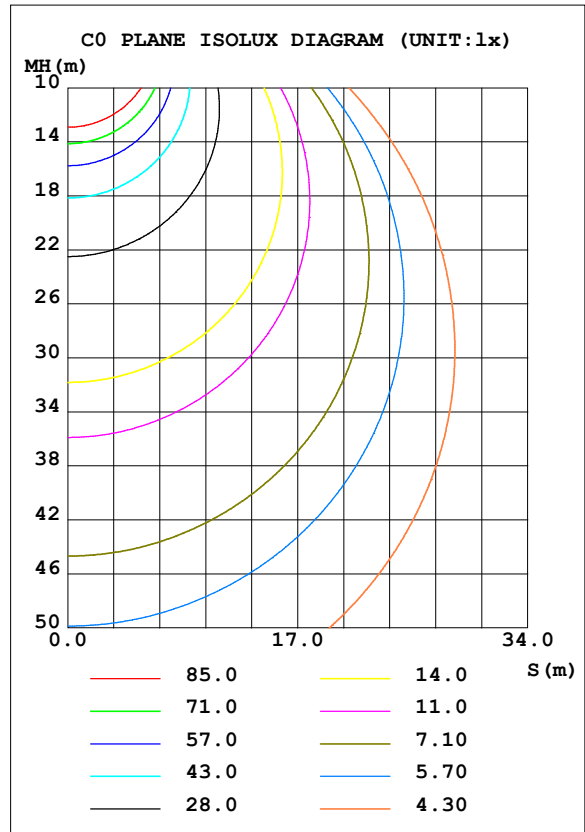
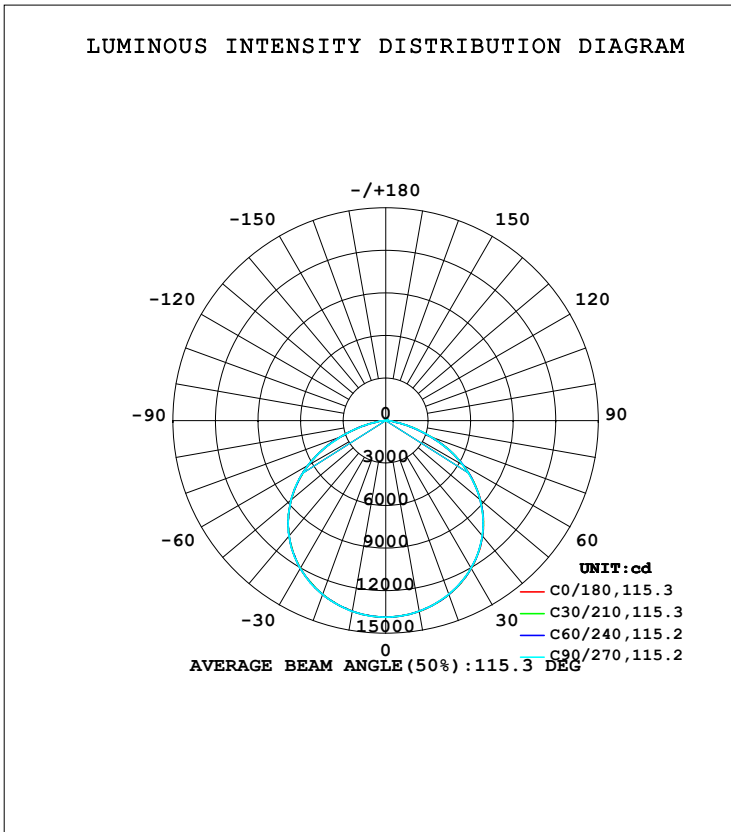


**LUMINAIRE PHOTOMETRIC TEST REPORT**

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 170.89 lm/W			
MODEL	HBUD2-50K240LSD	I <sub>max</sub> (cd)	13862	S/MH (C0/180)	1.29
NOMINAL POWER (W)	240	LOR (%)	100.0	S/MH (C90/270)	1.29
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	39965	η UP, DN (C0-180)	0.5, 49.5
NOMINAL FLUX (lm)	39965.4	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.6, 49.4
LAMPS INSIDE	1	η up (%)	1.1	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	98.9	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: C  
 Test Date: 07 January 2022

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity: 65.0%  
 Test Distance: 8.000m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	1365	1365	1364	1364	1364	1364	1365	1365	0- 10	1313	1313	3.29,3.29
20	1305	1306	1303	1304	1304	1303	1305	1305	10- 20	3782	5095	12.7,12.7
30	1205	1206	1203	1204	1203	1202	1205	1204	20- 30	5806	10902	27.3,27.3
40	1062	1064	1059	1061	1061	1059	1063	1061	30- 40	7119	18021	45.1,45.1
50	871.7	874.3	868.9	870.8	870.8	866.8	872.5	869.2	40- 50	7489	25509	63.8,63.8
60	633.4	636.0	629.8	631.6	632.7	626.5	633.3	628.9	50- 60	6757	32266	80.7,80.7
70	344.0	346.8	340.3	342.3	343.8	337.3	342.5	339.3	60- 70	4863	37129	92.9,92.9
80	80.47	83.55	80.44	81.42	81.53	78.22	81.41	79.35	70- 80	2144	39273	98.3,98.3
90	1.273	1.248	1.261	1.247	1.571	1.579	1.551	1.556	80- 90	254.8	39528	98.9,98.9
100	2.641	2.615	2.633	2.626	3.032	3.041	3.002	3.005	90-100	22.46	39550	99,99
110	4.544	4.513	4.544	4.528	4.993	5.007	4.955	4.960	100-110	39.69	39590	99.1,99.1
120	6.563	6.553	6.582	6.573	7.048	7.047	7.002	7.000	110-120	57.25	39647	99.2,99.2
130	8.395	8.408	8.434	8.431	8.890	8.880	8.848	8.843	120-130	69.24	39717	99.4,99.4
140	9.970	10.01	10.03	10.02	10.49	10.45	10.43	10.42	130-140	73.06	39790	99.6,99.6
150	11.33	11.38	11.38	11.38	11.81	11.76	11.74	11.73	140-150	68.33	39858	99.7,99.7
160	12.63	12.67	12.66	12.67	12.99	12.92	12.92	12.90	150-160	56.25	39914	99.9,99.9
170	13.82	13.85	13.82	13.81	14.00	13.93	13.93	13.91	160-170	37.69	39952	100,100
180	14.57	14.60	14.51	14.55	14.64	14.56	14.55	14.52	170-180	13.51	39965	100,100
DEG	LUMINOUS INTENSITY:X10cd									UNIT:lm		

