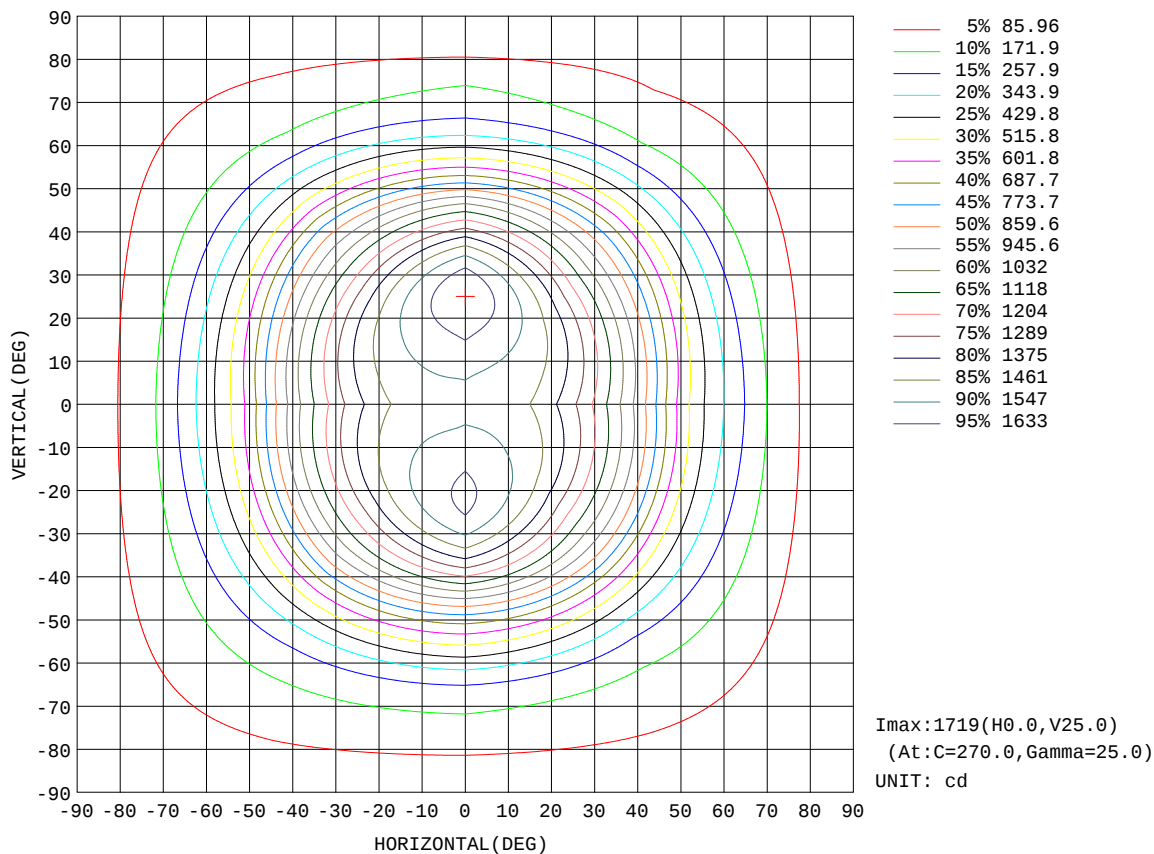
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	64	53	47	63	53	47	62	52	47	41
0.80	74	63	57	73	63	57	71	62	56	50
1.00	82	72	66	81	72	66	79	73	65	59
1.25	89	80	73	87	79	73	85	77	72	66
1.50	93	85	79	91	84	78	89	82	77	70
2.00	99	92	86	97	91	85	94	88	84	77
2.50	102	96	90	100	94	89	96	92	88	80
3.00	105	99	94	103	98	93	99	95	91	83
4.00	108	103	99	106	102	98	102	98	95	87
5.00	110	106	103	108	104	101	103	100	98	89
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNM = 1.25		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:29DEG
 Operators:Tommy
 Test Date:2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity:51%
 Test Distance:10.500m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm		
NAME:VL-PLW406060-BC UGR<19	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:620*620	PROTECTION ANGLE:

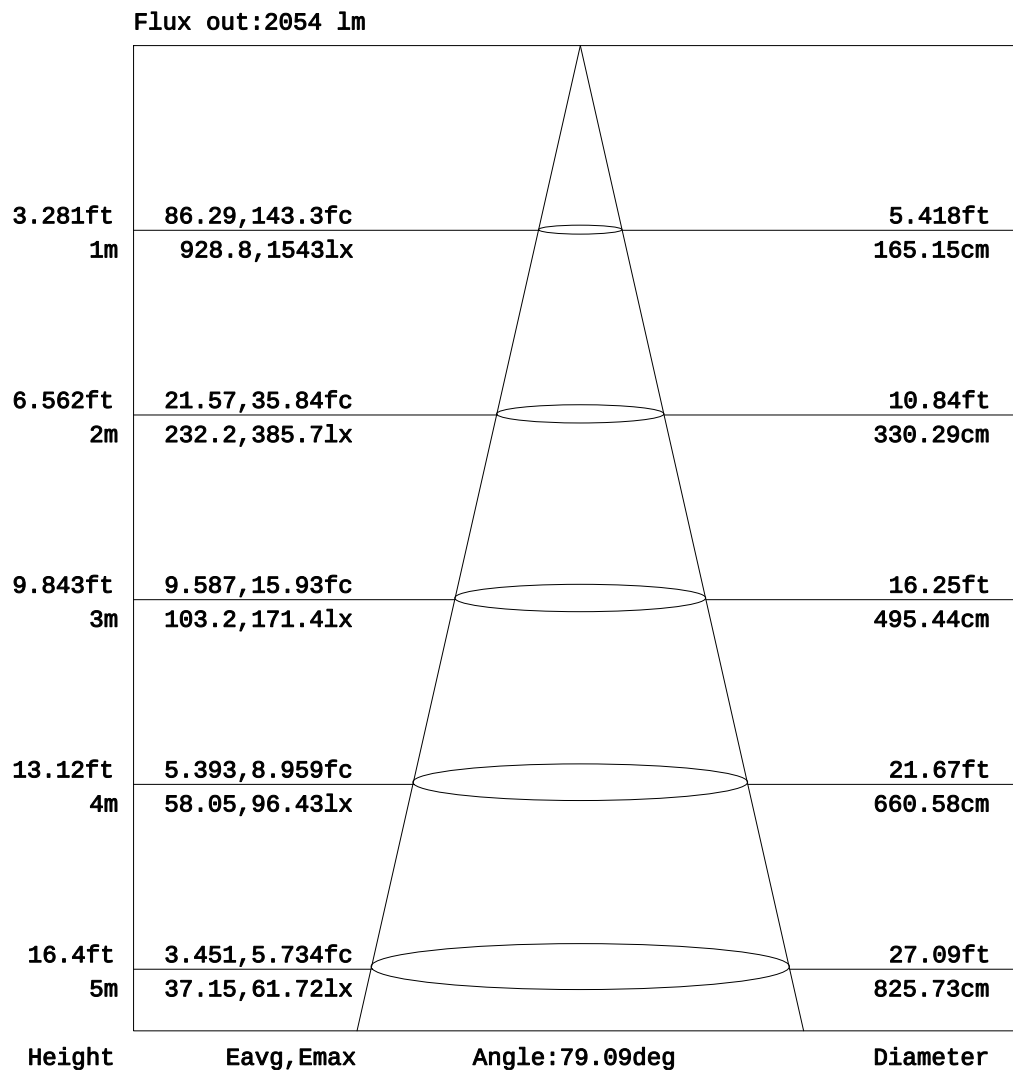


