Photometric Test Report

Relevant Standards

☑ IES LM-79-2008
☑ ANSI C82.77-2017

Prepared For

RAB Lighting Inc.

Prepared By
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Issue Date: 2023-12-26
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1.0 Test Summary

DLC Technical Requirements V5.1

High Bay Luminaires for Commercial and Industrial Buildings				
Requirement Category	**Test Method**	**Requirements**		**Test Value**
Luminaire Output (lm) (Goniophotometer – Section 4.2)	IES LM-79-2008	10000		48951
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard 120	Premium 135	162.1
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		301.9
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	480V	9.86
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	480V	0.904
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps 4 steps	3045±175 3045±100	3060
Minimum CRI (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥70		85.1
Minimum R9 (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥-40		3
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		83
Minimum Rg (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥89		96
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-12%
Zonal Lumen Requirement (20°-50°) (Goniophotometer – Section 4.2)	IES LM-79-2008	≥30%		64.2%
Dicomfort Glare (UGR) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard N/A	Premium <28	26.1
Input Voltage (V)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Cast		480.0
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Input Current (A)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		0.696
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		301.9
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2023-12-23	H17XXL @300W/3000K/480	231222002-S1
2	Goniophotometer Test	2023-12-23	H17XXL @300W/3000K/480	231222002-S1
3	THD and PF Test	2023-12-23	H17XXL @300W/3000K/480	231222002-S1

Remark (If any)

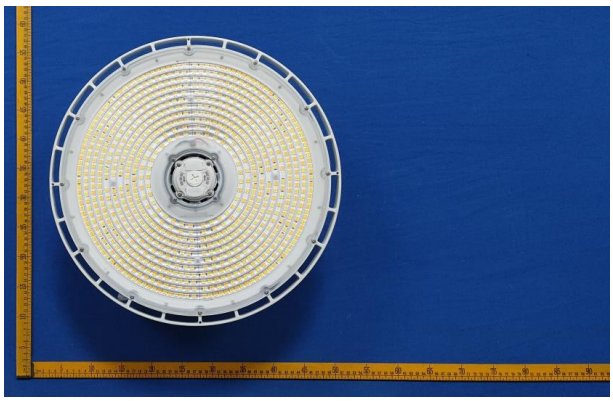
1. **The results contained in this report pertain only to the tested samples.**
2. **This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.**
3. **This report does not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.**

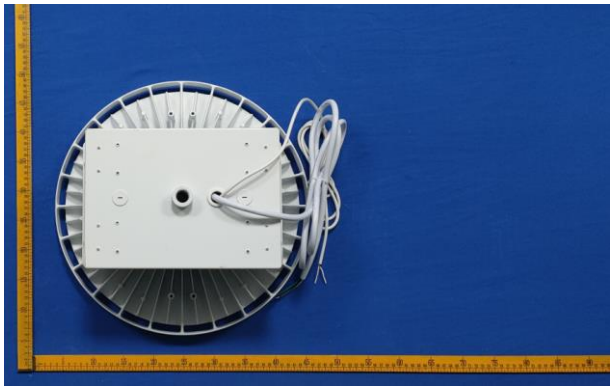
3.0 Product Description

Luminaire Description: Model No. H17XXL @300W/3000K/480, color tunable from 3000K, 4000K and 5000K.

Electrical Specification: 480Vac, 50/60Hz

Photos of Luminaire Characteristics





4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	H17XXL @300W/3000K/480	Sample ID	231222002-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

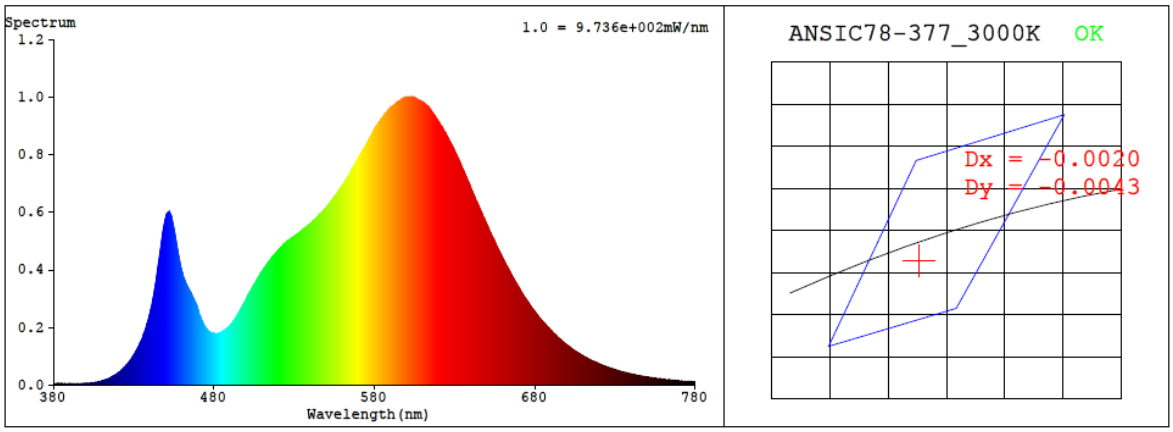
Test Method
The Samples were tested according to the IES LM-79-2008. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load. The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780nm.