Conical surface Flux(90deg): 21785 lm

%lum = 54.5%

%lamp = 54.5%

Conical surface Flux(130deg): 35006 lm

%lum = 87.6%

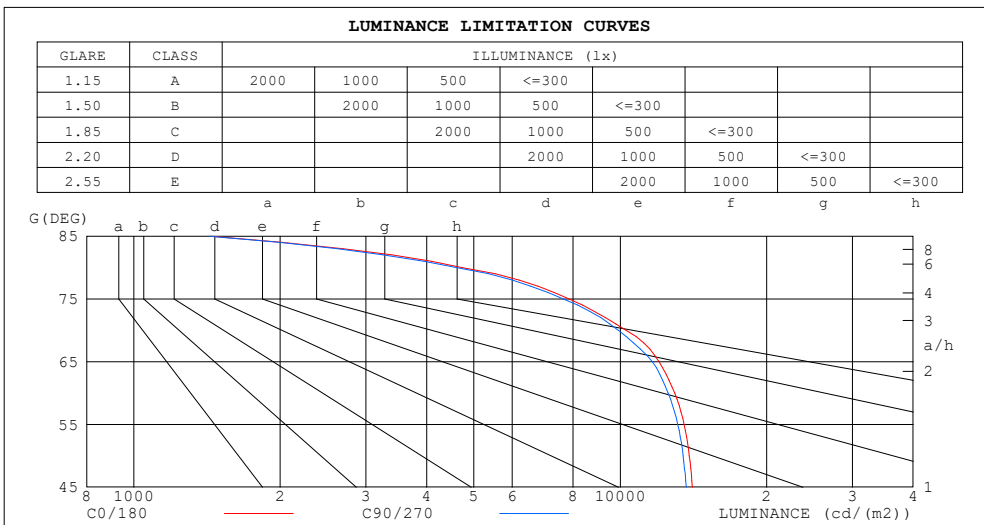
%lamp = 87.6%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1444	1432
80	4737	4615
75	7850	7646
70	10284	9914
65	12019	11646
60	12950	12550
55	13535	13135
50	13865	13468
45	14071	13665

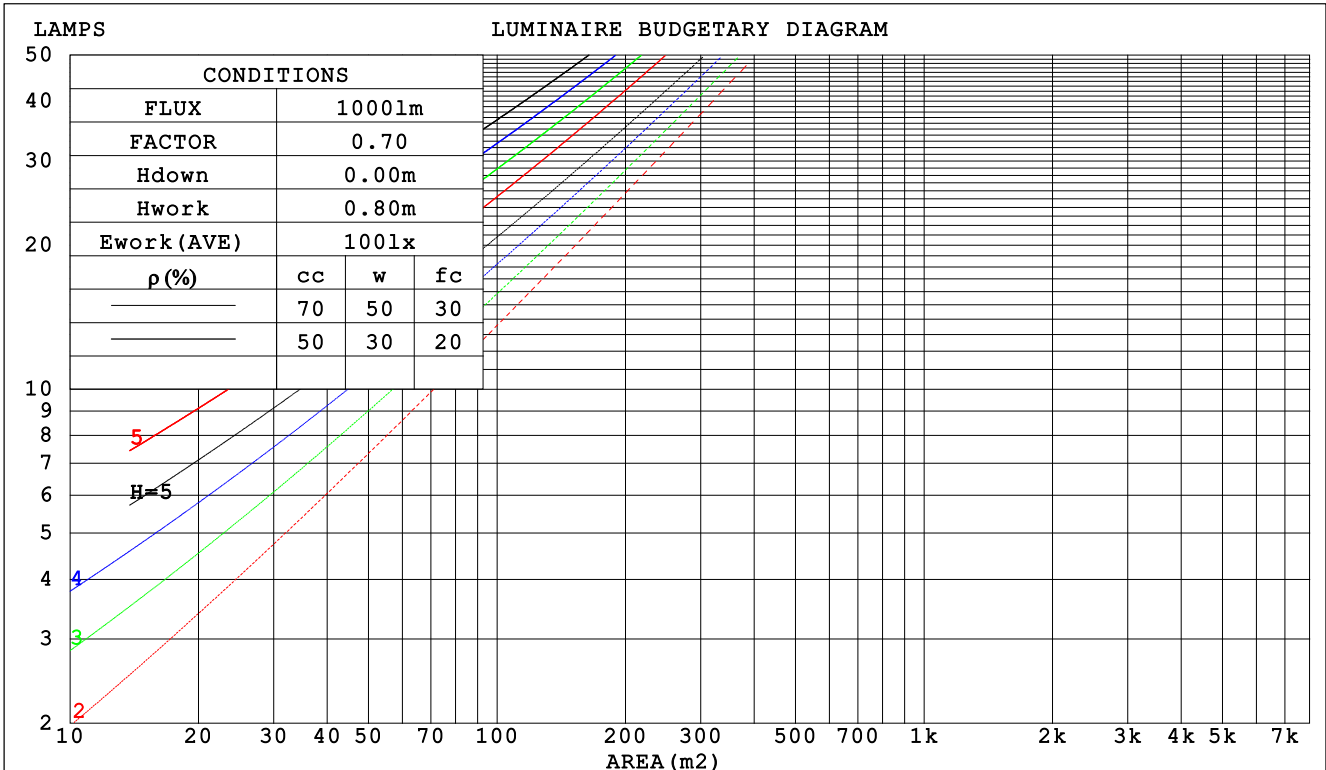
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γInterval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	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	1.11	1.11	1.11	1.06	1.06	1.06	1.01	1.01	1.01	.99
1.0	1.05	1.01	.97	1.02	.99	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.85	.79	.89	.83	.78	.86	.81	.76	.82	.78	.74	.79	.76	.73	.70
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.67	.63	.70	.65	.62	.59
4.0	.71	.63	.56	.70	.62	.55	.67	.60	.55	.65	.59	.54	.62	.57	.53	.51
5.0	.64	.55	.48	.62	.54	.48	.60	.53	.47	.58	.52	.46	.56	.50	.46	.44
6.0	.57	.48	.42	.56	.48	.42	.54	.47	.41	.52	.46	.41	.51	.45	.40	.38
7.0	.52	.43	.37	.51	.43	.37	.49	.42	.36	.48	.41	.36	.46	.40	.36	.34
8.0	.47	.39	.33	.46	.38	.33	.45	.38	.32	.44	.37	.32	.42	.36	.32	.30
9.0	.43	.35	.29	.43	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.40	.32	.27	.39	.32	.27	.38	.31	.26	.37	.31	.26	.36	.30	.26	.24