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:29DEG
Operators:Tommy
Test Date:2015-10-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
Humidity:51%
Test Distance:10.500m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm		
NAME: VL-PLW406060-BC UGR<19	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:620*620	PROTECTION ANGLE:



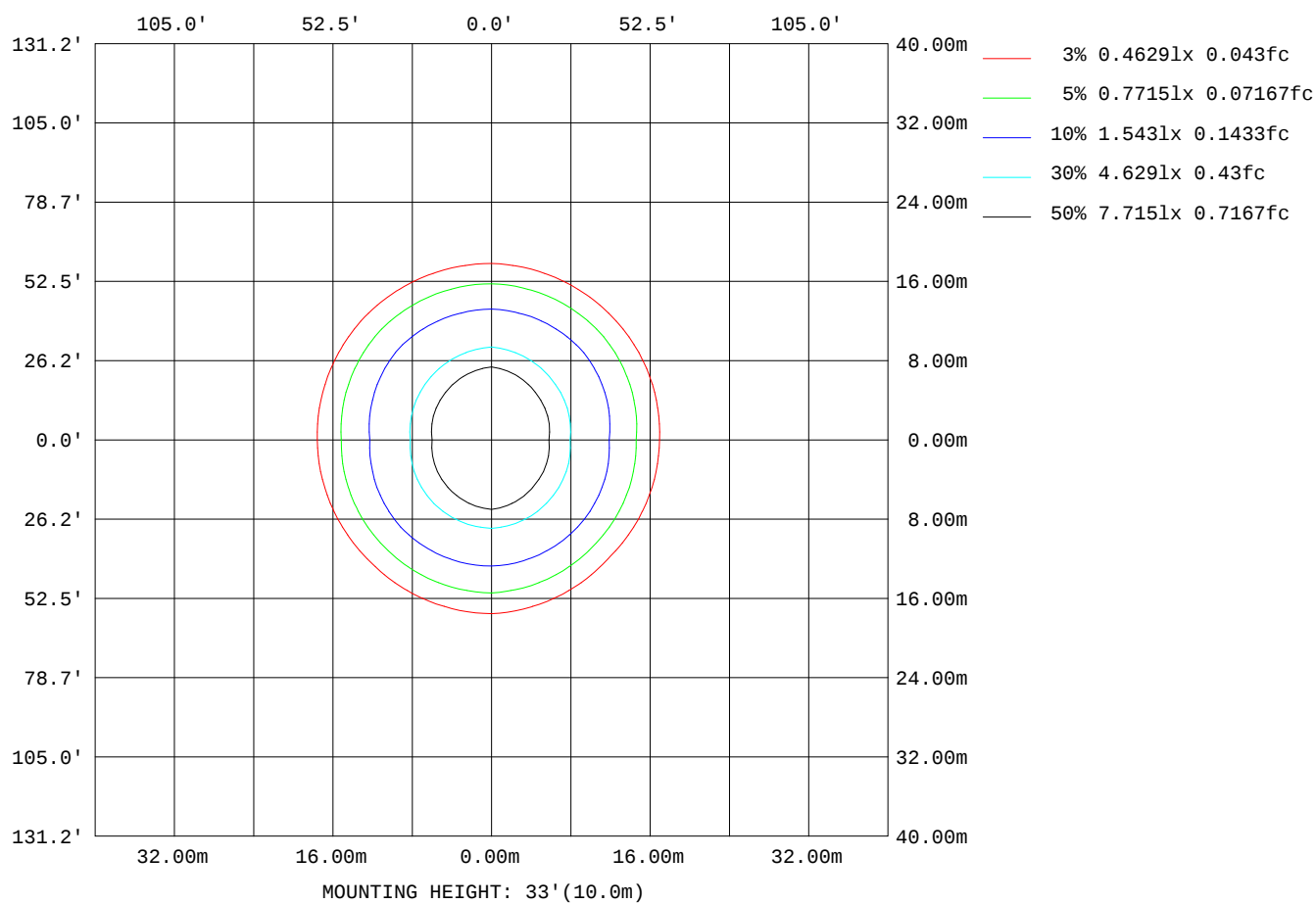
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:29DEG
 Operators:Tommy
 Test Date:2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity:51%
 Test Distance:10.500m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

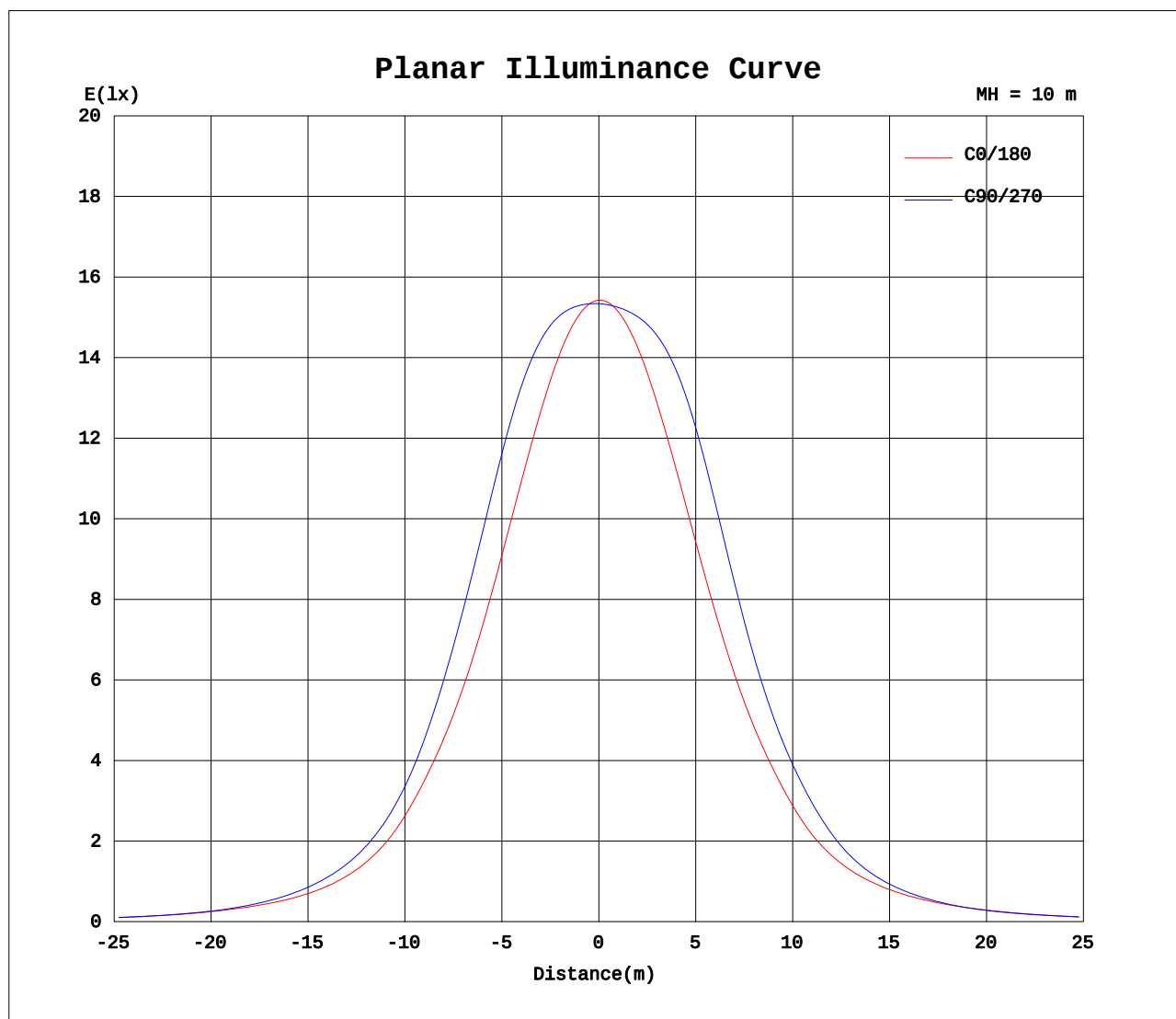
Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm		
NAME: VL-PLW406060-BC UGR<19	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:
MFR.:	SUR.:620*620	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:29DEG
Operators:Tommy
Test Date:2015-10-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
