



KING MONGKUT'S UNIVERSITY OF TECHNOLOGY THONBURI
INSTITUTE FOR SCIENTIFIC AND TECHNOLOGICAL RESEARCH AND SERVICES

126 PRACHA-U-THIT RD., BANGMOD, THUNGKRU, BANGKOK 10140 THAILAND
Tel. +66 2470-9671-3, +66 2470-9664-7 Fax +66 2428-3374 <http://www.kmutt.ac.th>

Our ref: ISTRS/56701

September 18, 2013

Manager: Dynoelectric Co., Ltd.

Subject: Photometric Test Report (CIE 121-1996)

Dear Sir,

Institute for Scientific and Technological Research and Services (ISTRS) and Illumination Engineering Laboratory (IEL) in the department of electrical engineering have tested your sample to approve photometric data and electrical parameters. Luminous intensity distribution was tested by goniophotometer under controlled condition. The electrical characteristics were measured with high accuracy digital power meter. The summarized test results were report in conclusion.

Test Sample:

Sample Number	IEL1309001
Description	LED Emergency Lighting Luminaire
Manufacturer	Dynoelectric Co., Ltd.
Model	LD-115
LED Lamp Rating	2 x 9W
Photometric Rating	-



Test Sample: **LD-115**

Sample Number: IEL1309001
Model Number: **LD-115**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56701

Standard and Test Condition:

CIE 121-1996: The Photometry and Goniophotometry of Luminaires

Ambient Temperature 25±1°C

Relative Humidity (RH) 50-70%

Test Results:

Luminous Intensity Distribution Table : Type-C (cd)

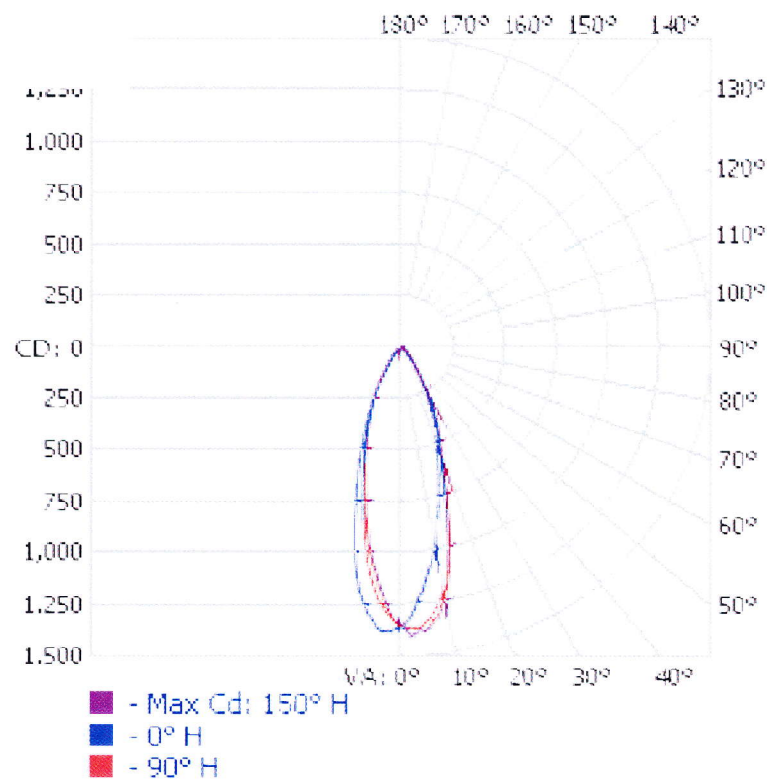
	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	1365	1368	1361	1367	1364	1367	1356	1357	1358	1360	1349	1367	1365	1368	1361	1367	1364	1367	1356	1357	1358	1360	1349	1367	1365
5	1198	1219	1247	1282	1312	1337	1350	1371	1383	1388	1388	1375	1369	1345	1324	1306	1284	1261	1237	1210	1187	1176	1174	1190	1198
10	967	1002	1041	1095	1136	1170	1184	1208	1229	1230	1234	1200	1189	1161	1132	1104	1068	1027	992	962	932	927	914	934	967
15	695	731	770	806	824	852	879	905	916	900	891	866	873	857	826	781	745	714	695	683	671	673	665	673	695
20	498	521	550	571	565	565	585	616	620	592	578	569	593	588	558	520	507	494	491	486	487	493	497	487	498
25	351	370	379	388	389	379	397	428	432	417	404	393	399	400	375	357	360	349	344	340	335	343	353	343	351
30	233	236	233	227	227	231	244	249	244	239	237	228	227	222	219	226	234	222	221	221	217	218	224	227	233
35	111	113	114	117	121	124	127	128	129	128	127	125	125	119	114	111	110	106	105	106	105	105	105	108	111
40	60	62	67	70	76	75	76	78	78	80	78	79	76	73	67	65	62	61	60	58	59	57	56	56	60
45	31	33	37	40	44	44	44	44	45	46	46	45	44	41	38	36	34	33	32	32	32	32	30	30	31
50	17	18	20	22	24	24	23	23	24	24	24	24	24	23	20	20	19	18	17	17	19	19	17	17	17
55	11	11	12	13	14	14	13	14	14	14	14	14	15	14	12	12	12	11	11	11	12	12	11	11	11
60	8	8	8	9	10	10	9	9	9	9	9	10	10	10	9	8	8	8	8	8	9	9	8	8	8
65	6	6	6	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	7	7	6	6	6
70	4	4	4	4	5	5	4	4	4	4	4	5	5	5	4	4	4	4	4	4	5	5	4	4	4
75	2	2	3	3	3	3	3	3	2	3	3	3	3	3	2	2	2	2	3	3	3	3	3	2	2
80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number: IEL1309001
Model Number: LD-115

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56701

Luminous Intensity Distribution Curve (cd)



Sample Number: IEL1309001
Model Number: **LD-115**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56701

Zonal Lumen Table

ZONAL LUMEN SUMMARY			
ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	505.2	79.5%	79.6%
0-40	582.7	91.8%	91.8%
0-60	625.2	98.4%	98.5%
60-90	9.6	1.5%	1.5%
0-90	634.8	99.9%	100%

LUMENS PER ZONE		
ZONE	LUMENS	% TOTAL
0-10	116.3	18.3%
10-20	217.5	34.3%
20-30	171.4	27.0%
30-40	77.6	12.2%
40-50	30.6	4.8%
50-60	11.8	1.9%
60-70	6.5	1.0%
70-80	2.7	0.4%
80-90	0.4	0.1%

Sample Number: IEL1309001
Model Number: **LD-115**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56701

Summary of Test Results

Electrical Parameters		Photometric Data	
Test Voltage (V_{dc})	8.656	Total Flux (lm)	635.06
Test Frequency (Hz)	DC	Efficacy (lm/W)	99.64
Current (A_{dc})	0.7363	C0/180 and Average Beam Angle ($^{\circ}$)	33.2, 32.8
THD _i (%)	n/a	CCT (K)	3,091
Power (W)	6.373	Rendering Index (Ra), R9	n/a
Power Factor	n/a	Chromaticity Coordinate x/y	n/a

Very truly yours,



(Assoc. Prof. Chansak Apainipat)

Head of Illumination Engineering Laboratory



(Asst. Prof. Nithi Buranajant)

Director of Institute for Scientific and
Technological Research and Services

END OF REPORT

Sample Number: IEL1309001
Model Number: **LD-115**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918



KING MONGKUT'S UNIVERSITY OF TECHNOLOGY THONBURI
INSTITUTE FOR SCIENTIFIC AND TECHNOLOGICAL RESEARCH AND SERVICES

126 PRACHA-U-THIT RD., BANGMOD, THUNGKRU, BANGKOK 10140 THAILAND
Tel. +66 2470-9671-3, +66 2470-9664-7 Fax +66 2428-3374 <http://www.kmutt.ac.th>

Our ref: ISTRS/56702

September 18, 2013

Manager: Dynoelectric Co., Ltd.

Subject: Photometric Test Report (CIE 121-1996)

Dear Sir,

Institute for Scientific and Technological Research and Services (ISTRS) and Illumination Engineering Laboratory (IEL) in the department of electrical engineering have tested your sample to approve photometric data and electrical parameters. Luminous intensity distribution was tested by goniophotometer under controlled condition. The electrical characteristics were measured with high accuracy digital power meter. The summarized test results were report in conclusion.

Test Sample:

Sample Number	IEL1309002
Description	LED Emergency Lighting Luminaire
Manufacturer	Dynoelectric Co., Ltd.
Model	LD-215
LED Lamp Rating	2 x 12W
Photometric Rating	-



Test Sample: **LD-215**

Sample Number: IEL1309002
Model Number: **LD-215**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56702

Standard and Test Condition:

CIE 121-1996: The Photometry and Goniophotometry of Luminaires

Ambient Temperature 25±1°C

Relative Humidity (RH) 50-70%

Test Results:

Luminous Intensity Distribution Table : Type-C (cd)

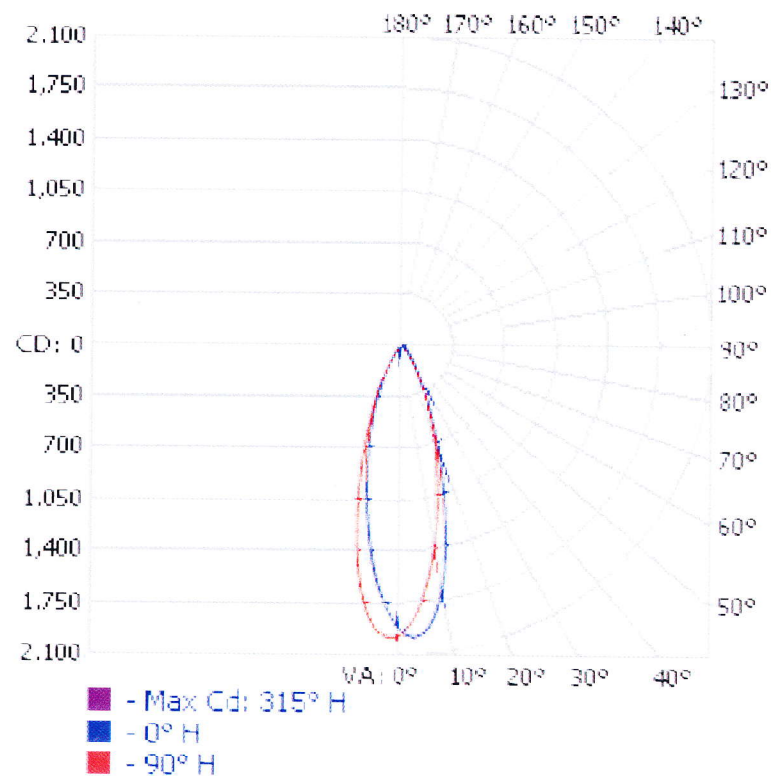
	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	1931	1894	1885	1855	1835	1823	1972	1975	1971	1959	1954	1937	1931	1894	1885	1855	1835	1823	1972	1975	1971	1959	1954	1937	1931
5	1960	1935	1886	1842	1773	1705	1744	1707	1675	1651	1642	1644	1647	1645	1665	1647	1666	1701	1926	1971	2001	2008	1997	1981	1960
10	1665	1641	1615	1568	1495	1393	1366	1299	1256	1225	1225	1228	1245	1251	1260	1260	1300	1351	1585	1649	1681	1697	1695	1681	1665
15	1175	1184	1187	1163	1097	1029	971	914	879	850	847	852	872	864	889	868	900	934	1098	1153	1182	1191	1185	1173	1175
20	737	749	751	761	738	701	650	612	586	569	568	570	584	582	577	552	568	590	696	725	737	746	736	736	737
25	426	433	439	448	448	435	396	377	364	353	355	355	364	352	335	313	318	330	400	416	421	427	422	425	426
30	239	230	228	232	237	235	210	200	199	197	197	195	198	186	175	160	163	174	223	234	235	237	239	244	239
35	139	127	123	122	124	122	110	105	106	105	106	105	106	101	94	91	91	99	128	135	134	134	138	144	139
40	84	75	74	73	74	71	65	65	64	66	64	65	64	64	61	60	59	63	77	79	81	80	83	85	84
45	53	49	50	50	50	48	45	45	45	46	45	44	44	44	44	43	42	43	49	52	53	54	55	54	53
50	37	36	36	37	37	35	33	33	35	36	35	33	33	32	33	33	32	32	35	36	38	39	39	38	37
55	28	27	28	29	28	27	26	26	27	28	27	26	26	25	26	26	25	24	26	27	29	29	29	28	28
60	21	21	22	22	22	21	20	21	22	22	22	21	20	20	20	20	19	19	20	20	21	22	21	21	21
65	15	15	16	17	17	16	16	16	17	18	17	17	16	16	15	15	14	14	15	15	15	15	15	15	15
70	10	10	11	12	12	12	12	12	13	13	13	13	12	11	11	10	10	9	10	10	10	10	10	10	10
75	6	6	7	8	8	8	8	8	9	9	9	9	8	7	7	6	6	5	5	5	5	5	5	5	6
80	2	2	3	4	4	5	4	5	5	5	5	5	5	4	3	3	2	2	2	1	1	1	1	1	2
85	0	0	0	1	1	1	1	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number: IEL1309002
Model Number: LD-215

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56702

Luminous Intensity Distribution Curve (cd)



Sample Number: IEL1309002
Model Number: **LD-215**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918

Our ref: ISTRS/56702

Summary of Test Results

Electrical Parameters		Photometric Data	
Test Voltage (V_{dc})	11.434	Total Flux (lm)	783.60
Test Frequency (Hz)	DC	Efficacy (lm/W)	94.14
Current (A_{dc})	0.728	C0/180 and Average Beam Angle ($^{\circ}$)	31.2, 30.8
THD _i (%)	n/a	CCT (K)	3,014
Power (W)	8.324	Rendering Index (Ra), R9	n/a
Power Factor	n/a	Chromaticity Coordinate x/y	n/a

Very truly yours,



(Assoc. Prof. Chansak Apainipat)

Head of Illumination Engineering Laboratory



(Asst. Prof. Nithi Buranajant)

Director of Institute for Scientific and
Technological Research and Services

END OF REPORT

Sample Number: IEL1309002
Model Number: **LD-215**

Photometric Test Report (CIE 121-1996)
Original Issue Date: 130918