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz		
Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	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 Coefficients (WEC)									
0.0																
1.0	.290	.165	.052	.282	.161	.051	.269	.154	.049	.256	.148	.047	.244	.142	.046	
2.0	.279	.153	.047	.273	.150	.046	.261	.145	.045	.250	.140	.044	.239	.135	.043	
3.0	.262	.139	.042	.256	.137	.041	.245	.133	.040	.235	.129	.040	.226	.125	.039	
4.0	.244	.127	.037	.239	.125	.037	.229	.121	.036	.220	.118	.036	.212	.115	.035	
5.0	.226	.115	.033	.222	.114	.033	.213	.111	.033	.205	.108	.032	.198	.106	.032	
6.0	.211	.106	.030	.207	.104	.030	.199	.102	.030	.192	.100	.029	.185	.098	.029	
7.0	.197	.097	.028	.193	.096	.027	.186	.094	.027	.180	.092	.027	.174	.090	.027	
8.0	.184	.090	.025	.181	.089	.025	.175	.087	.025	.169	.086	.025	.163	.084	.024	
9.0	.173	.084	.023	.170	.083	.023	.164	.081	.023	.159	.080	.023	.154	.078	.023	
10.0	.163	.078	.022	.160	.077	.022	.155	.076	.021	.150	.075	.021	.146	.073	.021	

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	.199	.199	.199	.170	.170	.170	.116	.116	.116	.067	.067	.067	.021	.021	.021	
1.0	.187	.165	.144	.160	.141	.124	.110	.097	.086	.063	.056	.050	.020	.018	.016	
2.0	.179	.140	.108	.153	.121	.093	.105	.084	.065	.061	.049	.038	.019	.016	.012	
3.0	.171	.123	.084	.147	.106	.073	.101	.074	.051	.058	.043	.030	.019	.014	.010	
4.0	.164	.109	.068	.141	.095	.059	.097	.066	.041	.056	.039	.025	.018	.013	.008	
5.0	.157	.099	.056	.135	.086	.049	.093	.060	.035	.054	.035	.021	.017	.011	.007	
6.0	.150	.091	.048	.129	.079	.042	.089	.055	.030	.052	.032	.018	.017	.011	.006	
7.0	.143	.084	.042	.123	.073	.037	.085	.051	.026	.049	.030	.015	.016	.010	.005	
8.0	.137	.078	.038	.118	.068	.033	.082	.048	.023	.047	.028	.014	.015	.009	.005	
9.0	.131	.073	.034	.113	.063	.030	.078	.045	.021	.046	.026	.013	.015	.009	.004	
10.0	.125	.069	.031	.108	.060	.027	.075	.042	.019	.044	.025	.012	.014	.008	.004	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γInterval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz										
Lamp Flux:39965.4x1 lm										
NAME: HBUD2-50K240LSD					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	21.4	23.0	21.8	23.3	23.7	21.2	22.8	21.6	23.1	23.5
3H	22.9	24.4	23.3	24.7	25.1	22.7	24.1	23.1	24.5	24.9
4H	23.4	24.7	23.8	25.1	25.5	23.1	24.5	23.5	24.8	25.2
6H	23.5	24.8	24.0	25.2	25.6	23.3	24.5	23.7	24.9	25.3
8H	23.5	24.7	24.0	25.1	25.6	23.3	24.5	23.7	24.9	25.3
12H	23.5	24.7	24.0	25.1	25.5	23.3	24.4	23.7	24.8	25.3
4H 2H	22.0	23.3	22.4	23.7	24.1	21.8	23.1	22.2	23.5	23.9
3H	23.7	24.8	24.1	25.2	25.6	23.4	24.6	23.9	25.0	25.4
4H	24.2	25.2	24.6	25.6	26.1	23.9	24.9	24.4	25.4	25.8
6H	24.4	25.3	24.9	25.7	26.2	24.2	25.0	24.6	25.5	26.0
8H	24.4	25.2	24.9	25.7	26.2	24.2	25.0	24.6	25.5	25.9
12H	24.4	25.1	24.9	25.6	26.1	24.2	24.9	24.7	25.4	25.9
8H 4H	24.3	25.1	24.8	25.6	26.1	24.1	24.9	24.6	25.4	25.9
6H	24.6	25.3	25.1	25.8	26.3	24.3	25.0	24.9	25.5	26.0
8H	24.6	25.2	25.1	25.7	26.3	24.4	25.0	24.9	25.5	26.0
12H	24.6	25.2	25.1	25.7	26.3	24.4	24.9	24.9	25.4	26.0
12H 4H	24.3	25.0	24.8	25.5	26.0	24.1	24.8	24.6	25.3	25.8
6H	24.6	25.2	25.1	25.7	26.2	24.3	24.9	24.9	25.4	26.0
8H	24.6	25.2	25.2	25.7	26.3	24.4	24.9	24.9	25.4	26.0
CIE190: 2010										

CIE190: 2010  
Area: 1 m2

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:C  
Test Date:07 January 2022

γ Range: 0 - 180DEG  
γInterval: 1.0DEG  
Test System: GO-2000A\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:8.000m [K=1.0000]  
Remarks:

## UTILIZATION FACTORS TABLE

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

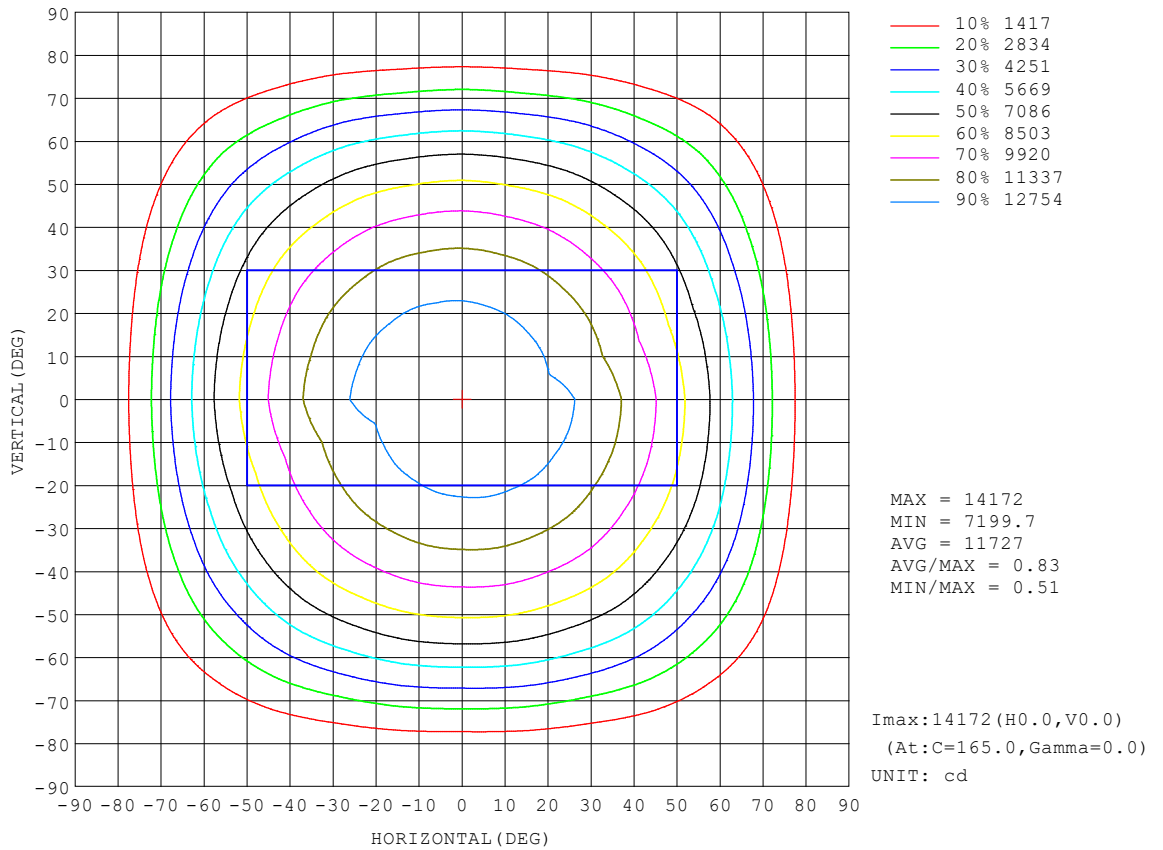
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	46	39	57	46	39	56	45	39	32
0.80	68	56	49	67	56	49	65	55	48	41
1.00	76	66	58	75	65	58	73	66	57	50
1.25	84	73	66	82	73	66	79	71	65	58
1.50	89	79	72	87	78	72	84	76	71	63
2.00	96	87	81	94	86	80	90	84	79	71
2.50	100	92	86	97	91	85	93	88	83	75
3.00	103	96	91	101	95	90	96	92	88	79
4.00	107	101	97	104	100	95	100	96	93	84
5.00	109	105	101	107	103	99	102	99	96	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

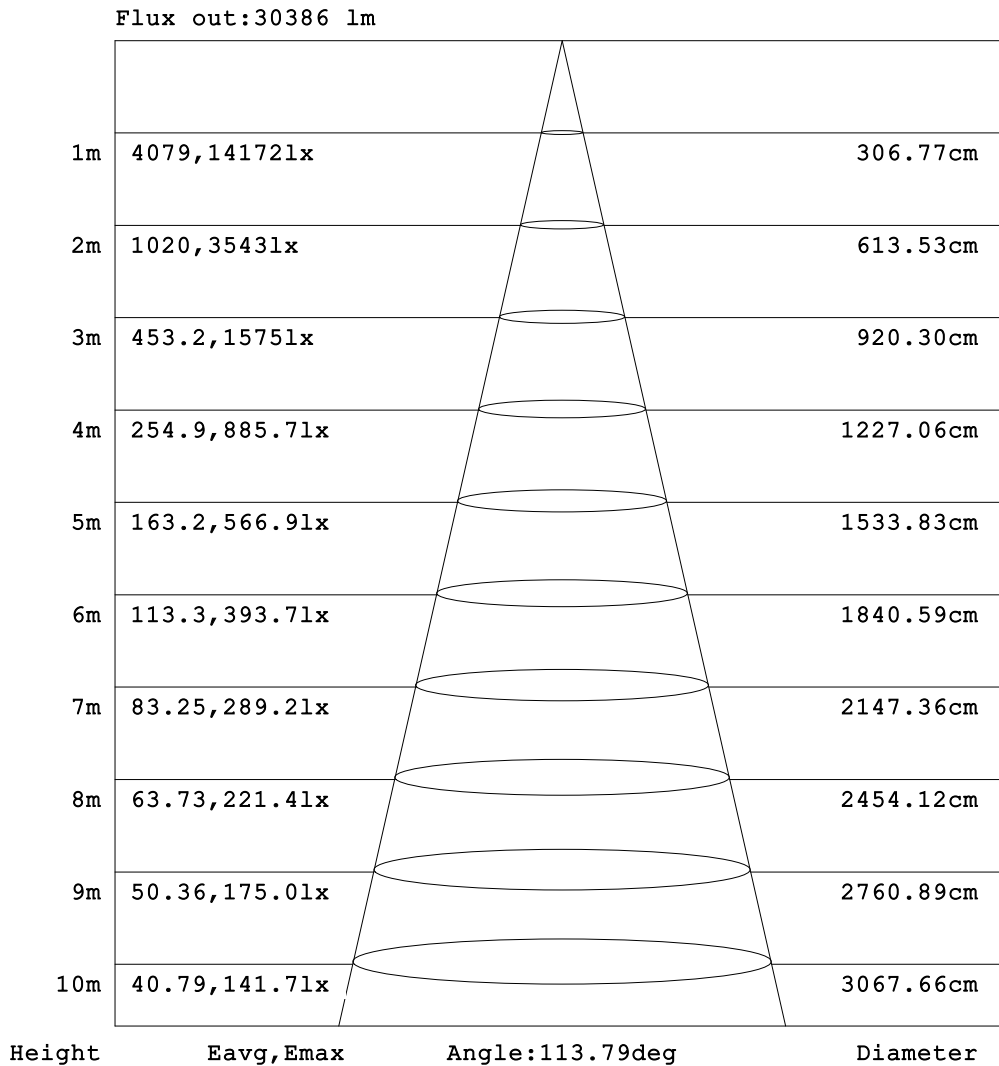


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

**AAI Figure**

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



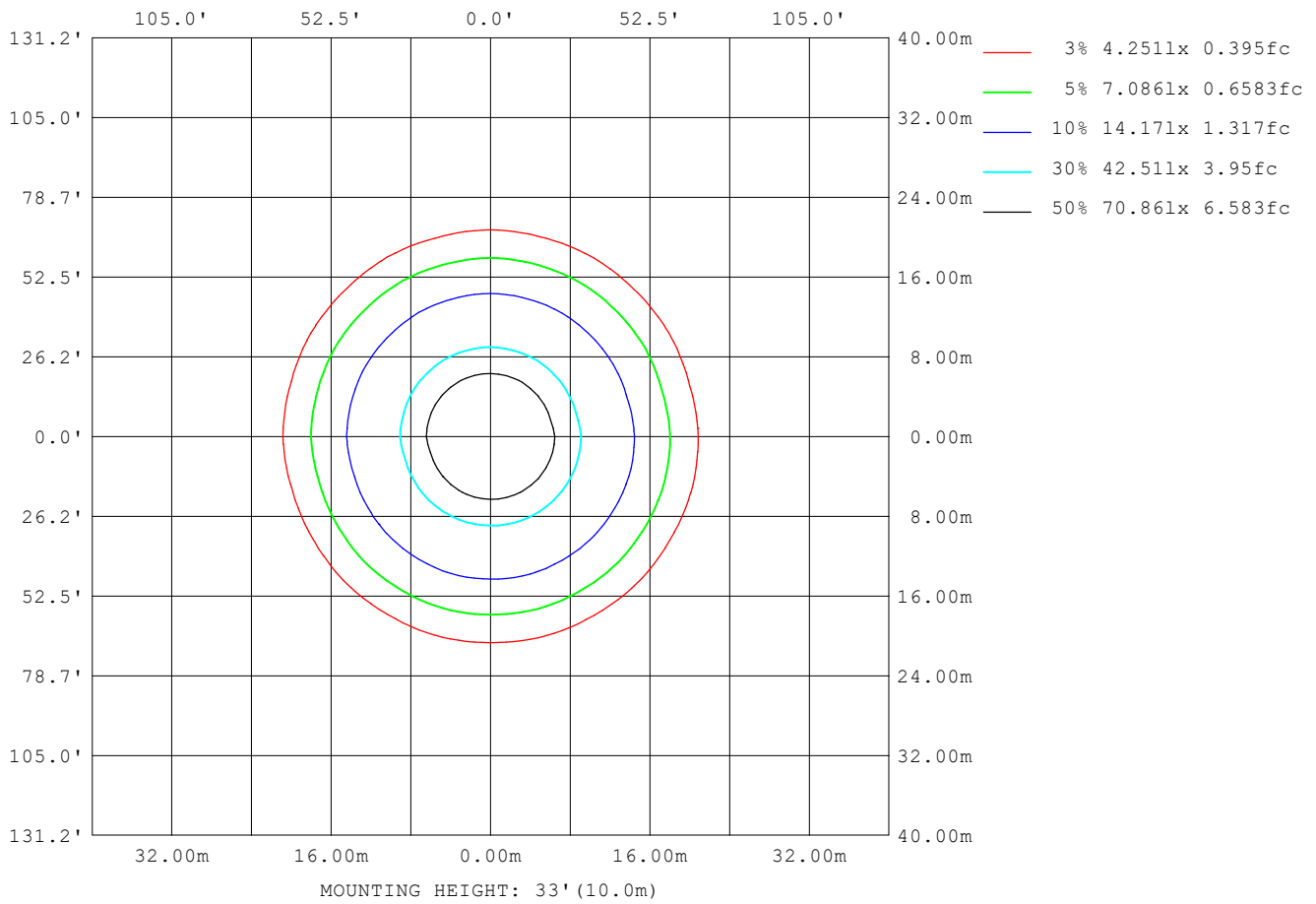
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γInterval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

ISOLUX DIAGRAM

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γInterval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

## LED Avg.L Report

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

AvgL	cd/m2
L_0~180 (65) av	11752
L_0~180 (75) av	7704
L_0~180 (85) av	1443
L_90~270 (65) av	11727
L_90~270 (75) av	7714
L_90~270 (85) av	1467
L_45 (65) av	11712
L_45 (75) av	7696
L_45 (85) av	1585

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:C  
Test Date:07 January 2022

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: GO-2000A\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:8.000m [K=1.0000]  
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--1

UNIT: X10cd

C (DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386	1386
5	1381	1381	1381	1381	1381	1381	1381	1381	1380	1381	1380	1381	1381	1380	1381	1381	1381	1381	1381
10	1365	1366	1365	1365	1364	1365	1364	1365	1364	1364	1364	1364	1364	1364	1365	1364	1365	1364	1365
15	1340	1341	1339	1340	1339	1339	1338	1339	1338	1339	1338	1338	1339	1338	1339	1338	1340	1338	1340
20	1305	1306	1304	1306	1304	1305	1303	1304	1303	1304	1302	1304	1304	1302	1304	1303	1305	1303	1305
25	1260	1262	1259	1261	1259	1261	1258	1260	1258	1259	1257	1259	1259	1257	1259	1258	1260	1258	1260
30	1205	1207	1204	1206	1203	1205	1203	1204	1202	1204	1201	1203	1203	1201	1204	1202	1205	1203	1205
35	1139	1141	1138	1140	1137	1140	1137	1139	1136	1138	1135	1137	1138	1136	1138	1136	1139	1137	1140
40	1062	1065	1061	1064	1060	1063	1059	1062	1059	1061	1057	1060	1061	1058	1062	1059	1062	1060	1063
45	973	976	972	975	970	974	970	973	969	972	968	971	972	969	972	969	973	969	973
50	872	876	871	874	869	873	869	872	868	871	866	870	871	866	872	867	872	867	873
55	759	764	758	762	757	761	756	760	755	758	753	757	759	753	759	754	760	754	760
60	633	638	632	636	631	635	630	634	629	632	626	630	633	626	633	626	633	626	633
65	497	502	496	500	495	499	494	498	493	496	490	495	496	490	497	491	498	490	497