Humidity:51%
Test Distance:10.500m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 29DEG
Operators: Tommy
Test Date: 2015-10-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000A_V1 SYSTEM V2.0.275
Humidity: 51%
Test Distance: 10.500m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.4V I:0.1800A P:38.40W PF:0.9680 Lamp Flux:3877.52x1 lm									
NAME: VL-PLW406060-BC UGR<19					TYPE:			WEIGHT:	
DIM.:					SPEC.:			SERIAL No.:	
MFR.:					SUR.:620*620			PROTECTION ANGLE:	

Table--1

UNIT: cd

γ (DEG)	C (DEG)																		
	0	45	90	135	180	225	270	315											
0	1543	1538	1534	1531	1543	1538	1534	1531											
5	1533	1541	1549	1537	1539	1540	1544	1531											
10	1507	1544	1585	1547	1520	1547	1580	1535											
15	1461	1539	1629	1551	1484	1554	1636	1538											
20	1394	1510	1659	1535	1427	1549	1694	1526											
25	1303	1442	1641	1483	1347	1515	1719	1480											
30	1189	1327	1557	1381	1243	1431	1670	1383											
35	1056	1184	1406	1243	1118	1298	1529	1241											
40	915	1035	1198	1093	980	1139	1325	1081											
45	743	867	949	930	814	981	1103	923											
50	570	659	724	726	635	807	845	746											
55	438	474	544	531	498	600	600	549											
60	343	324	389	372	390	418	416	376											
65	254	220	261	258	293	274	282	237											
70	171	159	185	186	198	174	212	145											
75	107	122	147	138	132	116	159	100											
80	67.0	85.1	101	98.6	90.4	86.7	91.7	76.2											
85	25.7	34.4	41.3	51.0	46.2	56.8	43.0	42.7											
90	0.00	0.07	0.00	1.12	3.83	8.43	3.44	0.04											
95	0.00	0.06	0.03	0.00	0.00	0.00	0.00	0.00											
100	0.23	0.45	0.39	0.30	0.00	0.00	0.05	0.06											
105	0.65	0.92	0.86	0.74	0.31	0.30	0.50	0.52											
110	1.12	1.47	1.46	1.26	0.79	0.79	1.02	1.03											
115	1.72	2.17	2.22	1.88	1.30	1.37	1.66	1.67											
