



# Photometric Test Report

## Relevant Standards

- IES LM-79-2008
- ANSI C82.77:2014

## Prepared For RAB LIGHTING INC

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## Project Number

**DLF1910105**

## Report Number

**DLF1910105-6a**

## Test Date

**2019/10/10**

## Issue Date

**2019/10/11**

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## 1.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2019/10/10	T8-15-36P2S-865-DE-BYP	F1

### Remark(If any)

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## 2.0 Production Description

**Luminaire Description:** T8-15-36P2S-865-DE-BYP

**Electrical Specification:** 120V,50/60HZ

### Photos of Luminaire Characteristics



## 4.0 LM-79 Measurement and Test Results

### 4.1 Integrating Sphere Test

Model No.	T8-15-36P2S-865-DE-BYP	Sample ID.	F1
Operate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	56.0

#### 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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ .

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  $\pm 0.2$  percent under load.

The sample was measured using  $4\pi$  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 780 nm.

#### Test Result

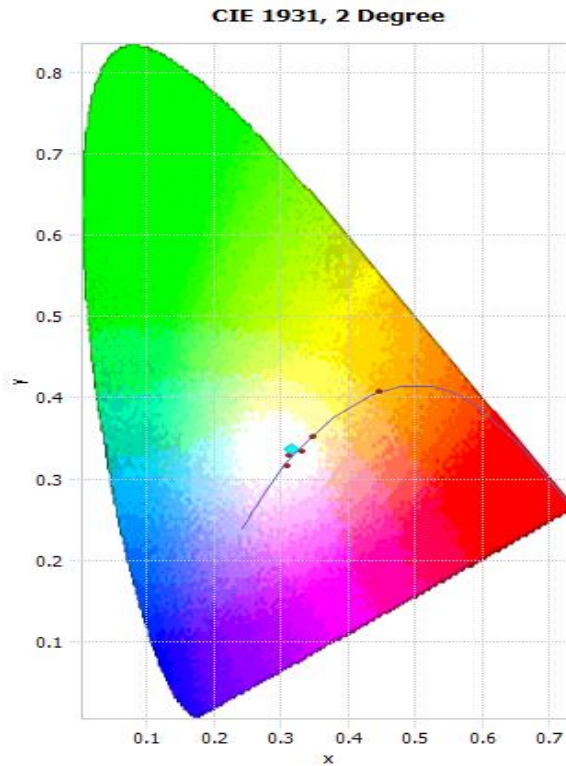
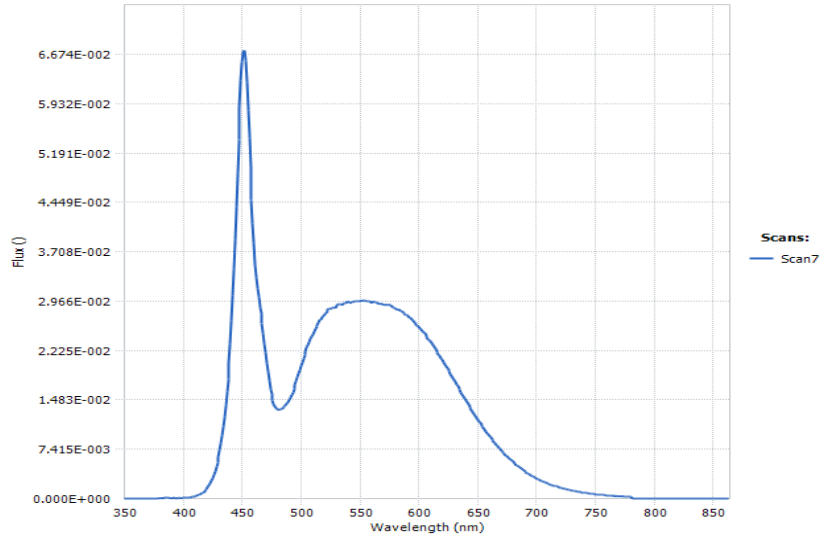
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.02	60	0.126	15.0	0.987

#### Test Result

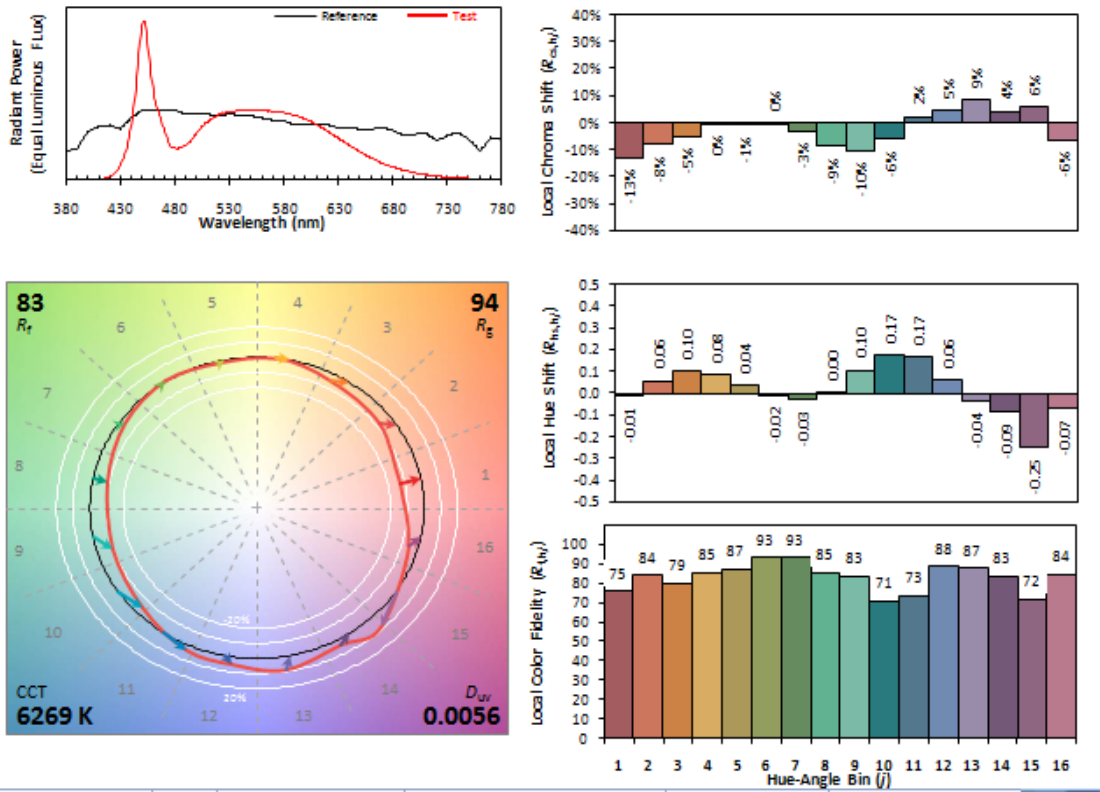
CCT (K)	CRI	Duv	Flux (lm)	Luminous Efficacy (lm/W)
6265	83	5.3E-03	1945	129.8
Rf	Rg	Rcs,h1		
83	94	-13.00%		

## 4.1 Integrating Sphere Test

$\Phi(v)$ :	1.945E03	lumens
$\Phi(v')$ :	4.231E03	lm'
Chrom x:	0.3162	
Chrom y:	0.3371	
Chrom u:	0.1972	
Chrom v:	0.3154	
Duv:	0.0053	
Chrom u':	0.1972	
Chrom v':	0.4731	
$\lambda$ (peak):	451.5	nm
$\lambda$ (center):	452.3	nm
$\lambda$ (centroid):	542.0	nm
$\lambda$ (dom):	494.6	nm
FWHM:	18.9	nm
Purity:	5.5	%
CCT:	6265.0	$^{\circ}\text{K}$
$\eta$ :	N/A	lm/W
SDCM:	2.9 F 6500	
Correlation:	0.0054	
Corr. Coef.:	0.002359946	
RA:	82.20752919	
R1:	80	
R2:	86.6	
R3:	90.3	
R4:	81.7	
R5:	80.5	
R6:	80.8	



### 4.1 Integrating Sphere Test



SPD Table

Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)
380	3.88E-05	421	1.69E-03	461	3.51E-02	501	2.05E-02	541	2.95E-02
381	1.56E-05	422	1.95E-03	462	3.32E-02	502	2.10E-02	542	2.94E-02
382	4.22E-05	423	2.28E-03	463	3.16E-02	503	2.17E-02	543	2.95E-02
383	2.18E-05	424	2.67E-03	464	3.03E-02	504	2.20E-02	544	2.96E-02
384	4.37E-05	425	3.07E-03	465	2.86E-02	505	2.27E-02	545	2.96E-02
385	4.17E-05	426	3.55E-03	466	2.77E-02	506	2.31E-02	546	2.97E-02
386	3.56E-05	427	4.10E-03	467	2.63E-02	507	2.35E-02	547	2.96E-02
387	6.02E-05	428	4.77E-03	468	2.49E-02	508	2.41E-02	548	2.97E-02
388	7.69E-05	429	5.43E-03	469	2.32E-02	509	2.43E-02	549	2.96E-02
389	4.49E-05	430	6.25E-03	470	2.19E-02	510	2.47E-02	550	2.96E-02
390	4.31E-05	431	7.32E-03	471	2.03E-02	511	2.52E-02	551	2.98E-02
391	2.53E-05	432	8.33E-03	472	1.89E-02	512	2.55E-02	552	2.96E-02
392	3.36E-05	433	9.53E-03	473	1.76E-02	513	2.58E-02	553	2.98E-02
393	3.89E-05	434	1.08E-02	474	1.64E-02	514	2.62E-02	554	2.97E-02
394	1.90E-05	435	1.22E-02	475	1.55E-02	515	2.64E-02	555	2.96E-02
395	1.06E-05	436	1.40E-02	476	1.47E-02	516	2.69E-02	556	2.97E-02
396	3.39E-05	437	1.60E-02	477	1.41E-02	517	2.69E-02	557	2.97E-02
397	5.47E-05	438	1.80E-02	478	1.39E-02	518	2.72E-02	558	2.96E-02
398	1.84E-05	439	2.05E-02	479	1.35E-02	519	2.74E-02	559	2.96E-02
399	5.48E-05	440	2.32E-02	480	1.35E-02	520	2.78E-02	560	2.94E-02
400	5.80E-05	441	2.67E-02	481	1.33E-02	521	2.78E-02	561	2.96E-02
401	5.80E-05	442	3.05E-02	482	1.34E-02	522	2.81E-02	562	2.95E-02
402	6.69E-05	443	3.45E-02	483	1.34E-02	523	2.84E-02	563	2.95E-02
403	7.28E-05	444	3.89E-02	484	1.35E-02	524	2.85E-02	564	2.95E-02
404	1.22E-04	445	4.39E-02	485	1.37E-02	525	2.85E-02	565	2.94E-02
405	1.36E-04	446	4.90E-02	486	1.38E-02	526	2.86E-02	566	2.93E-02
406	1.39E-04	447	5.40E-02	487	1.40E-02	527	2.86E-02	567	2.94E-02
407	1.91E-04	448	5.89E-02	488	1.43E-02	528	2.87E-02	568	2.93E-02
408	2.00E-04	449	6.28E-02	489	1.45E-02	529	2.87E-02	569	2.91E-02
409	2.26E-04	450	6.57E-02	490	1.49E-02	530	2.91E-02	570	2.91E-02
410	2.84E-04	451	6.72E-02	491	1.52E-02	531	2.91E-02	571	2.92E-02
411	3.52E-04	452	6.74E-02	492	1.56E-02	532	2.92E-02	572	2.91E-02
412	3.94E-04	453	6.58E-02	493	1.59E-02	533	2.92E-02	573	2.91E-02
413	4.79E-04	454	6.26E-02	494	1.64E-02	534	2.93E-02	574	2.92E-02
414	5.72E-04	455	5.83E-02	495	1.71E-02	535	2.91E-02	575	2.90E-02
415	6.42E-04	456	5.42E-02	496	1.76E-02	536	2.93E-02	576	2.90E-02
416	7.66E-04	457	4.95E-02	497	1.83E-02	537	2.93E-02	577	2.88E-02
417	8.56E-04	458	4.49E-02	498	1.88E-02	538	2.94E-02	578	2.88E-02
418	1.08E-03	459	4.14E-02	499	1.93E-02	539	2.96E-02	579	2.87E-02
419	1.22E-03	460	3.84E-02	500	2.00E-02	540	2.95E-02	580	2.86E-02
420	1.44E-03								

Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)	Wavel Length (nm)	Spectral Power (W/nm)
581	2.85E-02	621	2.04E-02	661	9.14E-03	701	2.93E-03	741	8.54E-04
582	2.83E-02	622	2.02E-02	662	8.93E-03	702	2.84E-03	742	7.82E-04
583	2.84E-02	623	1.98E-02	663	8.67E-03	703	2.76E-03	743	8.11E-04
584	2.82E-02	624	1.96E-02	664	8.42E-03	704	2.65E-03	744	7.36E-04
585	2.82E-02	625	1.94E-02	665	8.22E-03	705	2.60E-03	745	7.26E-04
586	2.81E-02	626	1.90E-02	666	8.01E-03	706	2.51E-03	746	6.84E-04
587	2.79E-02	627	1.87E-02	667	7.82E-03	707	2.39E-03	747	7.32E-04
588	2.78E-02	628	1.84E-02	668	7.56E-03	708	2.35E-03	748	6.45E-04
589	2.75E-02	629	1.81E-02	669	7.37E-03	709	2.26E-03	749	6.20E-04
590	2.76E-02	630	1.78E-02	670	7.15E-03	710	2.18E-03	750	6.01E-04
591	2.74E-02	631	1.75E-02	671	7.01E-03	711	2.13E-03	751	5.23E-04
592	2.71E-02	632	1.71E-02	672	6.84E-03	712	2.07E-03	752	5.66E-04
593	2.72E-02	633	1.69E-02	673	6.64E-03	713	2.02E-03	753	5.45E-04
594	2.68E-02	634	1.65E-02	674	6.44E-03	714	1.92E-03	754	5.40E-04
595	2.68E-02	635	1.63E-02	675	6.33E-03	715	1.87E-03	755	4.85E-04
596	2.65E-02	636	1.59E-02	676	6.13E-03	716	1.81E-03	756	4.76E-04
597	2.63E-02	637	1.57E-02	677	5.97E-03	717	1.79E-03	757	5.25E-04
598	2.60E-02	638	1.53E-02	678	5.79E-03	718	1.72E-03	758	4.82E-04
599	2.61E-02	639	1.50E-02	679	5.66E-03	719	1.69E-03	759	4.66E-04
600	2.58E-02	640	1.47E-02	680	5.48E-03	720	1.61E-03	760	4.49E-04
601	2.56E-02	641	1.44E-02	681	5.28E-03	721	1.55E-03	761	4.25E-04
602	2.54E-02	642	1.41E-02	682	5.16E-03	722	1.52E-03	762	4.34E-04
603	2.51E-02	643	1.39E-02	683	4.99E-03	723	1.48E-03	763	3.70E-04
604	2.49E-02	644	1.35E-02	684	4.89E-03	724	1.44E-03	764	4.15E-04
605	2.48E-02	645	1.32E-02	685	4.74E-03	725	1.35E-03	765	3.67E-04
606	2.45E-02	646	1.29E-02	686	4.62E-03	726	1.34E-03	766	3.13E-04
607	2.42E-02	647	1.27E-02	687	4.45E-03	727	1.30E-03	767	3.38E-04
608	2.40E-02	648	1.24E-02	688	4.35E-03	728	1.23E-03	768	3.43E-04
609	2.38E-02	649	1.22E-02	689	4.21E-03	729	1.21E-03	769	3.10E-04
610	2.36E-02	650	1.18E-02	690	4.07E-03	730	1.11E-03	770	3.27E-04
611	2.34E-02	651	1.16E-02	691	3.95E-03	731	1.14E-03	771	2.88E-04
612	2.30E-02	652	1.13E-02	692	3.82E-03	732	1.12E-03	772	3.58E-04
613	2.27E-02	653	1.11E-02	693	3.74E-03	733	1.06E-03	773	2.79E-04
614	2.25E-02	654	1.08E-02	694	3.64E-03	734	1.04E-03	774	2.48E-04
615	2.22E-02	655	1.06E-02	695	3.52E-03	735	1.03E-03	775	2.87E-04
616	2.19E-02	656	1.04E-02	696	3.38E-03	736	1.01E-03	776	2.90E-04
617	2.16E-02	657	1.00E-02	697	3.27E-03	737	9.39E-04	777	2.49E-04
618	2.14E-02	658	9.79E-03	698	3.14E-03	738	8.92E-04	778	2.60E-04
619	2.10E-02	659	9.62E-03	699	3.08E-03	739	8.58E-04	779	2.29E-04
620	2.08E-02	660	9.38E-03	700	2.99E-03	740	8.71E-04	780	2.73E-04

## 6.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2018/12/26	2019/12/25
DLF108	Auxiliary Lamp	2018/12/26	2019/12/25
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2018/12/26	2019/12/25
DLF116	AC Power Source	2018/12/26	2019/12/25
DLF113	Power Meter	2018/12/26	2019/12/25
DLF112	Temperature Recorder	2018/12/26	2019/12/25
DLF114	Temperature & Humidity Datalogger	2018/12/26	2019/12/25
DLF101	Goniophotometer	2018/12/26	2019/12/25
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2018/12/26	2019/12/25
DLF104	AC Power Source	2018/12/26	2019/12/25
DLF507	DC Power Source	2018/12/26	2019/12/25
DLF102	Power Meter	2018/12/26	2019/12/25
DLF111	Temperature & Humidity Datalogger	2018/12/26	2019/12/25
DLF119	Power Meter	2018/12/26	2019/12/25
DLF031	Temperature data logger	2018/12/26	2019/12/25
DLF022	Digital power meter	2018/12/26	2019/12/25
DLF003	Temperature & Humidity Datalogger	2018/12/26	2019/12/25

\*\*\*\*\* End of Test Report\*\*\*\*\*