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
480.0	60	0.696	301.9	0.904

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3060	85.1	3	-0.0014	83	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: x = 0.4308 y = 0.3983 / u' = 0.2490 v' = 0.5182 (duv=-1.44e-03)

CCT= 3060K Prcp WL: Ld=583.1nm Purity=48.8%

Peak WL: Lp=602nm FWHM: =128.7nm Ratio:R=22.4% G=75.0% B=2.5%

Render Index: Ra = 81.5 AvgR = 75.4 TM30:Rf=83 Rg=96

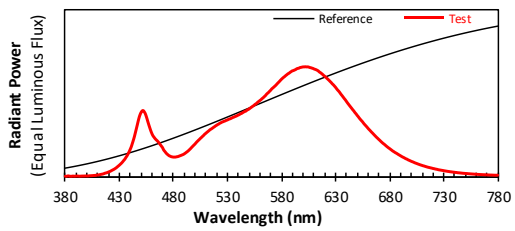
EEI: 0.08508 A++ Highest

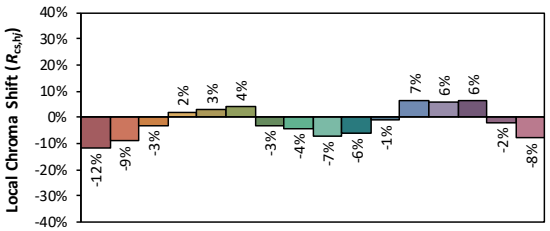
R1 =80	R2 =90	R3 =96	R4 =79	R5 =80	R6 =87	R7 =82	
R8 =57	R9 =3	R10=77	R11=78	R12=69	R13=82	R14=98	R15=73

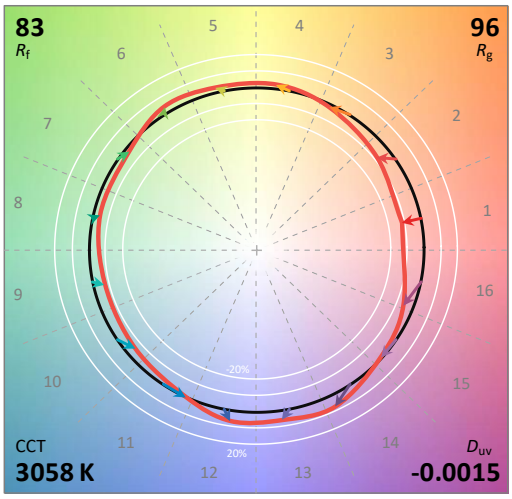
4.1 Integrating Sphere Test

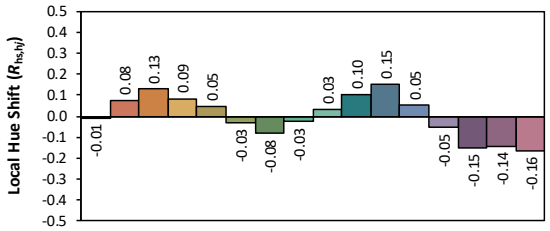
ANSI/IES TM-30-18 Color Rendition Report

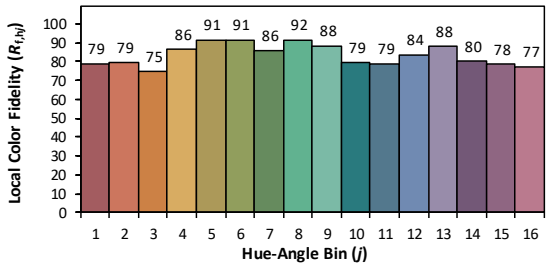
Source:	1 CIE F1	Manufacturer:	RAB Lighting Inc.
Date:	2023/12/26	Model:	H17XXL @300W/3000K/480