120	2.41	2.92	3.07	2.60	1.93	2.02	2.40	2.36											
125	3.13	3.69	3.92	3.33	2.61	2.71	3.17	3.07											
130	3.84	4.41	4.71	4.05	3.29	3.40	3.91	3.77											
135	4.54	5.13	5.40	4.76	3.98	4.07	4.61	4.43											
140	5.24	5.82	6.00	5.46	4.67	4.74	5.25	5.09											
145	5.95	6.47	6.57	6.15	5.38	5.42	5.85	5.74											
150	6.66	7.12	7.13	6.81	6.11	6.11	6.43	6.37											
155	7.39	7.69	7.69	7.42	6.88	6.80	7.04	7.00											
160	8.00	8.19	8.13	7.98	7.61	7.45	7.65	7.59											
165	8.47	8.61	8.50	8.45	8.20	8.03	8.15	8.12											
170	8.84	8.96	8.80	8.85	8.68	8.51	8.56	8.56											
175	9.06	9.12	9.02	9.13	9.02	8.87	8.90	8.93											
180	9.12	9.13	9.05	9.17	9.17	9.11	9.09	9.12											

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:29DEG
 Operators:Tommy
 Test Date:2015-10-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000A_V1 SYSTEM V2.0.275
 Humidity:51%
 Test Distance:10.500m [K=1.0000]
 Remarks: