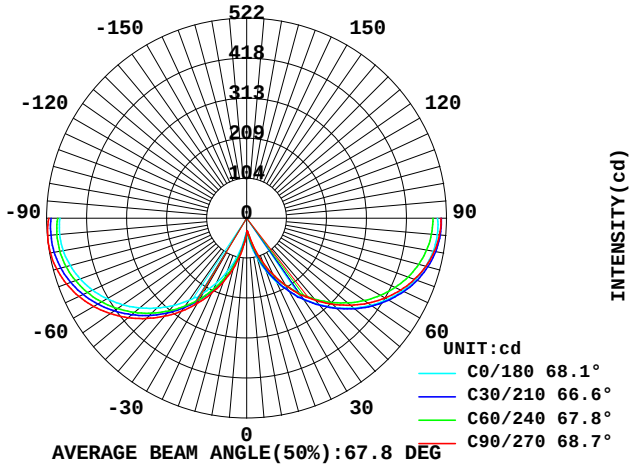
STREETLIGHT PHOTOMETRIC TEST REPORT

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

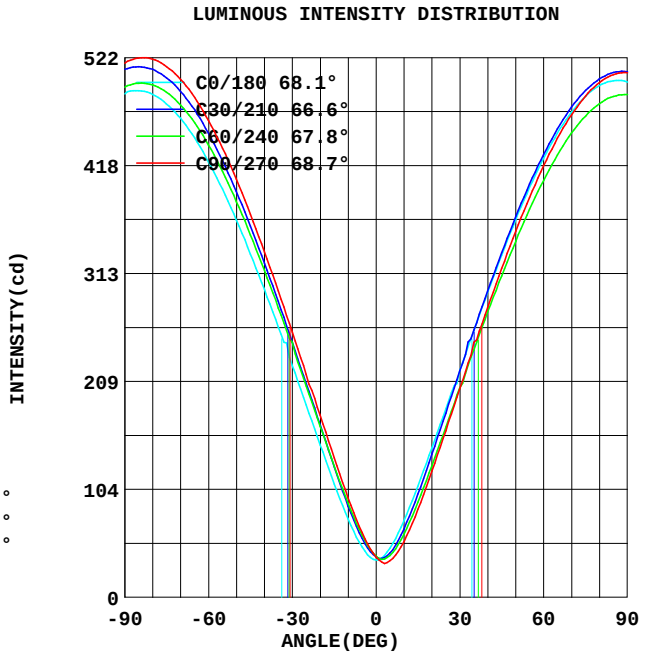
MODEL:		Imax(cd):	528.5	Effictive Flux(lm):	2435.3
NOMINAL POWER(W):	28	MAXIMUM(C, γ):	150, 84.0	EEI	0.157
RATED VOLTAGE(V):	230	EFFICIENCY(%):	147.7	Voltage(V)	230.6
NOMINAL FLUX(lm):	1650.0	η street_up(%):	0.0	Current(A)	0.131
TEST FLUX(lm):	1000	η street_down(%):	76.1	Power(W)	27.99
LAMPS QUANTITY:	1	η house_up(%)	0.0	Power Factor	0.923
TOTAL FLUX(lm):	2437	η house_down(%):	71.6	EEFICIENCY(lm/W)	87.1

INTENSITY DISTRIBUTION DIAGRAM
IN C PLANS



AVERAGE BEAM ANGLE(50%):67.8 DEG

INTENSITY DISTRIBUTION DIAGRAM
IN C PLANS



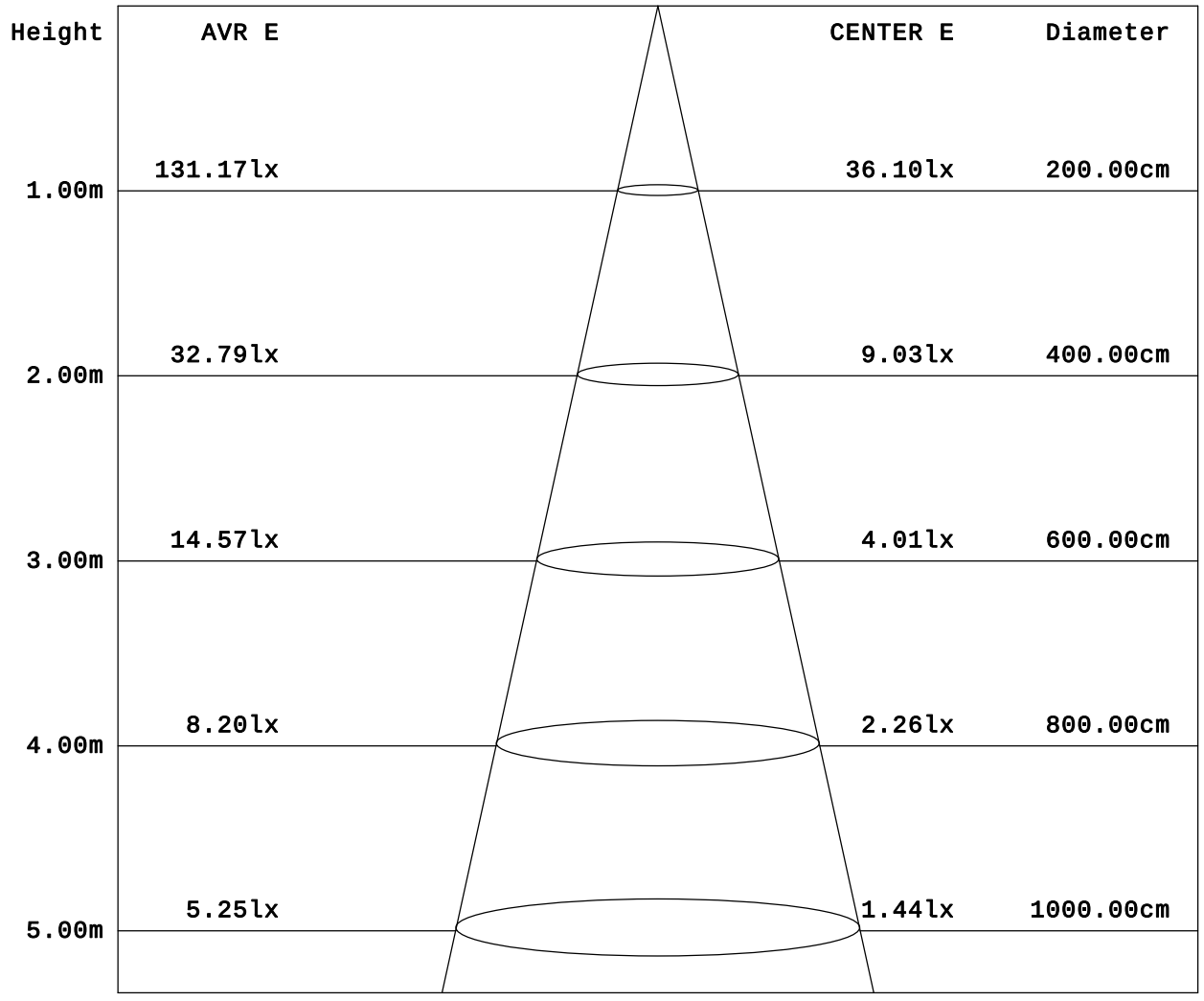
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



Angle:90.0deg

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

ZONAL FLUX DIAGRAM

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total
5.0	48.63	58.56	62.74	58.75	47.42	41.71	35.45	38.56	0- 5	1.046	1.046
10.0	75.92	89.74	96.06	90.12	74.25	63.66	53.83	59.02	5- 10	4.493	5.540
15.0	109.6	126.5	135.0	126.7	107.4	95.82	85.01	90.53	10- 15	11.06	16.60
20.0	147.3	166.1	176.2	166.3	144.4	132.9	122.2	127.6	15- 20	21.37	37.97
25.0	186.2	205.8	215.6	203.8	182.6	171.6	161.2	166.5	20- 25	35.27	73.25
30.0	224.2	246.7	256.5	248.9	219.4	210.8	201.9	206.1	25- 30	52.44	125.7
35.0	261.5	283.1	296.5	284.6	257.8	248.8	246.6	245.0	30- 35	72.60	198.3
40.0	298.1	319.8	334.2	322.4	295.4	286.3	280.1	283.0	35- 40	94.88	293.1
45.0	331.9	354.8	370.5	358.2	331.0	322.2	318.1	320.2	40- 45	118.8	412.0
50.0	364.9	387.7	404.5	392.3	365.3	356.3	354.2	355.5	45- 50	143.8	555.9
55.0	395.1	417.2	434.5	423.0	396.8	387.8	386.8	387.8	50- 55	169.0	724.9
60.0	421.0	443.3	461.2	449.8	424.7	415.8	417.6	417.4	55- 60	193.2	918.2
65.0	444.6	465.4	483.8	473.1	449.2	440.7	444.4	443.5	60- 65	215.8	1134
70.0	463.5	482.8	500.9	491.4	469.4	461.7	466.5	465.1	65- 70	235.9	1370
75.0	477.3	495.6	513.4	504.3	484.7	477.9	484.9	482.7	70- 75	252.5	1623
80.0	486.6	503.2	520.6	512.3	495.1	489.5	497.9	494.7	75- 80	265.1	1888
85.0	490.3	505.4	521.6	514.7	499.8	496.2	505.6	501.6	80- 85	273.2	2161
90.0	487.1	502.3	516.9	511.1	498.4	497.4	507.6	503.3	85- 90	276.1	2437
95.0									90- 95		
100.0									95-100		
105.0									100-105		
110.0									105-110		
115.0									110-115		
120.0									115-120		
125.0									120-125		
130.0									125-130		
135.0									130-135		
140.0									135-140		
145.0									140-145		
150.0									145-150		
155.0									150-155		
160.0									155-160		
165.0									160-165		
170.0									165-170		
175.0									170-175		
180.0									175-180		
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

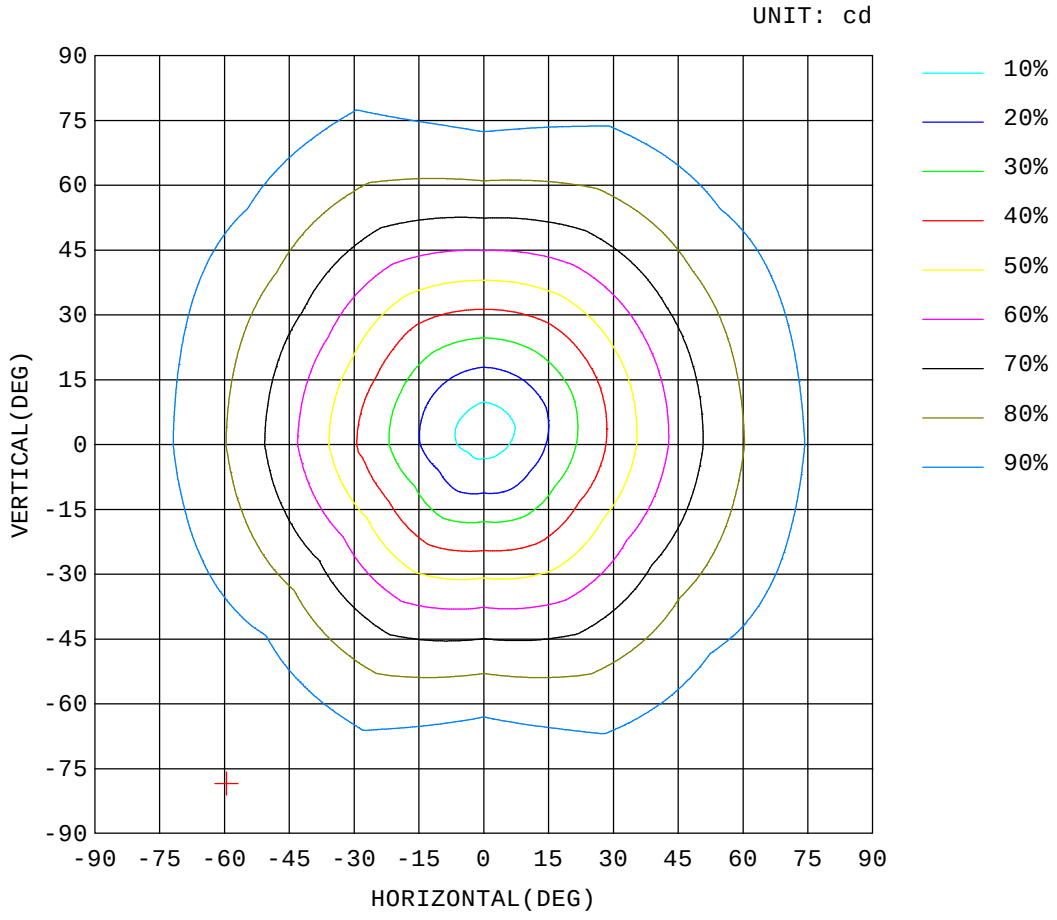
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



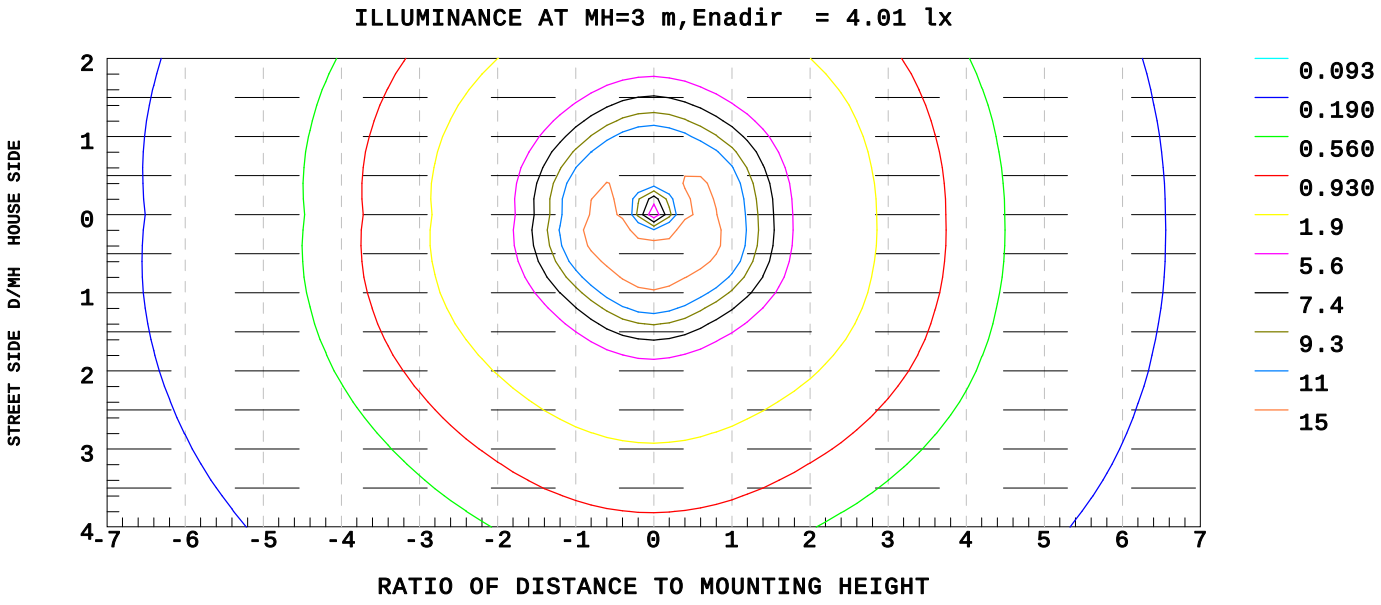
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

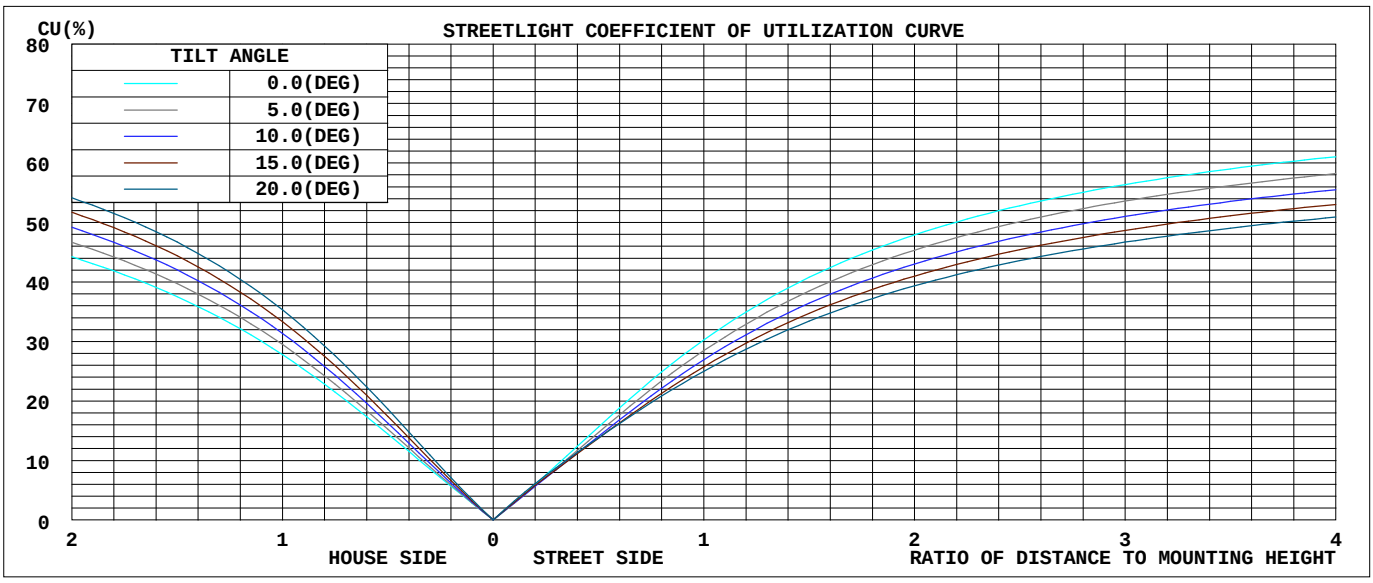
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

ISOLUX DIAGRAM

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:





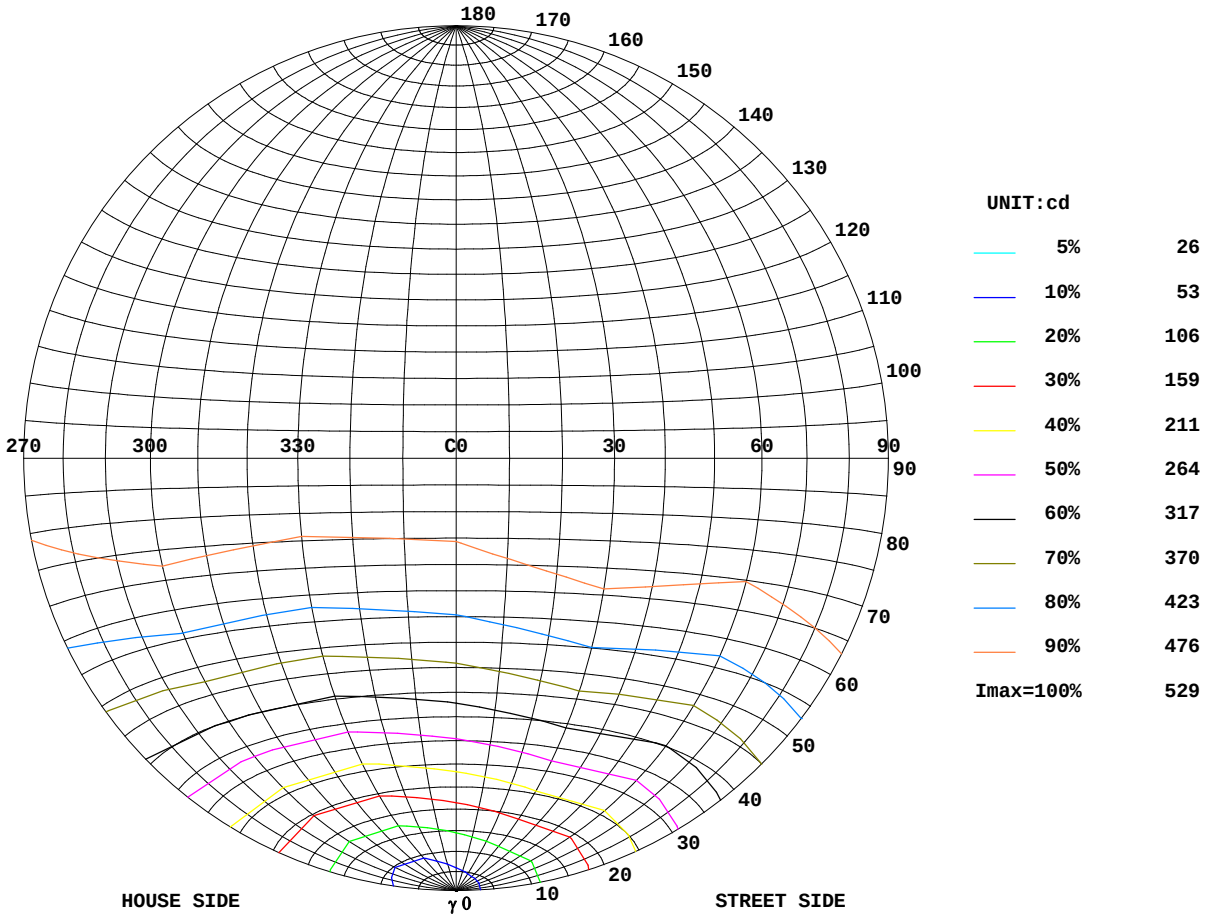
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
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ISOLUX DIAGRAM

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NAME: B22-28W	TYPE:	WEIGHT:
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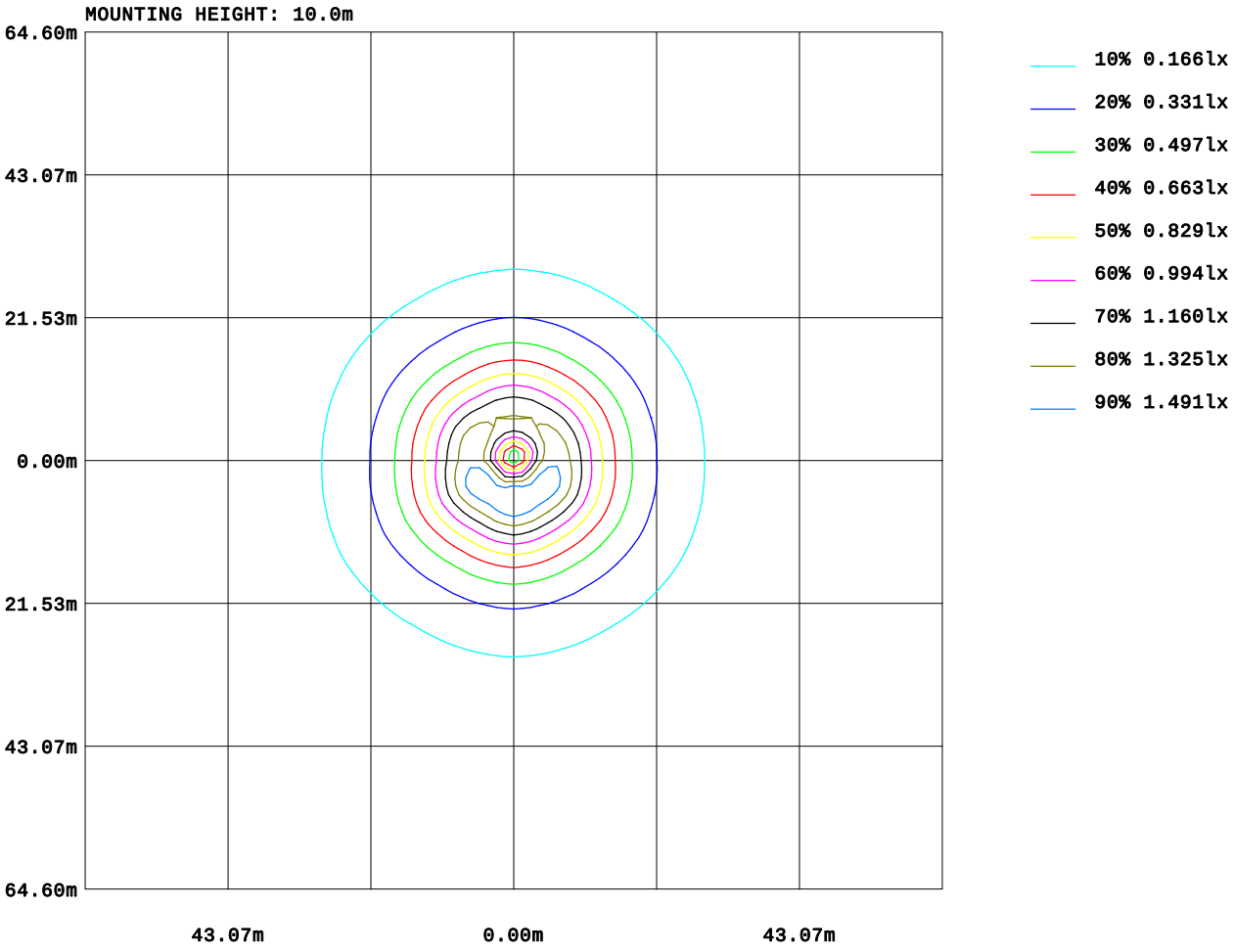


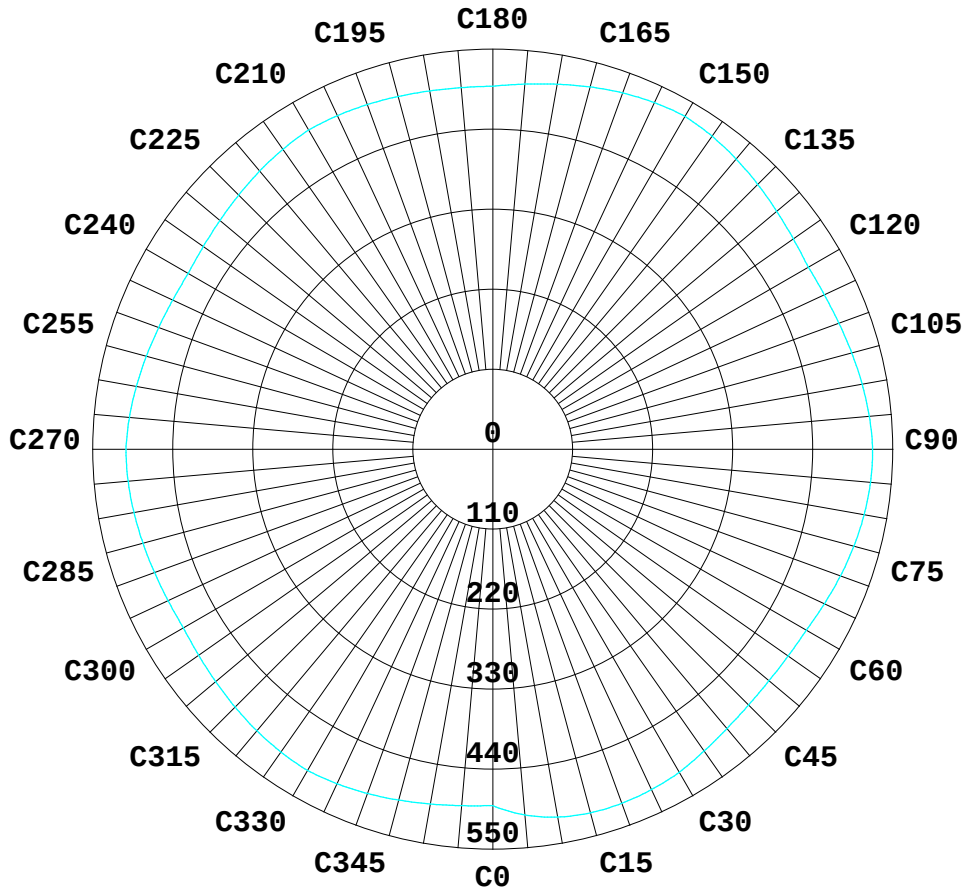
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

AREA LUMINOUS FLUX

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

AREA FLUX DIAGRAM — UNIT:lm

VERTICAL(DEG)	-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL(DEG) 20	30	40	50	60	70	80	90	Φ t	Φ a
90	1.32	3.97	6.52	8.80	10.6	12.1	13.4	14.5	15.1	15.2	14.6	13.6	12.3	10.8	8.87	6.53	3.94	1.30	174	174
80	1.33	3.96	6.49	8.72	10.5	11.8	13.0	13.9	14.5	14.6	14.1	13.1	12.0	10.6	8.78	6.50	3.94	1.31	170	170
70	1.33	3.95	6.41	8.54	10.1	11.3	12.1	12.9	13.3	13.4	13.0	12.3	11.4	10.2	8.58	6.41	3.92	1.31	161	161
60	1.32	3.93	6.30	8.29	9.67	10.5	10.9	11.4	11.6	11.7	11.4	11.0	10.5	9.70	8.29	6.29	3.90	1.30	148	148
50	1.32	3.90	6.17	7.97	9.10	9.58	9.60	9.59	9.64	9.65	9.65	9.66	9.59	9.08	7.94	6.14	3.86	1.30	134	134
40	1.32	3.86	6.03	7.61	8.51	8.62	8.19	7.66	7.40	7.40	7.67	8.16	8.54	8.43	7.57	5.99	3.83	1.30	118	118
30	1.32	3.84	5.91	7.30	7.90	7.72	6.87	5.78	5.08	5.05	5.72	6.75	7.58	7.82	7.24	5.86	3.79	1.30	103	103
	1.32	3.81	5.81	7.05	7.41	6.94	5.78	4.20	2.94	2.87	4.04	5.60	6.84	7.36	7.00	5.76	3.76	1.30	89.9	89.9
	1.32	3.80	5.76	6.91	7.14	6.48	5.09	3.26	1.63	1.55	3.17	5.09	6.52	7.14	6.88	5.70	3.74	1.29	82.5	81.1
	1.32	3.81	5.79	6.98	7.26	6.68	5.40	3.77	2.25	2.25	3.75	5.45	6.73	7.26	6.93	5.72	3.75	1.29	86.4	86.0
	1.32	3.84	5.91	7.25	7.77	7.51	6.59	5.18	4.16	4.20	5.17	6.51	7.43	7.69	7.16	5.82	3.78	1.30	98.6	98.6
-30	1.33	3.88	6.06	7.62	8.47	8.55	7.84	6.90	6.52	6.55	6.95	7.78	8.39	8.30	7.48	5.95	3.81	1.30	114	114
-40	1.33	3.93	6.23	8.04	9.21	9.50	9.21	8.86	8.90	8.92	8.91	9.18	9.35	8.98	7.85	6.10	3.85	1.30	130	130
-50	1.33	3.97	6.40	8.45	9.82	10.4	10.6	10.8	11.1	11.1	10.8	10.6	10.3	9.60	8.23	6.25	3.88	1.30	145	145
-60	1.33	4.01	6.55	8.79	10.3	11.3	11.9	12.5	13.0	13.0	12.5	11.9	11.2	10.1	8.54	6.38	3.92	1.31	159	159
-70	1.34	4.03	6.66	9.01	10.7	12.0	13.0	13.9	14.5	14.5	13.9	12.9	11.9	10.5	8.77	6.48	3.94	1.31	170	170
-80	1.34	4.04	6.72	9.12	11.0	12.4	13.6	14.7	15.4	15.4	14.7	13.6	12.3	10.8	8.88	6.53	3.95	1.31	176	176
-90	1.33	4.04	6.71	9.12	11.0	12.5	13.8	14.9	15.6	15.6	14.9	13.8	12.4	10.8	8.89	6.54	3.94	1.30	178	178
Φ t	23.9	70.6	113	146	167	176	177	175	173	173	175	177	176	165	144	111	69.5	23.5	2437	
Φ a	23.9	70.6	113	146	167	176	177	175	172	172	175	177	176	165	144	111	69.5	23.5		2435

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

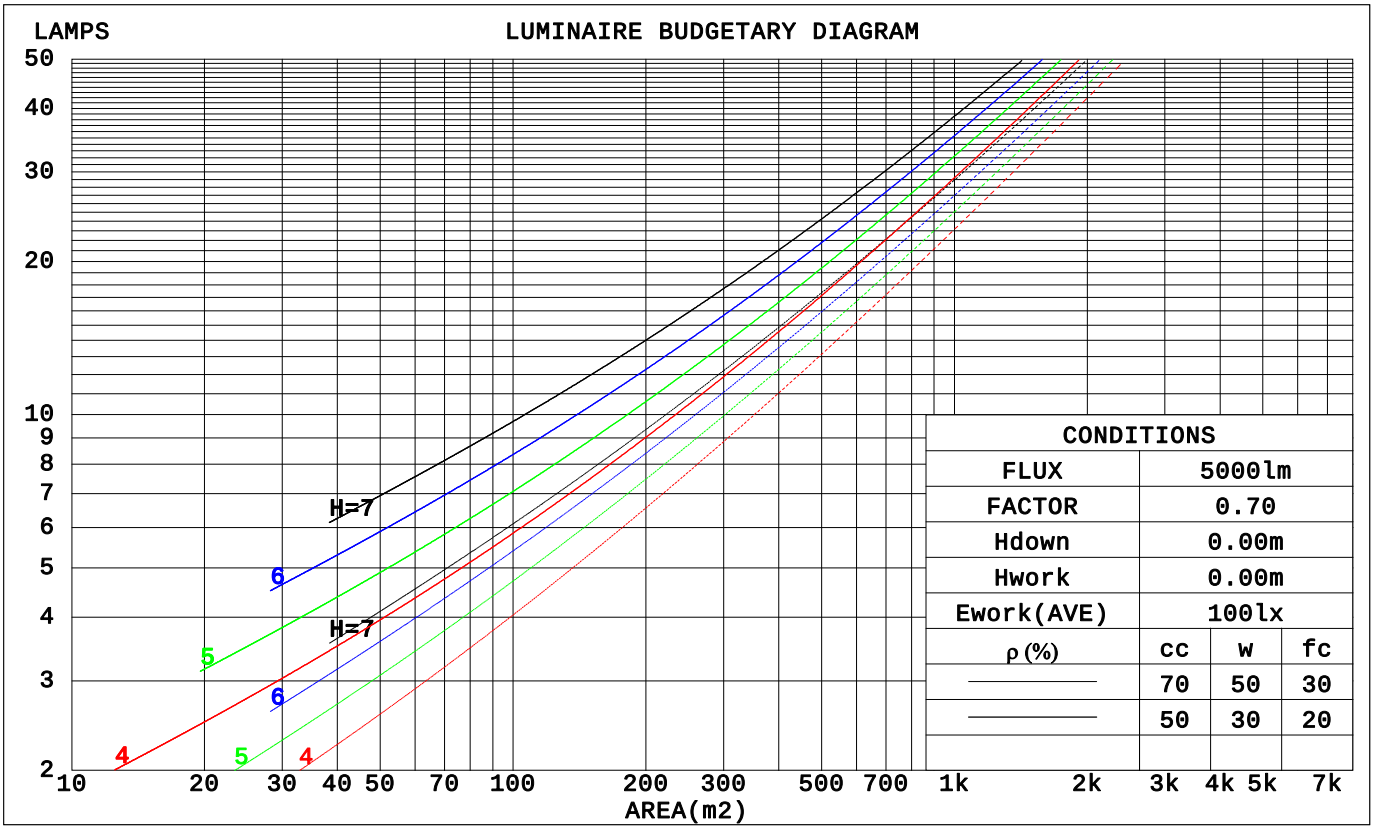
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

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	1.76	1.76	1.76	1.72	1.72	1.72	1.64	1.64	1.64	1.57	1.57	1.57	1.51	1.51	1.51	1.48
1.0	1.30	1.17	1.05	1.26	1.14	1.03	1.19	1.09	.00	1.12	1.04	.96	1.06	.00	.93	.89
2.0	1.04	.87	.73	1.01	.85	.72	.94	.81	.70	.89	.78	.68	.84	.74	.66	.61
3.0	.86	.68	.53	.83	.66	.52	.78	.63	.51	.73	.61	.50	.69	.58	.49	.44
4.0	.73	.55	.41	.71	.53	.40	.66	.51	.39	.62	.49	.38	.59	.47	.38	.33
5.0	.63	.45	.32	.61	.44	.32	.57	.43	.31	.54	.41	.31	.51	.39	.30	.26
6.0	.55	.38	.26	.54	.38	.26	.51	.36	.25	.48	.35	.25	.45	.34	.24	.21
7.0	.49	.33	.22	.48	.32	.21	.45	.31	.21	.43	.30	.21	.40	.29	.20	.17
8.0	.44	.29	.18	.43	.28	.18	.41	.27	.18	.39	.26	.18	.37	.26	.17	.14
9.0	.40	.25	.16	.39	.25	.15	.37	.24	.15	.35	.23	.15	.34	.23	.15	.12
10.0	.36	.23	.13	.36	.22	.13	.34	.22	.13	.32	.21	.13	.31	.20	.13	.10



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

WEC AND CCEC

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

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	.916	.521	.165	.904	.516	.164	.883	.506	.162	.862	.497	.160	.844	.489	.158	
2.0	.717	.393	.121	.707	.389	.120	.687	.382	.119	.669	.375	.117	.652	.369	.116	
3.0	.600	.319	.096	.590	.316	.095	.573	.310	.094	.556	.305	.093	.541	.299	.093	
4.0	.517	.269	.079	.508	.266	.079	.493	.261	.078	.478	.257	.077	.465	.252	.077	
5.0	.455	.232	.067	.447	.230	.067	.433	.226	.066	.420	.222	.066	.408	.218	.066	
6.0	.406	.203	.058	.399	.202	.058	.387	.198	.058	.376	.195	.057	.365	.192	.057	
7.0	.367	.181	.051	.361	.180	.051	.350	.177	.051	.340	.174	.051	.330	.172	.050	
8.0	.334	.163	.046	.329	.162	.046	.320	.160	.046	.311	.157	.045	.302	.155	.045	
9.0	.307	.149	.042	.303	.148	.041	.294	.145	.041	.286	.143	.041	.278	.141	.041	
10.0	.284	.136	.038	.280	.135	.038	.272	.133	.038	.265	.132	.037	.258	.130	.037	

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	.281	.281	.281	.240	.240	.240	.164	.164	.164	.094	.094	.094	.030	.030	.030	
1.0	.298	.227	.162	.255	.194	.140	.174	.134	.097	.100	.077	.056	.032	.025	.018	
2.0	.293	.193	.110	.251	.167	.095	.172	.115	.066	.099	.067	.039	.032	.022	.013	
3.0	.282	.170	.081	.241	.147	.071	.166	.102	.049	.096	.060	.029	.031	.019	.010	
4.0	.268	.152	.064	.230	.132	.056	.158	.092	.039	.092	.054	.023	.029	.018	.008	
5.0	.254	.138	.053	.219	.120	.046	.151	.084	.032	.087	.049	.019	.028	.016	.006	
6.0	.241	.127	.045	.207	.110	.039	.143	.077	.028	.083	.045	.016	.027	.015	.005	
7.0	.228	.117	.039	.196	.101	.034	.135	.071	.024	.079	.042	.014	.025	.014	.005	
8.0	.215	.108	.035	.185	.094	.030	.128	.066	.021	.075	.039	.013	.024	.013	.004	
9.0	.204	.101	.031	.176	.087	.027	.122	.062	.019	.071	.036	.012	.023	.012	.004	
10.0	.193	.094	.029	.166	.082	.025	.115	.058	.018	.067	.034	.011	.022	.011	.003	

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

Uncorrected UGR Table

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

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	20.0	22.1	20.3	22.3	22.6	20.2	22.3	20.5	22.5	22.7
	3H	23.7	25.7	24.1	25.9	26.2	24.0	25.9	24.3	26.2	26.5
	4H	25.8	27.6	26.1	27.9	28.2	26.0	27.9	26.4	28.2	28.5
	6H	28.0	29.8	28.3	30.1	30.4	28.3	30.1	28.7	30.4	30.7
	8H	29.2	31.0	29.6	31.3	31.6	29.5	31.3	29.9	31.6	31.9
	12H	30.6	32.3	31.0	32.6	33.0	30.9	32.6	31.3	33.0	33.3
4H	2H	21.3	23.2	21.7	23.5	23.8	21.4	23.3	21.8	23.6	23.9
	3H	25.1	26.8	25.5	27.2	27.5	25.2	26.9	25.6	27.3	27.6
	4H	27.3	28.9	27.7	29.2	29.6	27.4	29.0	27.8	29.4	29.8
	6H	29.6	31.1	30.1	31.5	31.9	29.8	31.3	30.3	31.7	32.1
	8H	30.9	32.4	31.4	32.7	33.2	31.2	32.6	31.6	33.0	33.4
	12H	32.4	33.7	32.9	34.2	34.6	32.7	34.0	33.1	34.4	34.8
8H	4H	28.2	29.6	28.6	30.0	30.4	28.3	29.7	28.7	30.1	30.5
	6H	30.8	32.1	31.3	32.5	32.9	30.9	32.2	31.4	32.6	33.0
	8H	32.3	33.5	32.8	33.9	34.4	32.4	33.6	32.9	34.0	34.5
	12H	34.0	35.0	34.5	35.5	36.0	34.2	35.2	34.7	35.7	36.2
12H	4H	28.4	29.8	28.9	30.2	30.6	28.5	29.9	29.0	30.3	30.7
	6H	31.2	32.3	31.7	32.8	33.3	31.3	32.4	31.8	32.9	33.4
	8H	32.8	33.9	33.3	34.3	34.8	32.9	34.0	33.4	34.4	34.9
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 1650 lm Total Lamp Luminous Flux.(8log(F/F0) = 1.7)

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

UTILIZATION FACTORS TABLE

Report number:

MANUFACTURER: PUFA	Address:	
NAME: B22-28W	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

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	59	38	24	58	37	24	56	36	24	12
0.80	71	48	34	70	48	33	66	46	33	19
1.00	82	59	43	80	58	43	76	62	42	27
1.25	93	69	53	90	68	52	85	65	51	35
1.50	101	77	61	97	76	60	92	73	59	42
2.00	113	91	75	109	89	74	102	85	72	55
2.50	121	101	85	117	98	84	110	94	81	64
3.00	128	109	94	124	106	92	116	101	89	72
4.00	137	120	107	132	117	105	124	112	101	83
5.00	142	128	116	138	125	113	130	119	109	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004	Suspended								SHRNOM = 1.25	

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2015年01月13日

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:7.500 m
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

MANUFACTURER: PUFA	**Address:**	
NAME: B22-28W	**TYPE:**	**WEIGHT:**
SPECIFICATION:	**DIMENSION:**	**SERIAL No.:**

UNIT: cd

γ (DEG) \ C(DEG)	0	30	60	90	120	150	180	210	240	270	300	330
0.0	36.1	39.0	39.9	38.9	38.3	38.1	36.1	39.0	39.9	38.9	38.3	38.1
5.0	48.6	57.1	59.9	62.7	58.5	58.9	47.4	42.8	40.5	35.4	37.2	39.9
10.0	75.9	88.2	91.2	96.0	89.2	90.9	74.2	66.0	61.2	53.8	57.1	60.8
15.0	110	126	127	135	124	129	107	99.9	91.6	85.0	87.7	93.3
20.0	147	167	165	176	162	170	144	139	127	122	124	131
25.0	186	207	205	216	201	206	183	178	165	161	163	170
30.0	224	247	247	257	247	251	219	219	203	202	201	211
35.0	262	286	280	297	278	292	258	258	239	247	239	251
40.0	298	323	316	334	315	330	295	296	276	280	277	289
45.0	332	359	350	371	349	367	331	334	311	318	313	327
50.0	365	393	383	405	382	402	365	368	344	354	348	363
55.0	395	422	412	435	412	434	397	400	376	387	380	396
60.0	421	449	438	461	438	462	425	429	403	418	409	426
65.0	445	472	459	484	461	486	449	453	428	444	434	453
70.0	464	489	476	501	479	504	469	474	449	467	456	474
75.0	477	503	489	513	491	518	485	490	466	485	474	492
80.0	487	511	496	521	499	526	495	502	478	498	486	504
85.0	490	513	497	522	501	528	500	508	485	506	492	511
90.0	487	511	494	517	497	525	498	509	486	508	495	512

Test System:HOPOO HPG1800 **Test Set: 5.0deg/s C-Gamma (TYPE C)**
Temperature:25.3DEG **Humidity:65.0%**
Operators: **Test Distance:7.500 m**
Test Date:2015年01月13日 **Remarks:**