70	344	350	342	347	340	347	340	344	338	342	335	339	344	339	344	337	343	336	342
75	199	204	200	205	197	204	199	203	196	200	194	198	200	195	201	195	200	195	201
80	80.5	84.6	80.6	83.6	80.0	83.8	80.4	83.5	79.3	81.4	77.3	79.0	81.5	78.0	81.7	78.2	81.5	78.0	81.4
85	12.3	13.6	12.4	13.4	12.1	13.6	12.5	13.5	14.7	12.8	13.8	11.8	12.8	13.9	12.7	14.1	12.6	14.1	13.0
90	1.27	1.25	1.27	1.25	1.27	1.24	1.26	1.24	1.26	1.25	1.27	1.26	1.57	1.59	1.56	1.58	1.55	1.57	1.55
95	1.87	1.85	1.87	1.85	1.87	1.84	1.86	1.84	1.87	1.85	1.88	1.86	2.22	2.24	2.21	2.23	2.20	2.22	2.19
100	2.64	2.62	2.64	2.62	2.64	2.61	2.63	2.61	2.64	2.63	2.66	2.64	3.03	3.05	3.02	3.04	3.01	3.03	3.00
105	3.55	3.52	3.54	3.52	3.54	3.51	3.54	3.52	3.55	3.53	3.57	3.54	3.97	4.00	3.96	3.99	3.95	3.97	3.94
110	4.54	4.51	4.54	4.51	4.55	4.51	4.54	4.51	4.55	4.53	4.57	4.54	4.99	5.02	4.98	5.01	4.97	5.00	4.95
115	5.57	5.54	5.57	5.54	5.57	5.54	5.57	5.54	5.58	5.56	5.60	5.57	6.03	6.06	6.02	6.04	6.00	6.03	5.99
120	6.56	6.54	6.57	6.55	6.58	6.55	6.58	6.56	6.59	6.57	6.61	6.58	7.05	7.06	7.03	7.05	7.01	7.04	7.00
125	7.51	7.50	7.51	7.51	7.53	7.51	7.54	7.52	7.55	7.53	7.56	7.54	8.00	8.01	7.98	7.99	7.97	7.98	7.95
130	8.40	8.39	8.41	8.41	8.43	8.42	8.43	8.42	8.44	8.43	8.46	8.44	8.89	8.89	8.87	8.88	8.86	8.87	8.85
135	9.21	9.21	9.23	9.24	9.25	9.24	9.26	9.25	9.27	9.26	9.28	9.27	9.72	9.72	9.70	9.70	9.69	9.70	9.68
140	9.97	9.98	9.99	10.0	10.0	10.0	10.03	10.02	10.03	10.02	10.04	10.03	10.5	10.5	10.5	10.5	10.4	10.4	10.4
145	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	11.2	11.2	11.1	11.1	11.1	11.1	11.1
150	11.3	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.8	11.8	11.8	11.8	11.8	11.7	11.7
155	12.0	12.0	12.0	12.1	12.0	12.1	12.0	12.1	12.1	12.1	12.1	12.1	12.4	12.4	12.4	12.3	12.4	12.3	12.3
160	12.6	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	13.0	13.0	13.0	12.9	12.9	12.9	12.9
165	13.2	13.3	13.2	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.5	13.5	13.5	13.5	13.5	13.4	13.5
170	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	14.0	14.0	14.0	13.9	13.9	13.9	13.9
175	14.3	14.3	14.3	14.3	14.3	14.3	14.2	14.3	14.2	14.2	14.2	14.2	14.4	14.3	14.4	14.3	14.3	14.3	14.3
180	14.6	14.6	14.6	14.6	14.5	14.6	14.5	14.5	14.5	14.6	14.5	14.5	14.6	14.6	14.6	14.6	14.6	14.5	14.5

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γInterval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.62V I:1.0268A P:233.87W PF:0.9876 Freq:50.00Hz Lamp Flux:39965.4x1 lm		
NAME: HBUD2-50K240LSD	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

Table--2

UNIT: X10cd

C (DEG) γ (DEG)	285	300	315	330	345														
0	1386	1386	1386	1386	1386														
5	1381	1381	1381	1381	1381														
10	1365	1365	1365	1366	1365														
15	1339	1340	1339	1340	1339														
20	1304	1306	1305	1306	1305														
25	1259	1261	1260	1261	1260														
30	1204	1206	1204	1206	1205														
35	1138	1140	1138	1141	1139														
40	1060	1063	1061	1064	1062														
45	970	974	971	975	972														
50	868	873	869	875	871														
55	755	760	756	762	756														
60	627	634	629	636	630														
65	491	498	493	501	496														
70	336	342	339	347	341														
75	195	200	197	205	200														
80	78.0	81.2	79.4	83.7	81.1														
85	14.5	13.0	14.9	13.9	12.6														
90	1.57	1.54	1.56	1.53	1.55														
95	2.21	2.18	2.20	2.17	2.19														
100	3.02	2.99	3.01	2.97	2.99														
105	3.96	3.92	3.94	3.90	3.93														
110	4.98	4.94	4.96	4.92	4.95														
115	6.01	5.97	5.99	5.95	5.98														
120	7.02	6.98	7.00	6.96	6.99														
125	7.97	7.94	7.95	7.92	7.94														
130	8.86	8.83	8.84	8.81	8.83														
135	9.68	9.66	9.67	9.64	9.66														
140	10.4	10.4	10.4	10.4	10.4														
145	11.1	11.1	11.1	11.1	11.1														
150	11.7	11.7	11.7	11.7	11.7														
155	12.3	12.3	12.3	12.3	12.3														
160	12.9	12.9	12.9	12.9	12.9														
165	13.4	13.4	13.4	13.4	13.4														
170	13.9	13.9	13.9	13.9	13.9														
175	14.3	14.3	14.3	14.3	14.3														
180	14.5	14.6	14.5	14.5	14.5														

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:C  
 Test Date:07 January 2022

γ Range: 0 - 180DEG  
 γInterval: 1.0DEG  
 Test System: GO-2000A\_V1 SYSTEM V2.00.446  
 Humidity:65.0%  
 Test Distance:8.000m [K=1.0000]  
 Remarks:

Photometric Data Table [cd]