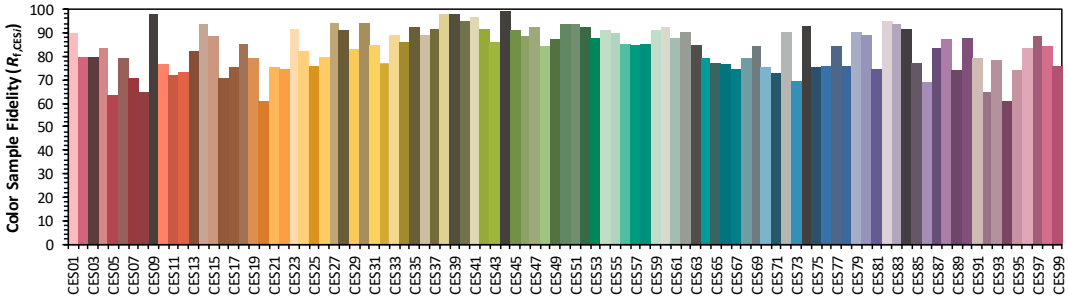












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4308
y	0.3982
u'	0.2491
v'	0.5181

CIE 13.3-1995 (CRI)

R_a	81
R_9	3

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4.1 Integrating Sphere Test

Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	2.70E-06	447	4.87E-04	514	4.27E-04	581	8.96E-04	648	5.82E-04	715	8.60E-05
381	1.50E-06	448	5.27E-04	515	4.33E-04	582	9.04E-04	649	5.71E-04	716	8.34E-05
382	4.40E-06	449	5.59E-04	516	4.40E-04	583	9.12E-04	650	5.57E-04	717	8.12E-05
383	5.30E-06	450	5.82E-04	517	4.47E-04	584	9.20E-04	651	5.46E-04	718	7.86E-05
384	2.70E-06	451	5.96E-04	518	4.53E-04	585	9.28E-04	652	5.32E-04	719	7.65E-05
385	2.00E-06	452	6.01E-04	519	4.61E-04	586	9.36E-04	653	5.20E-04	720	7.34E-05
386	2.20E-06	453	5.90E-04	520	4.67E-04	587	9.41E-04	654	5.09E-04	721	7.17E-05
387	3.90E-06	454	5.72E-04	521	4.74E-04	588	9.49E-04	655	4.98E-04	722	6.90E-05
388	2.90E-06	455	5.45E-04	522	4.79E-04	589	9.56E-04	656	4.85E-04	723	6.69E-05
389	3.00E-06	456	5.12E-04	523	4.86E-04	590	9.63E-04	657	4.73E-04	724	6.51E-05
390	3.80E-06	457	4.79E-04	524	4.90E-04	591	9.65E-04	658	4.62E-04	725	6.21E-05
391	4.20E-06	458	4.49E-04	525	4.96E-04	592	9.70E-04	659	4.52E-04	726	6.03E-05
392	3.80E-06	459	4.19E-04	526	4.99E-04	593	9.74E-04	660	4.40E-04	727	5.86E-05
393	2.60E-06	460	3.94E-04	527	5.04E-04	594	9.81E-04	661	4.29E-04	728	5.68E-05
394	3.00E-06	461	3.73E-04	528	5.07E-04	595	9.85E-04	662	4.19E-04	729	5.52E-05
395	3.70E-06	462	3.59E-04	529	5.12E-04	596	9.87E-04	663	4.08E-04	730	5.32E-05
396	4.10E-06	463	3.46E-04	530	5.15E-04	597	9.92E-04	664	3.98E-04	731	5.14E-05
397	4.30E-06	464	3.35E-04	531	5.21E-04	598	9.94E-04	665	3.88E-04	732	4.97E-05
398	4.60E-06	465	3.26E-04	532	5.24E-04	599	9.97E-04	666	3.77E-04	733	4.81E-05
399	5.10E-06	466	3.15E-04	533	5.28E-04	600	9.99E-04	667	3.67E-04	734	4.64E-05
400	4.50E-06	467	3.02E-04	534	5.33E-04	601	9.99E-04	668	3.57E-04	735	4.53E-05
401	4.70E-06	468	2.89E-04	535	5.38E-04	602	1.00E-03	669	3.48E-04	736	4.34E-05
402	6.30E-06	469	2.76E-04	536	5.42E-04	603	9.99E-04	670	3.38E-04	737	4.25E-05
403	6.70E-06	470	2.62E-04	537	5.46E-04	604	9.99E-04	671	3.29E-04	738	4.08E-05
404	7.40E-06	471	2.42E-04	538	5.50E-04	605	9.98E-04	672	3.19E-04	739	3.98E-05
405	7.90E-06	472	2.30E-04	539	5.55E-04	606	9.94E-04	673	3.10E-04	740	3.85E-05
406	9.00E-06	473	2.17E-04	540	5.60E-04	607	9.92E-04	674	3.02E-04	741	3.70E-05
407	9.60E-06	474	2.06E-04	541	5.64E-04	608	9.88E-04	675	2.94E-04	742	3.64E-05
408	1.07E-05	475	1.98E-04	542	5.71E-04	609	9.85E-04	676	2.86E-04	743	3.44E-05
409	1.17E-05	476	1.90E-04	543	5.75E-04	610	9.80E-04	677	2.77E-04	744	3.38E-05
410	1.40E-05	477	1.85E-04	544	5.81E-04	611	9.77E-04	678	2.69E-04	745	3.27E-05
411	1.45E-05	478	1.81E-04	545	5.87E-04	612	9.73E-04	679	2.62E-04	746	3.16E-05
412	1.73E-05	479	1.79E-04	546	5.93E-04	613	9.68E-04	680	2.55E-04	747	3.06E-05
413	1.93E-05	480	1.77E-04	547	5.96E-04	614	9.62E-04	681	2.47E-04	748	2.94E-05
414	2.13E-05	481	1.77E-04	548	6.04E-04	615	9.53E-04	682	2.40E-04	749	2.87E-05
415	2.36E-05	482	1.77E-04	549	6.09E-04	616	9.47E-04	683	2.32E-04	750	2.77E-05
416	2.72E-05	483	1.80E-04	550	6.15E-04	617	9.39E-04	684	2.26E-04	751	2.71E-05
417	3.11E-05	484	1.81E-04	551	6.23E-04	618	9.31E-04	685	2.19E-04	752	2.65E-05
418	3.31E-05	485	1.85E-04	552	6.30E-04	619	9.21E-04	686	2.14E-04	753	2.53E-05
419	3.70E-05	486	1.89E-04	553	6.38E-04	620	9.14E-04	687	2.08E-04	754	2.47E-05
420	4.11E-05	487	1.92E-04	554	6.44E-04	621	9.04E-04	688	2.01E-04	755	2.37E-05
421	4.52E-05	488	1.96E-04	555	6.52E-04	622	8.95E-04	689	1.96E-04	756	2.31E-05
422	4.97E-05	489	2.00E-04	556	6.60E-04	623	8.86E-04	690	1.90E-04	757	2.24E-05
423	5.51E-05	490	2.06E-04	557	6.67E-04	624	8.76E-04	691	1.84E-04	758	2.17E-05
424	6.05E-05	491	2.13E-04	558	6.77E-04	625	8.66E-04	692	1.78E-04	759	2.10E-05
425	6.56E-05	492	2.20E-04	559	6.84E-04	626	8.56E-04	693	1.73E-04	760	2.04E-05
426	7.19E-05	493	2.28E-04	560	6.92E-04	627	8.45E-04	694	1.68E-04	761	1.98E-05
427	7.86E-05	494	2.36E-04	561	7.00E-04	628	8.36E-04	695	1.62E-04	762	1.89E-05
428	8.68E-05	495	2.46E-04	562	7.09E-04	629	8.24E-04	696	1.59E-04	763	1.85E-05
429	9.52E-05	496	2.56E-04	563	7.17E-04	630	8.13E-04	697	1.52E-04	764	1.77E-05
430	1.04E-04	497	2.67E-04	564	7.27E-04	631	8.00E-04	698	1.48E-04	765	1.74E-05
431	1.13E-04	498	2.77E-04	565	7.36E-04	632	7.87E-04	699	1.44E-04	766	1.68E-05
432	1.22E-04	499	2.87E-04	566	7.48E-04	633	7.77E-04	700	1.39E-04	767	1.64E-05
433	1.33E-04	500	2.96E-04	567	7.58E-04	634	7.64E-04	701	1.35E-04	768	1.61E-05
434	1.46E-04	501	3.08E-04	568	7.66E-04	635	7.50E-04	702	1.31E-04	769	1.52E-05
435	1.57E-04	502	3.18E-04	569	7.77E-04	636	7.38E-04	703	1.26E-04	770	1.48E-05
436	1.73E-04	503	3.28E-04	570	7.86E-04	637	7.25E-04	704	1.22E-04	771	1.43E-05
437	1.87E-04	504	3.38E-04	571	7.98E-04	638	7.11E-04	705	1.19E-04	772	1.40E-05
438	2.05E-04	505	3.48E-04	572	8.07E-04	639	7.00E-04	706	1.15E-04	773	1.34E-05
439	2.24E-04	506	3.57E-04	573	8.16E-04	640	6.85E-04	707	1.11E-04	774	1.32E-05
440	2.47E-04	507	3.66E-04	574	8.25E-04	641	6.71E-04	708	1.08E-04	775	1.29E-05
441	2.71E-04	508	3.75E-04	575	8.34E-04	642	6.58E-04	709	1.04E-04	776	1.24E-05
442	3.00E-04	509	3.86E-04	576	8.45E-04	643	6.46E-04	710	1.01E-04	777	1.19E-05
443	3.32E-04	510	3.94E-04	577	8.55E-04	644	6.33E-04	711	9.78E-05	778	1.17E-05
444	3.67E-04	511	4.03E-04	578	8.65E-04	645	6.21E-04	712	9.54E-05	779	1.17E-05
445	4.07E-04	512	4.10E-04	579	8.76E-04	646	6.08E-04	713	9.19E-05	780	1.17E-05
446	4.46E-04	513	4.19E-04	580	8.86E-04	647	5.96E-04	714	8.90E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	H17XXL @300W/3000K/480	Sample ID	231222002-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.9	Humidity (%RH)	43.8

Test Method
The Samples were tested according to the IES LM-79-2008. Photometric parameters were measured using a type C goniophotometer and software. The ambient temperature shall be maintained at 25±1°C, measured at a point not more than 1 m from the sample and at the same height as the sample. The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load. The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1.0° vertical intervals and 15° horizontal intervals.

Test Conditions

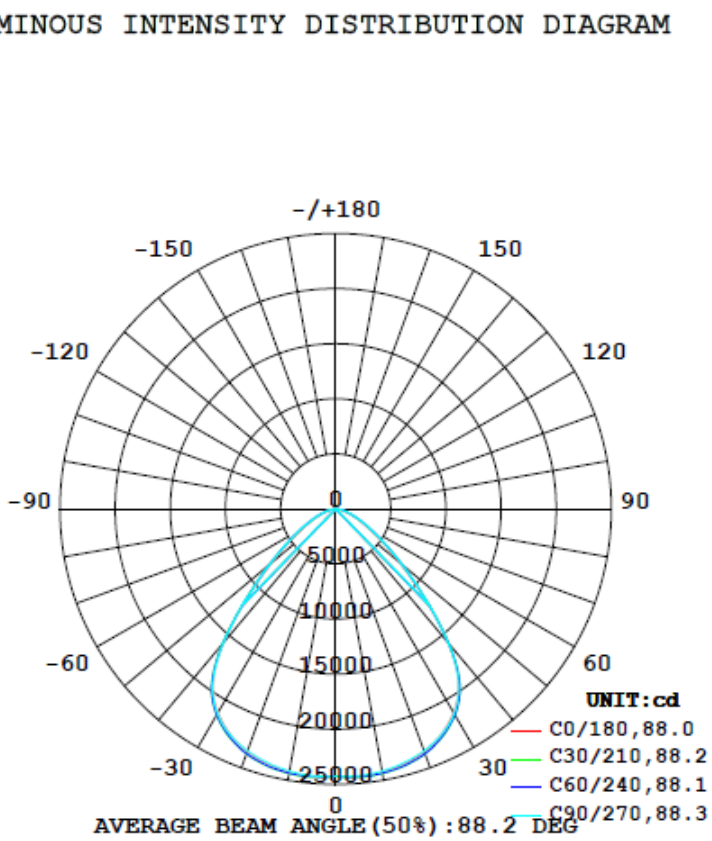
Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	480.0	60	0.696	301.9	0.904
NON-WORST CASE	N/A	N/A	N/A	N/A	N/A

Test Result

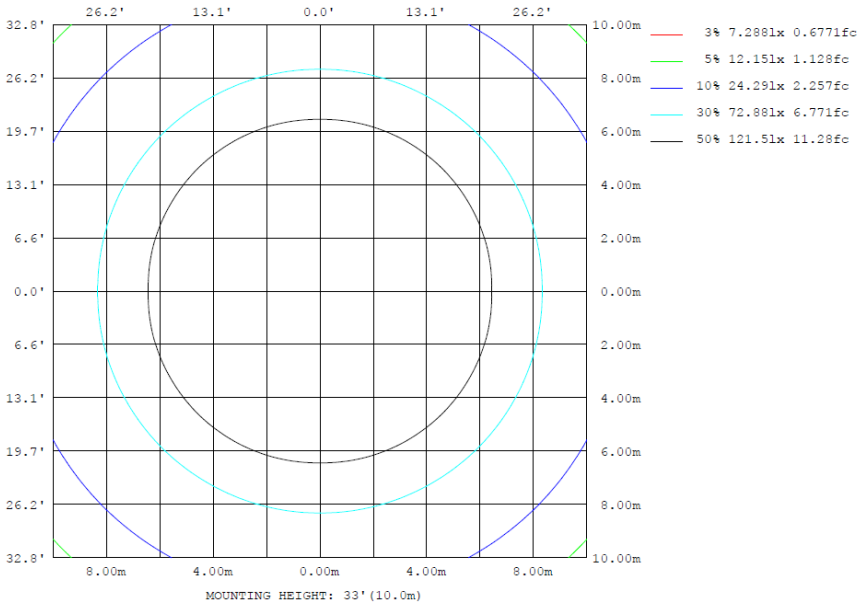
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement (20°-50°)	UGR	
	C0-180	C90-270	C0-180	C90-270			Crosswise	Endwise
48951	128.5	129.6	88.1	87.9	162.1	64.2%	25.7	26.1

4.2 Goniophotometer Test

Lighting Distribution Curve



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	2425	2439	2416	2439	2425	2439	2416	2439	0- 10	2326	2326	4.75,4.75
20	2343	2371	2338	2371	2343	2371	2338	2371	10- 20	6799	9124	18.6,18.6
30	2139	2165	2144	2165	2139	2165	2144	2165	20- 30	10479	19604	40,40
40	1589	1600	1587	1600	1589	1600	1587	1600	30- 40	12046	31650	64.7,64.7
50	757.1	787.4	778.6	787.4	757.1	787.4	778.6	787.4	40- 50	8877	40527	82.8,82.8
60	334.3	364.0	359.1	364.0	334.3	364.0	359.1	364.0	50- 60	4813	45340	92.6,92.6
70	143.8	155.2	157.5	155.2	143.8	155.2	157.5	155.2	60- 70	2398	47737	97.5,97.5
80	45.07	48.62	52.37	48.62	45.07	48.62	52.37	48.62	70- 80	1001	48738	99.6,99.6
90	0	0	0	0	0	0	0	0	80- 90	212.7	48951	100,100
100	0	0	0	0	0	0	0	0	90-100	0	48951	100,100
110	0	0	0	0	0	0	0	0	100-110	0	48951	100,100
120	0	0	0	0	0	0	0	0	110-120	0	48951	100,100
130	0	0	0	0	0	0	0	0	120-130	0	48951	100,100
140	0	0	0	0	0	0	0	0	130-140	0	48951	100,100
150	0	0	0	0	0	0	0	0	140-150	0	48951	100,100
160	0	0	0	0	0	0	0	0	150-160	0	48951	100,100
170	0	0	0	0	0	0	0	0	160-170	0	48951	100,100
180	0	0	0	0	0	0	0	0	170-180	0	48951	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	2325.84	0-10	2325.84	4.75%
10-20	6798.61	0-20	9124.45	18.64%
20-30	10479.16	0-30	19603.61	40.05%
30-40	12045.94	0-40	31649.55	64.66%
40-50	8877.11	0-50	40526.66	82.79%
50-60	4812.94	0-60	45339.60	92.62%
60-70	2397.61	0-70	47737.21	97.52%
70-80	1001.00	0-80	48738.21	99.57%
80-90	212.71	0-90	48950.92	100.00%
90-100	0.00	0-100	48950.92	100.00%
100-110	0.00	0-110	48950.92	100.00%
110-120	0.00	0-120	48950.92	100.00%
120-130	0.00	0-130	48950.92	100.00%
130-140	0.00	0-140	48950.92	100.00%
140-150	0.00	0-150	48950.92	100.00%
150-160	0.00	0-160	48950.92	100.00%
160-170	0.00	0-170	48950.92	100.00%
170-180	0.00	0-180	48950.92	100.00%

4.2 Goniophotometer Test

UGR – Uncorrected Table:

UGR TABLE - UNCORRECTED

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	10.4	11.8	10.8	12.1	12.4	10.6	12.0	11.0	12.3	12.6
	3H	11.2	12.4	11.6	12.7	13.1	11.5	12.7	11.9	13.0	13.4
	4H	11.4	12.5	11.8	12.9	13.3	11.7	12.9	12.1	13.2	13.6
	6H	11.5	12.5	11.9	12.9	13.3	11.9	12.9	12.3	13.3	13.7
	8H	11.5	12.5	11.9	12.9	13.3	11.9	12.9	12.3	13.3	13.7
	12H	11.5	12.5	11.9	12.8	13.3	11.9	12.9	12.3	13.3	13.7
4H	2H	10.7	11.8	11.1	12.2	12.6	10.9	12.1	11.3	12.4	12.8
	3H	11.7	12.6	12.1	13.0	13.4	11.9	12.9	12.4	13.3	13.7
	4H	12.0	12.8	12.4	13.2	13.6	12.3	13.1	12.7	13.5	14.0
	6H	12.1	12.9	12.6	13.3	13.8	12.5	13.2	13.0	13.7	14.1
	8H	12.2	12.8	12.6	13.3	13.8	12.6	13.2	13.0	13.7	14.1
	12H	12.2	12.8	12.7	13.3	13.7	12.6	13.2	13.1	13.7	14.1
8H	4H	12.0	12.7	12.5	13.2	13.6	12.3	13.0	12.8	13.5	13.9
	6H	12.3	12.8	12.8	13.3	13.8	12.6	13.2	13.1	13.7	14.2
	8H	12.3	12.8	12.9	13.3	13.8	12.7	13.2	13.2	13.7	14.2
	12H	12.4	12.8	12.9	13.3	13.9	12.8	13.2	13.3	13.7	14.3
12H	4H	12.0	12.6	12.5	13.1	13.6	12.3	12.9	12.8	13.4	13.9
	6H	12.3	12.8	12.8	13.2	13.8	12.6	13.1	13.2	13.6	14.1
	8H	12.3	12.8	12.9	13.3	13.9	12.7	13.2	13.2	13.6	14.2

Maximum UGR = 14.3

UGR – Corrected Table:

UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	23.9	25.3	24.3	25.6	25.9	24.1	25.5	24.5	25.8	26.1
	3H	24.7	25.9	25.1	26.2	26.6	25.0	26.2	25.4	26.5	26.9
	4H	24.9	26.0	25.3	26.4	26.8	25.2	26.4	25.6	26.7	27.1
	6H	25.0	26.0	25.4	26.4	26.8	25.4	26.4	25.8	26.8	27.2
	8H	25.0	26.0	25.4	26.4	26.8	25.4	26.4	25.8	26.8	27.2
	12H	25.0	26.0	25.4	26.3	26.8	25.4	26.4	25.8	26.8	27.2
4H	2H	24.2	25.3	24.6	25.7	26.1	24.4	25.6	24.8	25.9	26.3
	3H	25.2	26.1	25.6	26.5	26.9	25.4	26.4	25.9	26.8	27.2
	4H	25.5	26.3	25.9	26.7	27.1	25.8	26.6	26.2	27.0	27.5
	6H	25.6	26.4	26.1	26.8	27.3	26.0	26.7	26.5	27.2	27.6
	8H	25.7	26.3	26.1	26.8	27.3	26.1	26.7	26.5	27.2	27.6
	12H	25.7	26.3	26.2	26.8	27.2	26.1	26.7	26.6	27.2	27.6
8H	4H	25.5	26.2	26.0	26.7	27.1	25.8	26.5	26.3	27.0	27.4
	6H	25.8	26.3	26.3	26.8	27.3	26.1	26.7	26.6	27.2	27.7
	8H	25.8	26.3	26.4	26.8	27.3	26.2	26.7	26.7	27.2	27.7
	12H	25.9	26.3	26.4	26.8	27.4	26.3	26.7	26.8	27.2	27.8
12H	4H	25.5	26.1	26.0	26.6	27.1	25.8	26.4	26.3	26.9	27.4
	6H	25.8	26.3	26.3	26.7	27.3	26.1	26.6	26.7	27.1	27.6
	8H	25.8	26.3	26.4	26.8	27.4	26.2	26.7	26.7	27.1	27.7

Maximum UGR = 27.8

4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1 UNIT: ×10cd

γ (DEG) \ C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425
5	2436	2439	2444	2441	2439	2436	2430	2436	2439	2441	2444	2439	2436	2439	2444	2441	2439	2436	2430
10	2425	2434	2438	2439	2434	2425	2416	2425	2434	2439	2438	2434	2425	2434	2438	2439	2434	2425	2416
15	2393	2405	2415	2416	2410	2400	2386	2400	2410	2416	2415	2405	2393	2405	2415	2416	2410	2400	2386
20	2343	2358	2365	2371	2365	2351	2338	2351	2365	2371	2365	2358	2343	2358	2365	2371	2365	2351	2338
25	2261	2275	2286	2290	2280	2270	2262	2270	2280	2290	2286	2275	2261	2275	2286	2290	2280	2270	2262
30	2139	2156	2161	2165	2160	2150	2144	2150	2160	2165	2161	2156	2139	2156	2161	2165	2160	2150	2144
35	1943	1957	1963	1965	1964	1956	1943	1956	1964	1965	1963	1957	1943	1957	1963	1965	1964	1956	1943
40	1589	1601	1600	1600	1592	1591	1587	1591	1592	1600	1600	1601	1589	1601	1600	1600	1592	1591	1587
45	1131	1147	1147	1144	1139	1138	1142	1138	1139	1144	1147	1147	1131	1147	1147	1144	1139	1138	1142
50	757	767	783	787	783	778	779	778	783	787	783	767	757	767	783	787	783	778	779
55	501	514	530	539	536	530	530	530	536	539	530	514	501	514	530	539	536	530	530
60	334	344	356	364	365	361	359	361	365	364	356	344	334	344	356	364	365	361	359
65	221	227	235	243	245	244	240	244	245	243	235	227	221	227	235	243	245	244	240
70	144	146	151	155	157	158	157	158	157	155	151	146	144	146	151	155	157	158	157
75	86.6	87.3	89.8	93.1	95.2	96.1	97.0	96.1	95.2	93.1	89.8	87.3	86.6	87.3	89.8	93.1	95.2	96.1	97.0
80	45.1	45.0	46.7	48.6	49.9	51.0	52.4	51.0	49.9	48.6	46.7	45.0	45.1	45.0	46.7	48.6	49.9	51.0	52.4
85	15.7	15.6	16.4	17.3	18.3	19.0	20.1	19.0	18.3	17.3	16.4	15.6	15.7	15.6	16.4	17.3	18.3	19.0	20.1
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table--2 UNIT: ×10cd

γ (DEG) \ C (DEG)	285	300	315	330	345
0	2425	2425	2425	2425	2425
5	2436	2439	2441	2444	2439
10	2425	2434	2439	2438	2434
15	2400	2410	2416	2415	2405
20	2351	2365	2371	2365	2358
25	2270	2280	2290	2286	2275
30	2150	2160	2165	2161	2156
35	1956	1964	1965	1963	1957
40	1591	1592	1600	1600	1601
45	1138	1139	1144	1147	1147
50	778	783	787	783	767
55	530	536	539	530	514
60	361	365	364	356	344
65	244	245	243	235	227
70	158	157	155	151	146
75	96.1	95.2	93.1	89.8	87.3
80	51.0	49.9	48.6	46.7	45.0
85	19.0	18.3	17.3	16.4	15.6
90	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	H17XXL @300W/3000K/480	Sample ID	231222002-S1
Temperature (°C)	25.4	Humidity (%RH)	41.0

Test Method
The samples were tested according to the ANSI C82.77:2014 The total harmonic distortion shall be measured to the 40th order. The ambient temperature shall be maintained at 25±1°C. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion was calculated.

Test Results

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	iTHD(%)
480.0	60	0.696	301.9	0.904	9.86

5.0 Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2023-11-08	2024-11-07
NTC-F01-006	2.0 meter Integrating Sphere	2023-11-08	2024-11-07
NTC-F01-012	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-013	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-031	Digital Power Meter	2023-08-25	2024-08-24
NTC-F01-019	Temperature & Humidity Meter	2023-11-06	2024-11-05

************End of Report************