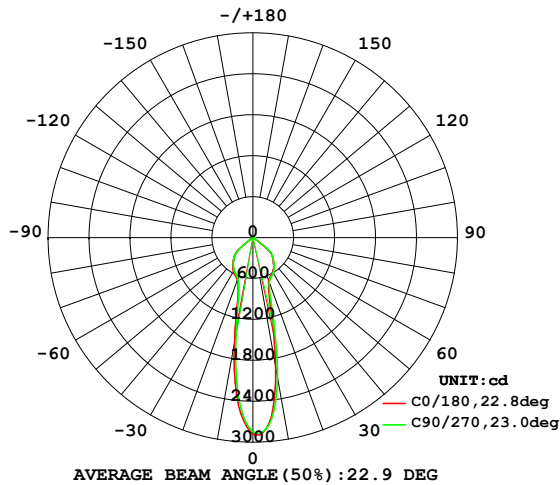


LUMINAIRE PHOTOMETRIC TEST REPORT

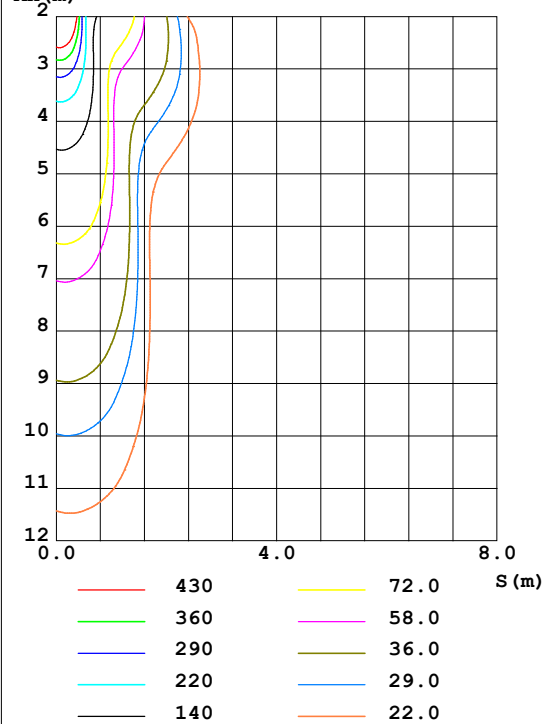
Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm					
NAME: BT-PAR38 16W		TYPE:AL reflector		WEIGHT:	
SPEC.:5000K COB 30D		DIM.: 120*129mm		SERIAL No.:	
MFR.: EVERFINE		SUR.:120*120mm		PROTECTION ANGLE:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 99.30 lm/W
MODEL	COB	I _{max} (cd)	2897	S/MH(C0/180)	0.36	
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.34	
RATED VOLTAGE(V)	110	TOTAL FLUX(lm)	1538.7	η UP,DN(C0-180)	0.2,53.3	
NOMINAL FLUX(lm)	1538.75	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.2,46.3	
LAMPS INSIDE	1	η up(%)	0.4	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	110	η down(%)	99.6	CIBSE SHR MAX	0.50	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:30DEG
 Operators:
 Test Date:2015-08-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
 Humidity:65.0%
 Test Distance:9.390m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	1932	2082	1563	1422					0- 10	219.3	219.3	14.3,14.3
20	680.1	709.5	665.1	647.6					10- 20	276.9	496.2	32.2,32.2
30	582.1	597.3	573.2	553.7					20- 30	285.4	781.6	50.8,50.8
40	471.7	479.1	449.1	441.6					30- 40	326.3	1108	72,72
50	327.3	344.6	259.8	233.1					40- 50	301.9	1410	91.6,91.6
60	23.01	21.91	17.15	21.36					50- 60	92.32	1502	97.6,97.6
70	13.76	13.03	13.21	14.77					60- 70	16.23	1518	98.7,98.7
80	7.999	8.065	6.406	6.222					70- 80	11.50	1530	99.4,99.4
90	0.4916	0.4798	0	0					80- 90	3.188	1533	99.6,99.6
100	0	0	0	0					90-100	0.0172	1533	99.6,99.6
110	0.0518	0.0915	0.0198	0					100-110	0.0055	1533	99.6,99.6
120	0.3974	0.4373	0.3265	0.3062					110-120	0.1838	1533	99.6,99.6
130	1.023	1.051	0.8617	0.8603					120-130	0.5697	1534	99.7,99.7
140	1.675	1.644	1.429	1.441					130-140	0.9658	1535	99.7,99.7
150	2.497	2.427	2.114	2.216					140-150	1.176	1536	99.8,99.8
160	3.527	3.457	3.138	3.221					150-160	1.303	1537	99.9,99.9
170	4.375	4.383	3.881	3.926					160-170	1.057	1538	100,100
180	4.520	4.533	4.552	4.493					170-180	0.4028	1539	100,100
DEG	LUMINOUS INTENSITY:cd MAX (Ii - Iavg)/Iavg (0-135) = 639.2 %									UNIT:lm		

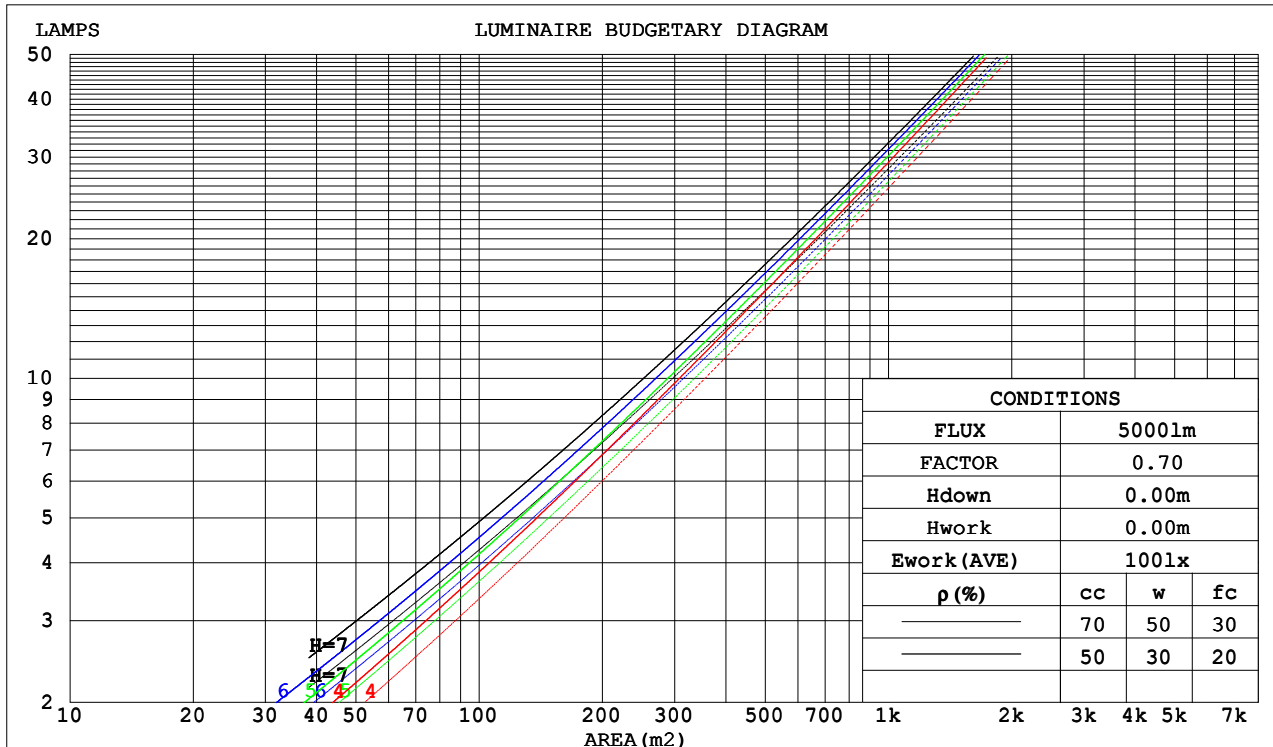
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:30DEG
 Operators:
 Test Date:2015-08-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
 Humidity:65.0%
 Test Distance:9.390m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm		
NAME: BT-PAR38 16W	TYPE:AL reflector	WEIGHT:
SPEC.:5000K COB 30D	DIM.: 120*129mm	SERIAL No.:
MFR.: EVERFINE	SUR.:120*120mm	PROTECTION ANGLE:

pcc	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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	.00
1.0	1.09	1.07	1.04	1.07	1.05	1.02	1.03	1.01	.99	.99	.98	.96	.96	.94	.93	.91
2.0	1.00	.96	.92	.98	.94	.91	.95	.92	.89	.92	.89	.87	.89	.87	.85	.83
3.0	.92	.86	.82	.91	.85	.81	.88	.83	.80	.85	.82	.78	.83	.80	.77	.75
4.0	.85	.78	.74	.84	.78	.73	.81	.76	.72	.79	.75	.71	.77	.74	.70	.69
5.0	.78	.72	.67	.77	.71	.67	.76	.70	.66	.74	.69	.65	.72	.68	.65	.63
6.0	.73	.66	.61	.72	.66	.61	.70	.65	.60	.69	.64	.60	.67	.63	.60	.58
7.0	.68	.61	.56	.67	.61	.56	.66	.60	.56	.64	.59	.55	.63	.59	.55	.54
8.0	.63	.57	.52	.63	.56	.52	.62	.56	.52	.60	.55	.52	.59	.55	.51	.50
9.0	.60	.53	.49	.59	.53	.48	.58	.52	.48	.57	.52	.48	.56	.51	.48	.46
10.0	.56	.50	.45	.56	.50	.45	.55	.49	.45	.54	.49	.45	.53	.48	.45	.44



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:30DEG
 Operators:
 Test Date:2015-08-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
 Humidity:65.0%
 Test Distance:9.390m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm														
NAME: BT-PAR38 16W					TYPE:AL reflector					WEIGHT:				
SPEC.:5000K COB 30D					DIM.: 120*129mm					SERIAL No.:				
MFR.: EVERFINE					SUR.:120*120mm					PROTECTION ANGLE:				

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)										
0.0																	
1.0	.203	.116	.037	.196	.112	.036	.184	.105	.034	.172	.099	.032	.161	.093	.030		
2.0	.197	.108	.033	.191	.105	.032	.180	.100	.031	.170	.095	.030	.160	.091	.029		
3.0	.188	.100	.030	.183	.098	.029	.173	.094	.029	.165	.090	.028	.156	.087	.027		
4.0	.179	.093	.027	.174	.091	.027	.166	.088	.026	.158	.085	.026	.151	.082	.025		
5.0	.169	.086	.025	.166	.085	.025	.158	.082	.024	.151	.080	.024	.145	.078	.023		
6.0	.161	.081	.023	.157	.079	.023	.151	.077	.022	.145	.075	.022	.139	.073	.022		
7.0	.153	.075	.021	.150	.074	.021	.144	.073	.021	.138	.071	.021	.133	.069	.020		
8.0	.145	.071	.020	.142	.070	.020	.137	.068	.020	.132	.067	.019	.128	.066	.019		
9.0	.138	.067	.019	.135	.066	.019	.131	.065	.018	.126	.063	.018	.122	.062	.018		
10.0	.131	.063	.017	.129	.062	.017	.125	.061	.017	.121	.060	.017	.117	.059	.017		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio Ceiling Cavity Exitance Coefficients(CCEC)															
0.0	.193	.193	.193	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.176	.160	.146	.150	.137	.125	.103	.094	.087	.059	.055	.050	.019	.018	.016	
2.0	.162	.135	.112	.139	.116	.097	.095	.081	.068	.055	.047	.040	.018	.015	.013	
3.0	.152	.117	.089	.130	.101	.077	.089	.070	.054	.052	.041	.032	.017	.013	.010	
4.0	.142	.102	.072	.122	.088	.062	.084	.062	.044	.049	.036	.026	.016	.012	.009	
5.0	.134	.091	.059	.115	.079	.051	.079	.055	.036	.046	.032	.022	.015	.011	.007	
6.0	.127	.082	.050	.109	.071	.043	.075	.050	.031	.044	.029	.018	.014	.010	.006	
7.0	.121	.075	.042	.104	.065	.037	.072	.045	.026	.042	.027	.016	.013	.009	.005	
8.0	.115	.069	.037	.099	.060	.032	.069	.042	.023	.040	.025	.014	.013	.008	.004	
9.0	.110	.064	.032	.095	.055	.028	.066	.039	.020	.038	.023	.012	.012	.008	.004	
10.0	.105	.059	.029	.090	.051	.025	.063	.036	.018	.037	.021	.011	.012	.007	.004	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:
Test Date:2015-08-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm										
NAME: BT-PAR38 16W					TYPE:AL reflector			WEIGHT:		
SPEC.:5000K COB 30D					DIM.: 120*129mm			SERIAL No.:		
MFR.: EVERFINE					SUR.:120*120mm			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					Viewed endwise				
x = 2H y = 2H	24.0	25.1	24.2	25.3	25.5	24.1	25.2	24.4	25.4	25.6
3H	23.9	24.9	24.1	25.1	25.3	24.0	25.0	24.3	25.2	25.4
4H	23.8	24.7	24.1	25.0	25.2	23.9	24.9	24.2	25.1	25.4
6H	23.7	24.6	24.1	24.9	25.2	23.9	24.8	24.2	25.0	25.3
8H	23.7	24.6	24.0	24.8	25.1	23.8	24.7	24.2	25.0	25.2
12H	23.7	24.5	24.0	24.8	25.1	23.8	24.6	24.1	24.9	25.2
4H 2H	23.8	24.7	24.1	25.0	25.2	23.9	24.9	24.2	25.1	25.4
3H	23.7	24.5	24.0	24.8	25.1	23.8	24.6	24.1	24.9	25.2
4H	23.6	24.4	24.0	24.7	25.0	23.7	24.5	24.1	24.8	25.1
6H	23.6	24.3	24.0	24.6	25.0	23.7	24.4	24.1	24.7	25.1
8H	23.6	24.2	24.0	24.5	24.9	23.7	24.3	24.1	24.7	25.0
12H	23.6	24.1	24.0	24.5	24.9	23.7	24.2	24.1	24.6	25.0
8H 4H	23.5	24.1	23.9	24.5	24.9	23.6	24.2	24.0	24.6	25.0
6H	23.5	24.0	24.0	24.4	24.8	23.6	24.1	24.1	24.5	25.0
8H	23.5	24.0	24.0	24.4	24.8	23.6	24.1	24.1	24.5	24.9
12H	23.5	23.9	24.0	24.3	24.8	23.6	24.0	24.1	24.4	24.9
12H 4H	23.5	24.0	23.9	24.4	24.8	23.6	24.1	24.0	24.5	24.9
6H	23.5	23.9	23.9	24.3	24.8	23.6	24.0	24.1	24.5	24.9
8H	23.5	23.9	24.0	24.3	24.8	23.6	24.0	24.1	24.4	24.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.2 / - 6.0					+ 2.2 / - 6.1				
1.5H	+ 1.1 / - 5.7					+ 1.0 / - 5.6				
2.0H	+ 4.4 / - 8.1					+ 4.2 / - 8.3				

CIE Pub.117 Corrected 1539 lm Total Lamp Luminous Flux. (8log(F/F0) = 1.5)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:
Test Date:2015-08-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm		
NAME: BT-PAR38 16W	TYPE:AL reflector	WEIGHT:
SPEC.:5000K COB 30D	DIM.: 120*129mm	SERIAL No.:
MFR.: EVERFINE	SUR.:120*120mm	PROTECTION ANGLE:

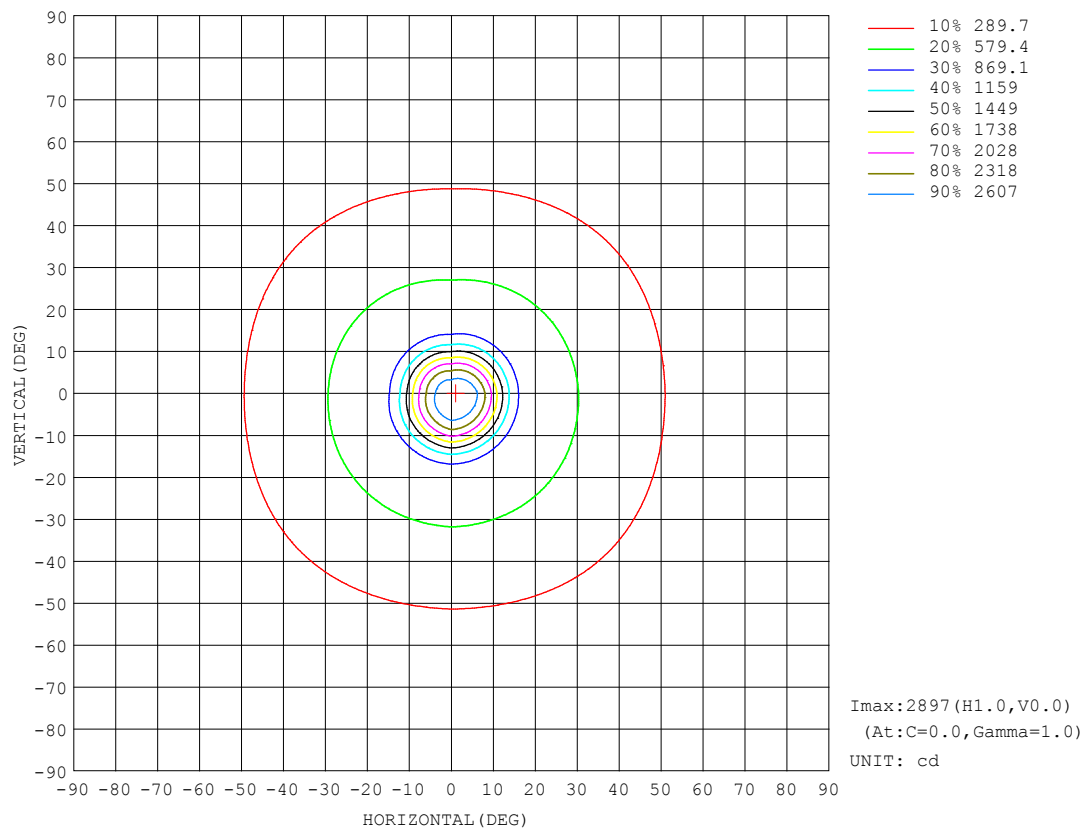
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	74	65	60	73	65	59	72	64	59	54
0.80	83	75	70	82	75	70	81	74	69	64
1.00	90	83	78	89	82	78	88	83	77	72
1.25	96	89	84	95	89	84	93	87	83	78
1.50	100	93	89	99	93	88	96	91	87	82
2.00	104	99	95	103	98	94	100	96	92	86
2.50	107	102	98	105	100	97	102	98	95	88
3.00	109	104	101	107	103	100	103	100	97	90
4.00	111	107	104	109	106	103	105	103	100	93
5.00	113	109	107	110	108	105	106	104	102	94
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:
Test Date:2015-08-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm		
NAME: BT-PAR38 16W	TYPE:AL reflector	WEIGHT:
SPEC.:5000K COB 30D	DIM.: 120*129mm	SERIAL No.:
MFR.: EVERFINE	SUR.:120*120mm	PROTECTION ANGLE:

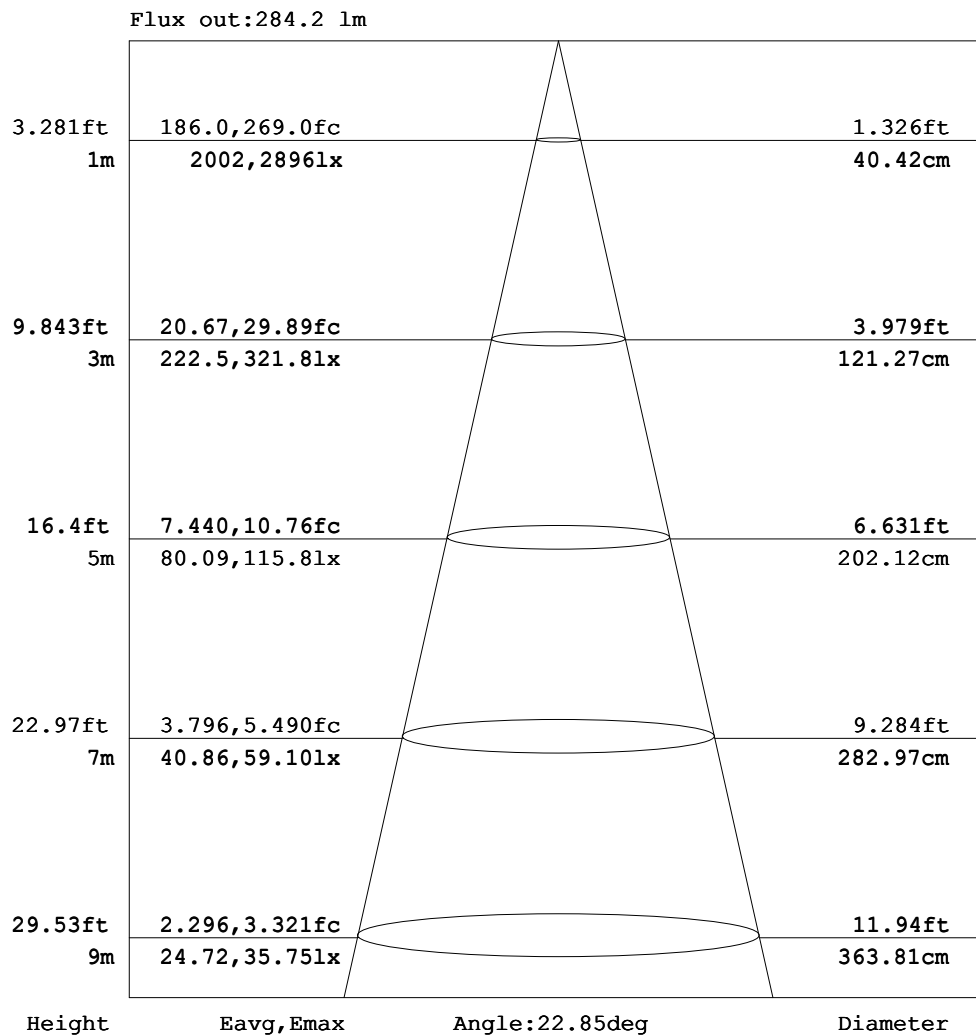


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:
Test Date:2015-08-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

AAI Figure

Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm		
NAME: BT-PAR38 16W	TYPE:AL reflector	WEIGHT:
SPEC.:5000K COB 30D	DIM.: 120*129mm	SERIAL No.:
MFR.: EVERFINE	SUR.:120*120mm	PROTECTION ANGLE:



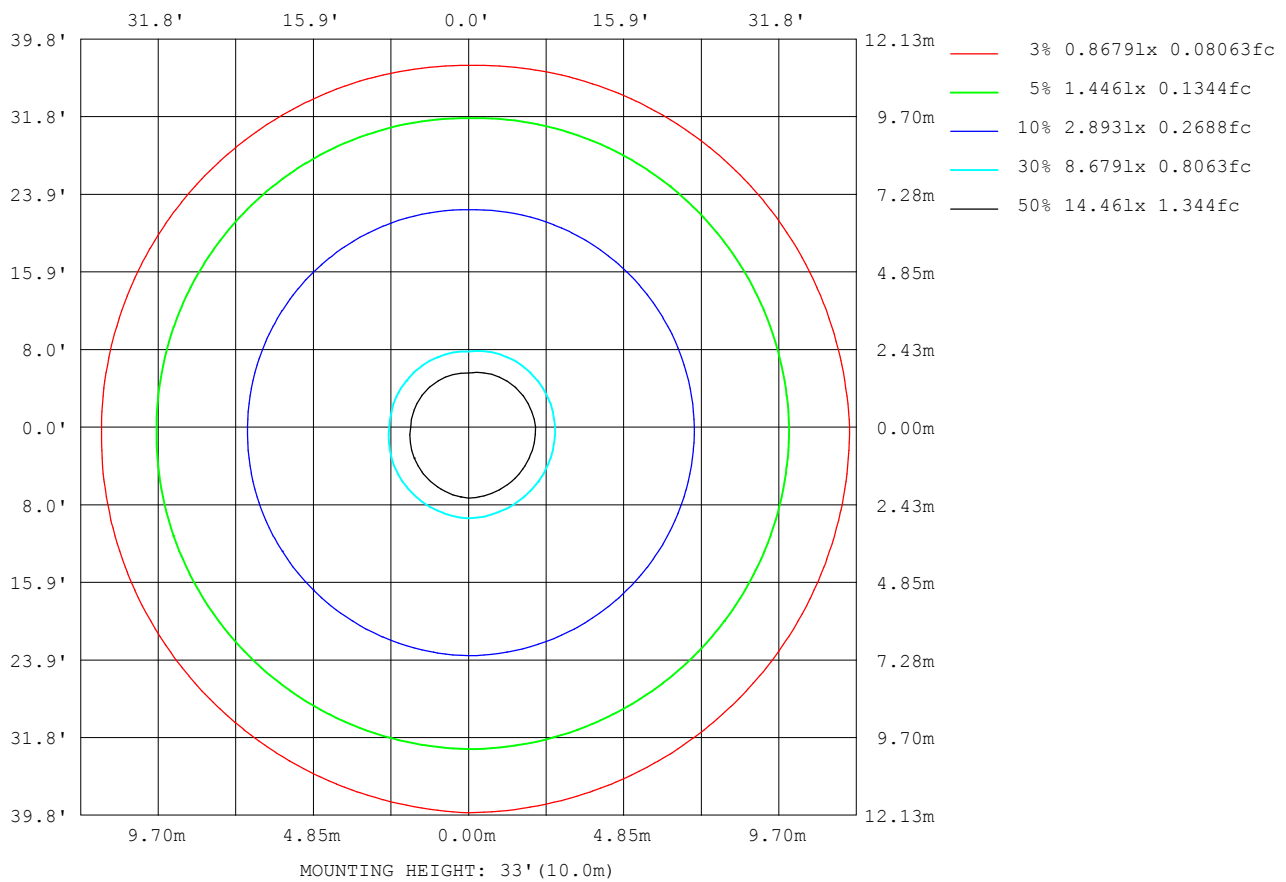
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:
Test Date:2015-08-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

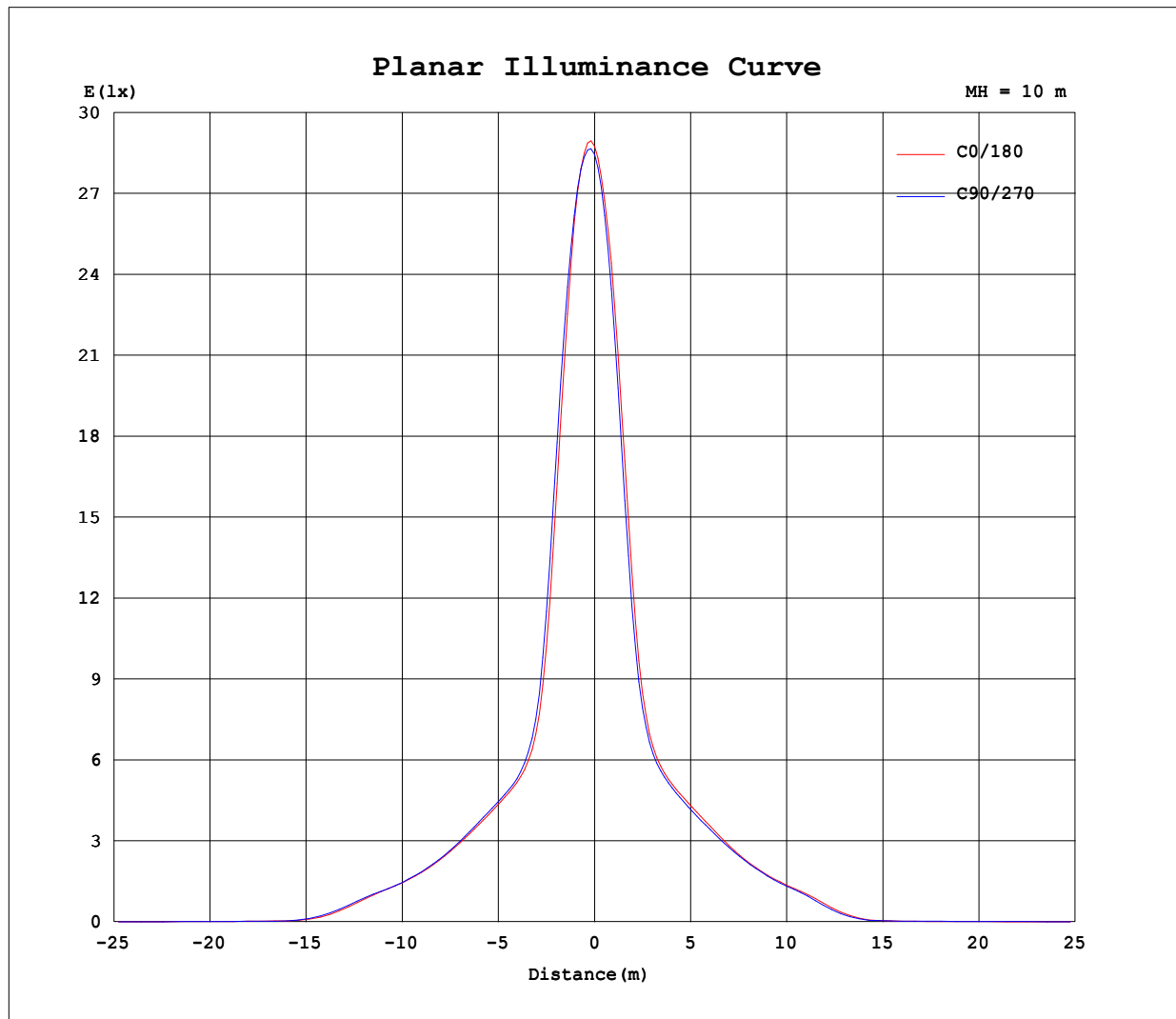
Test:U:110.4V I:0.1433A P:15.50W PF:0.9791 Lamp Flux:1538.75x1 lm		
NAME: BT-PAR38 16W	TYPE:AL reflector	WEIGHT:
SPEC.:5000K COB 30D	DIM.: 120*129mm	SERIAL No.:
MFR.: EVERFINE	SUR.:120*120mm	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:30DEG
Operators:
Test Date:2015-08-17

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

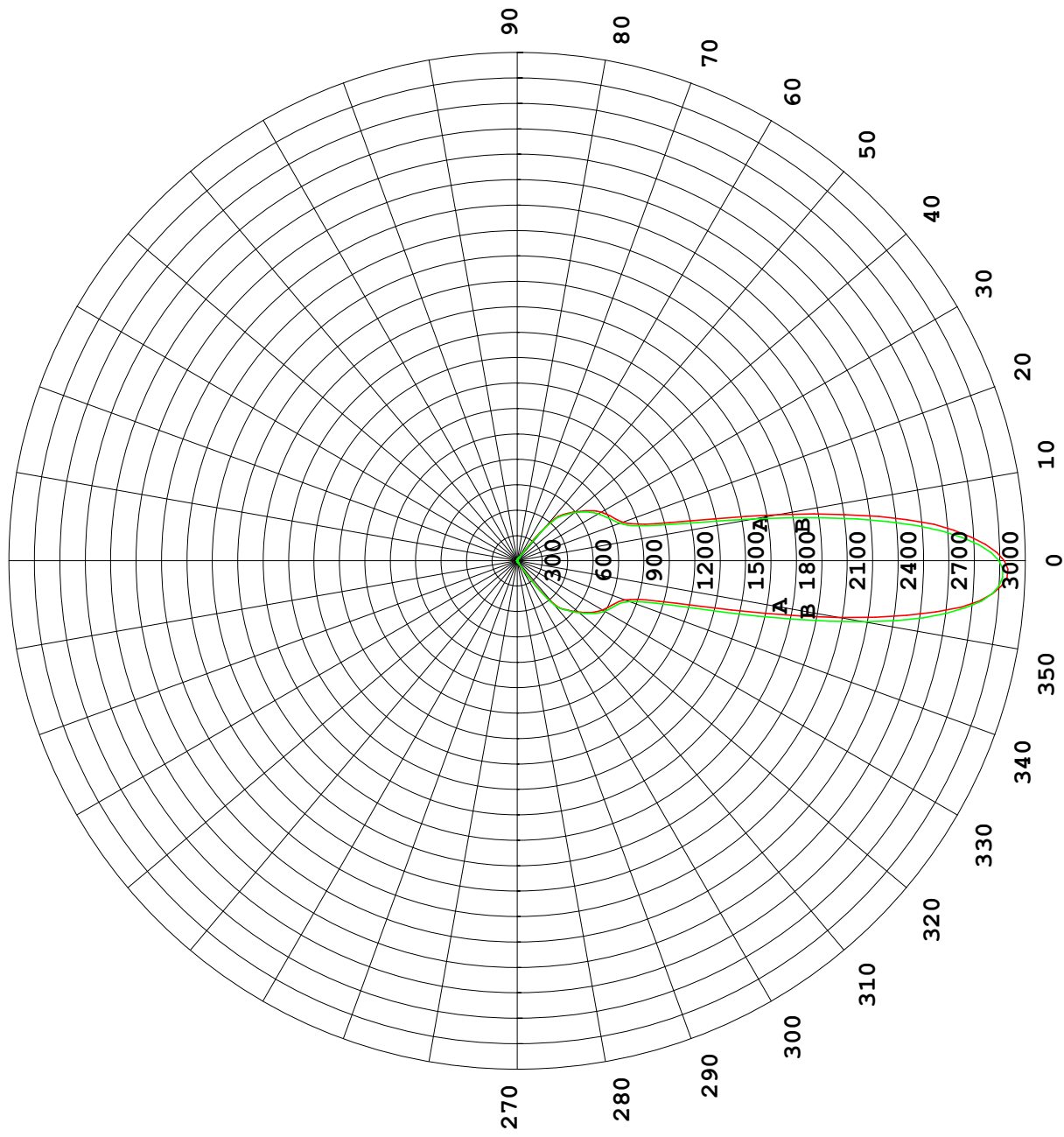
Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 30DEG
Operators:
Test Date: 2015-08-17

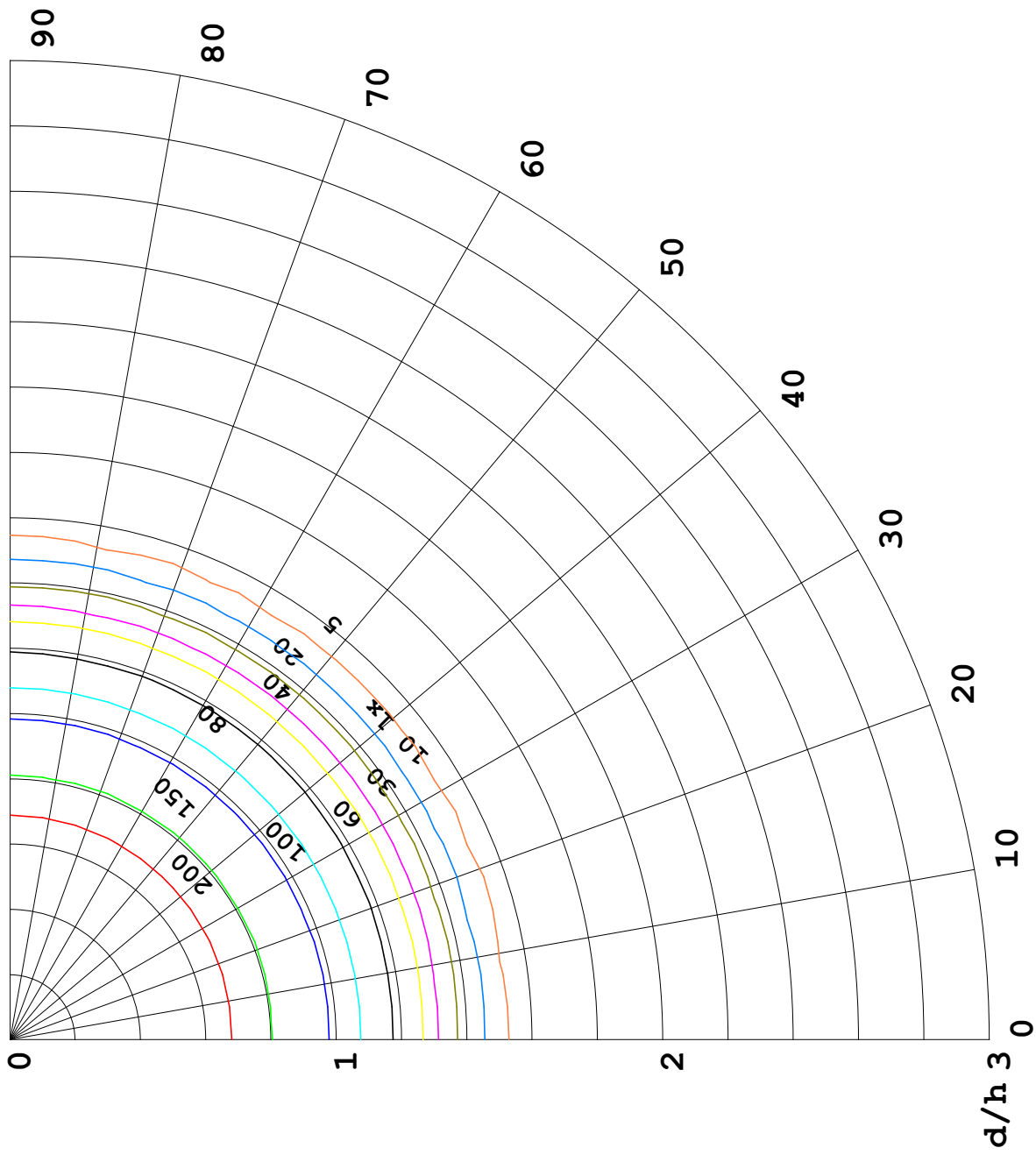
γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 9.390m [K=1.0000]
Remarks:

I (cd)



$\kappa = 1$

1000 lm



	Pcc	Pw	Pfc
————	70	50	30
————	50	30	20