G/C	0.0	15.0	30.0	45.0	60.0	75.0	90.0	105.0	120.0	135.0
0.0	13862	13862	13862	13862	13862	13862	13862	13862	13862	13862
3.0	13844	13847	13843	13844	13842	13844	13841	13843	13841	13843
6.0	13788	13792	13785	13788	13783	13786	13781	13783	13780	13784
9.0	13692	13697	13688	13692	13684	13688	13682	13686	13679	13684
12.0	13562	13570	13556	13564	13553	13562	13549	13557	13546	13554
15.0	13399	13407	13393	13400	13388	13395	13384	13390	13381	13387
18.0	13202	13212	13194	13206	13189	13200	13184	13194	13180	13190
21.0	12970	12983	12962	12977	12956	12970	12950	12963	12946	12960
24.0	12701	12715	12692	12706	12687	12702	12680	12693	12675	12688
27.0	12394	12412	12385	12403	12377	12396	12371	12387	12366	12382
30.0	12048	12071	12041	12061	12031	12054	12026	12045	12019	12040
33.0	11667	11685	11658	11677	11649	11669	11643	11660	11636	11652
36.0	11245	11272	11236	11262	11228	11253	11220	11244	11212	11234
39.0	10785	10808	10773	10797	10764	10789	10758	10778	10748	10769
42.0	10284	10312	10272	10296	10261	10288	10252	10276	10243	10265
45.0	9732	9765	9719	9750	9705	9741	9698	9727	9689	9717
48.0	9136	9172	9126	9158	9112	9149	9105	9136	9094	9122
51.0	8506	8542	8496	8527	8483	8518	8476	8507	8465	8492
54.0	7825	7872	7816	7859	7804	7847	7798	7839	7784	7821
57.0	7102	7145	7089	7128	7075	7121	7069	7106	7057	7088
60.0	6334	6377	6323	6360	6305	6351	6298	6337	6286	6316
63.0	5519	5570	5515	5555	5499	5550	5497	5538	5476	5517
66.0	4682	4730	4667	4715	4662	4697	4632	4691	4637	4667
69.0	3776	3812	3729	3782	3719	3779	3700	3746	3690	3732
72.0	2819	2899	2845	2876	2799	2875	2830	2865	2783	2835
75.0	1987	2045	1997	2046	1975	2037	1986	2030	1964	2001
78.0	1261	1298	1232	1298	1245	1285	1253	1273	1247	1255
81.0	625.1	659.0	628.4	653.8	619.9	656.3	620.0	651.0	618.4	634.2
84.0	206.3	253.9	207.3	250.5	204.0	252.6	209.0	250.8	202.2	240.9
87.0	35.32	39.44	35.88	39.06	35.43	40.79	37.94	40.86	36.15	38.90
90.0	12.73	12.51	12.68	12.48	12.66	12.44	12.61	12.41	12.62	12.47
93.0	16.07	15.88	16.03	15.83	16.00	15.78	15.97	15.80	16.01	15.89
96.0	20.13	19.87	20.07	19.84	20.06	19.78	20.02	19.82	20.08	19.91
99.0	24.77	24.53	24.74	24.50	24.73	24.44	24.70	24.46	24.77	24.58
102.0	29.93	29.64	29.88	29.63	29.87	29.57	29.84	29.61	29.90	29.73
105.0	35.47	35.19	35.45	35.17	35.44	35.11	35.41	35.16	35.49	35.30
108.0	41.40	41.10	41.39	41.11	41.39	41.06	41.37	41.10	41.47	41.24
111.0	47.48	47.19	47.50	47.21	47.51	47.15	47.51	47.21	47.59	47.34
114.0	53.60	53.31	53.63	53.36	53.67	53.33	53.65	53.38	53.73	53.51
117.0	59.71	59.46	59.74	59.52	59.79	59.48	59.79	59.55	59.89	59.69
120.0	65.63	65.43	65.67	65.53	65.80	65.51	65.82	65.61	65.92	65.73
123.0	71.33	71.19	71.42	71.27	71.55	71.32	71.61	71.41	71.71	71.48
126.0	76.89	76.75	76.97	76.92	77.16	76.95	77.24	77.05	77.31	77.17
129.0	82.22	82.16	82.34	82.34	82.54	82.39	82.60	82.48	82.69	82.59
132.0	87.28	87.22	87.46	87.46	87.67	87.52	87.72	87.58	87.79	87.68
135.0	92.15	92.13	92.34	92.39	92.55	92.45	92.63	92.52	92.68	92.59
138.0	96.75	96.83	96.98	97.10	97.21	97.17	97.29	97.21	97.33	97.25
141.0	101.1	101.3	101.4	101.5	101.6	101.6	101.7	101.7	101.7	101.7
144.0	105.2	105.4	105.5	105.7	105.8	105.7	105.8	105.8	105.9	105.8
147.0	109.2	109.4	109.5	109.7	109.7	109.7	109.7	109.7	109.8	109.7
150.0	113.3	113.5	113.7	113.8	113.8	113.8	113.8	113.8	113.8	113.8
153.0	117.3	117.7	117.7	117.8	117.8	117.8	117.8	117.9	117.9	117.9
156.0	121.3	121.7	121.6	121.8	121.7	121.8	121.8	121.8	121.8	121.8
159.0	125.0	125.5	125.3	125.5	125.4	125.5	125.4	125.5	125.4	125.5
162.0	128.7	129.1	128.9	129.1	129.0	129.1	129.0	129.1	129.0	129.1
165.0	132.4	132.7	132.5	132.7	132.6	132.7	132.6	132.7	132.6	132.6
168.0	135.9	136.2	136.0	136.2	136.0	136.2	136.0	136.1	136.0	136.1
171.0	139.2	139.5	139.2	139.5	139.3	139.4	139.2	139.3	139.0	139.0
174.0	142.1	142.5	142.1	142.4	142.0	142.3	141.8	141.8	141.6	141.7
177.0	144.3	144.7	144.2	144.5	144.1	144.1	143.7	144.0	143.7	143.9
180.0	145.7	146.3	145.7	146.0	145.3	145.5	145.1	145.5	145.2	145.5
G/C	150.0	165.0	180.0	195.0	210.0	225.0	240.0	255.0	270.0	285.0
0.0	13862	13862	13862	13862	13862	13862	13862	13862	13862	13862
3.0	13841	13842	13842	13842	13843	13842	13845	13843	13845	13843
6.0	13780	13782	13784	13778	13785	13780	13787	13781	13788	13782
9.0	13678	13682	13685	13680	13687	13682	13689	13684	13691	13687
12.0	13544	13550	13551	13544	13553	13548	13558	13552	13560	13554
15.0	13378	13385	13386	13376	13380	13380	13395	13385	13398	13387
18.0	13177	13187	13189	13177	13193	13183	13199	13189	13203	13193
21.0	12941	12956	12954	12943	12959	12950	12967	12955	12970	12959
24.0	12670	12686	12685	12667	12690	12673	12698	12679	12702	12685
27.0	12360	12379	12378	12359	12384	12367	12391	12371	12395	12379
30.0	12014	12034	12033	12014	12039	12022	12047	12026	12051	12035

C Range: 0 - 360DEG

C Interval: 15.0DEG

Test Speed: HIGH

Temperature: 25.3DEG

Operators: C

Test Date: 07 January 2022

γ Range: 0 - 180DEG

γ Interval: 1.0DEG

Test System: GO-2000A\_V1 SYSTEM V2.00.446

Humidity: 65.0%

Test Distance: 8.000m [K=1.0000]

Remarks:

**Photometric Data Table [cd]**

33.0	11629	11647	11652	11625	11660	11632	11668	11638	11671	11644
36.0	11204	11228	11232	11206	11239	11216	11247	11220	11251	11228
39.0	10738	10760	10769	10740	10775	10749	10784	10755	10785	10761
42.0	10230	10255	10269	10232	10273	10240	10280	10241	10282	10249
45.0	9676	9706	9719	9686	9724	9690	9729	9691	9730	9698
48.0	9081	9111	9121	9091	9128	9098	9131	9099	9136	9110
51.0	8452	8482	8493	8443	8503	8448	8506	8451	8511	8460
54.0	7768	7807	7822	7771	7828	7781	7832	7787	7837	7795
57.0	7036	7071	7098	7046	7099	7055	7106	7058	7107	7064
60.0	6264	6299	6327	6265	6330	6265	6330	6265	6333	6273
63.0	5459	5502	5510	5456	5522	5462	5524	5460	5526	5473
66.0	4600	4650	4680	4621	4675	4627	4685	4616	4668	4628
69.0	3653	3703	3756	3696	3737	3682	3742	3676	3721	3669
72.0	2777	2812	2840	2780	2867	2782	2841	2771	2854	2779
75.0	1942	1984	2001	1948	2014	1953	2002	1949	2007	1952
78.0	1216	1230	1278	1231	1249	1231	1264	1226	1242	1232
81.0	589.4	612.8	633.7	597.8	631.8	599.4	637.1	597.2	628.0	597.3
84.0	191.0	228.2	241.4	192.6	238.7	195.3	237.6	193.9	241.2	199.3
87.0	33.85	34.63	37.92	34.32	38.30	34.36	38.69	35.67	41.24	37.75
90.0	12.74	12.55	15.71	15.87	15.64	15.79	15.55	15.73	15.51	15.66
93.0	16.14	15.98	19.36	19.55	19.29	19.46	19.19	19.39	19.14	19.29
96.0	20.23	20.02	23.68	23.89	23.57	23.79	23.47	23.73	23.41	23.65
99.0	24.92	24.71	28.57	28.76	28.49	28.66	28.36	28.59	28.30	28.49
102.0	30.08	29.88	33.95	34.17	33.85	34.06	33.73	33.97	33.65	33.84
105.0	35.67	35.43	39.71	39.96	39.61	39.85	39.46	39.74	39.36	39.59
108.0	41.65	41.39	45.77	46.05	45.67	45.92	45.54	45.82	45.41	45.66
111.0	47.77	47.48	52.01	52.25	51.92	52.14	51.75	52.02	51.62	51.84
114.0	53.93	53.64	58.25	58.49	58.14	58.35	57.97	58.24	57.84	58.04
117.0	60.08	59.78	64.45	64.65	64.31	64.50	64.13	64.38	64.01	64.19
120.0	66.09	65.82	70.48	70.63	70.31	70.47	70.15	70.36	70.02	70.19
123.0	71.85	71.64	76.24	76.38	76.08	76.21	75.91	76.13	75.79	75.95
126.0	77.48	77.25	81.82	81.92	81.65	81.73	81.50	81.66	81.40	81.51
129.0	82.86	82.67	87.22	87.23	87.04	87.07	86.90	87.01	86.80	86.87
132.0	87.96	87.77	92.30	92.33	92.10	92.18	92.00	92.14	91.89	91.99
135.0	92.84	92.67	97.22	97.15	96.99	97.03	96.87	96.98	96.76	96.84
138.0	97.44	97.34	102.0	101.7	101.7	101.7	101.6	101.6	101.4	101.4
141.0	101.8	101.7	106.4	106.1	106.0	105.9	105.9	105.9	105.7	105.7
144.0	105.9	105.8	110.4	110.2	110.0	110.0	109.9	109.9	109.8	109.8
147.0	109.9	109.8	114.3	114.1	114.0	113.8	113.8	113.7	113.7	113.6
150.0	113.9	113.9	118.1	117.9	117.8	117.6	117.5	117.5	117.4	117.4
153.0	118.0	117.9	121.8	121.5	121.5	121.1	121.2	121.1	121.1	121.0
156.0	121.9	121.9	125.3	125.1	125.0	124.6	124.7	124.6	124.6	124.6
159.0	125.6	125.6	128.8	128.5	128.5	128.1	128.1	128.0	128.0	127.9
162.0	129.2	129.2	132.1	131.8	131.8	131.4	131.4	131.3	131.4	131.2
165.0	132.7	132.8	135.3	135.0	135.0	134.6	134.6	134.4	134.5	134.4
168.0	136.2	136.2	138.2	137.9	138.0	137.5	137.6	137.4	137.5	137.3
171.0	139.0	139.1	140.9	140.5	140.8	140.2	140.3	140.0	140.2	140.0
174.0	141.6	141.7	143.2	142.7	143.0	142.5	142.5	142.2	142.4	142.2
177.0	143.7	143.8	145.3	144.7	145.1	144.5	144.6	144.2	144.5	144.2
180.0	145.2	145.4	146.4	145.7	146.2	145.6	145.7	145.1	145.5	145.2
G/C	300.0	315.0	330.0	345.0						
0.0	13862	13862	13862	13862						
3.0	13845	13845	13847	13844						
6.0	13789	13786	13792	13784						
9.0	13693	13689	13696	13688						
12.0	13563	13558	13566	13556						
15.0	13401	13392	13405	13393						
18.0	13207	13199	13211	13200						
21.0	12974	12967	12980	12968						
24.0	12708	12693	12714	12696						
27.0	12403	12386	12408	12388						
30.0	12057	12045	12064	12050						
33.0	11678	11652	11687	11658						
36.0	11257	11240	11266	11235						
39.0	10793	10771	10804	10771						
42.0	10288	10261	10298	10263						
45.0	9736	9710	9751	9723						
48.0	9141	9120	9156	9128						
51.0	8514	8474	8533	8493						
54.0	7840	7806	7858	7808						
57.0	7111	7075	7130	7090						
60.0	6337	6289	6361	6298						
63.0	5529	5488	5561	5519						
66.0	4694	4646	4712	4676						

C Range: 0 - 360DEG

C Interval: 15.0DEG

Test Speed: HIGH

Temperature: 25.3DEG

Operators: C

Test Date: 07 January 2022

γ Range: 0 - 180DEG

γ Interval: 1.0DEG

Test System: GO-2000A\_V1 SYSTEM V2.00.446

Humidity: 65.0%

Test Distance: 8.000m [K=1.0000]

Remarks:

## Photometric Data Table [cd]

69.0	3736	3704	3772	3734
72.0	2841	2794	2894	2827
75.0	2004	1967	2045	1996
78.0	1270	1245	1273	1266
81.0	635.0	609.4	654.6	629.3
84.0	241.8	204.7	253.1	209.1
87.0	41.65	39.45	44.16	38.50
90.0	15.42	15.56	15.29	15.47
93.0	19.05	19.19	18.89	19.06
96.0	23.28	23.50	23.12	23.36
99.0	28.19	28.35	27.99	28.20
102.0	33.50	33.67	33.28	33.52
105.0	39.20	39.43	38.99	39.26
108.0	45.23	45.47	45.02	45.32
111.0	51.44	51.65	51.22	51.48
114.0	57.64	57.85	57.41	57.71
117.0	63.81	64.01	63.58	63.88
120.0	69.83	70.00	69.64	69.87
123.0	75.62	75.78	75.41	75.65
126.0	81.21	81.34	81.01	81.22
129.0	86.63	86.69	86.43	86.58
132.0	91.71	91.82	91.54	91.73
135.0	96.60	96.68	96.43	96.58
138.0	101.3	101.3	101.1	101.2
141.0	105.6	105.6	105.5	105.5
144.0	109.7	109.7	109.5	109.6
147.0	113.6	113.5	113.4	113.5
150.0	117.4	117.3	117.2	117.2
153.0	121.0	120.9	120.8	120.8
156.0	124.6	124.5	124.4	124.4
159.0	127.9	127.9	127.8	127.8
162.0	131.3	131.2	131.1	131.1
165.0	134.4	134.3	134.3	134.2
168.0	137.4	137.3	137.3	137.2
171.0	140.1	139.9	140.0	139.9
174.0	142.4	142.2	142.3	142.1
177.0	144.4	144.2	144.3	144.2
180.0	145.5	145.2	145.4	145.2

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:C  
Test Date:07 January 2022

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: GO-2000A\_V1 SYSTEM V2.00.446  
Humidity:65.0%  
Test Distance:8.000m [K=1.0000]  
Remarks: