



8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Report No: L012011402TM30

Date: 1/14/2020



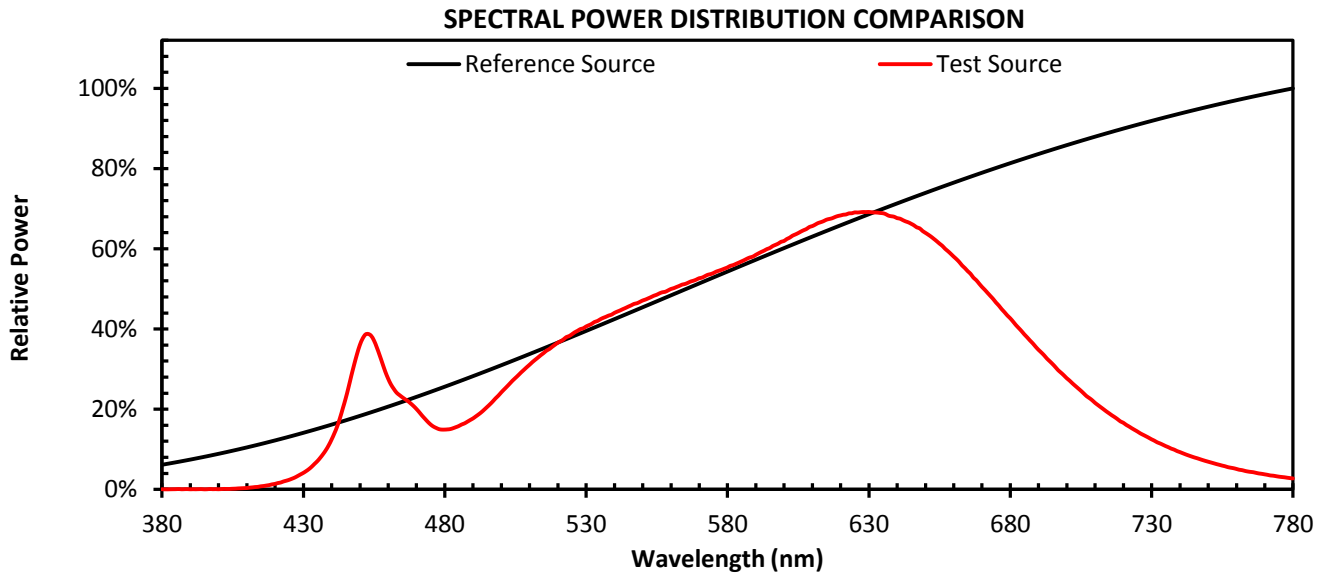
TM-30-15 REPORT

Report No:	L012011402TM30
Prepared For:	Tivoli, LLC 15602 Mosher Avenue, Tustin, CA 92780
Model Number:	FWC30M1.0
Testing Lab:	Light Laboratory Inc.
Reference report No:	L012011402
Remark:	This report is based on the data from Light Laboratory Inc. report L012011402

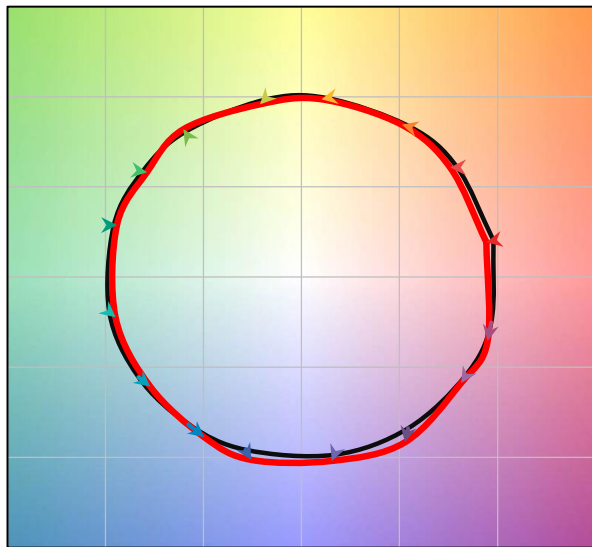
Results Summary

Metric	Result	Notes
R_f	91	IES TM-30-15 Fidelity Index
R_g	100	IES TM-30-15 Gamut Index
CIE R_a	93	CIE Test Color Method General Index
R_9	70	CIE Test Color Method Sample Nine Score
$R_{f,skin}$	95	Average of CES15 and CES18 (skin)
CCT	3044	Correlated Color Temperature
D_{uv}	0.0010	Distance from the blackbody locus
x	0.4352	CIE 1931 chromaticity coordinate
y	0.4059	CIE 1931 chromaticity coordinate
u	0.2487	CIE 1960 chromaticity coordinate
v	0.3479	CIE 1960 chromaticity coordinate
u'	0.2487	CIE 1976 chromaticity coordinate
v'	0.5218	CIE 1976 chromaticity coordinate

*All Results in accordance to IES TM-30-15: IES Method for Evaluating Light Source Color Rendition

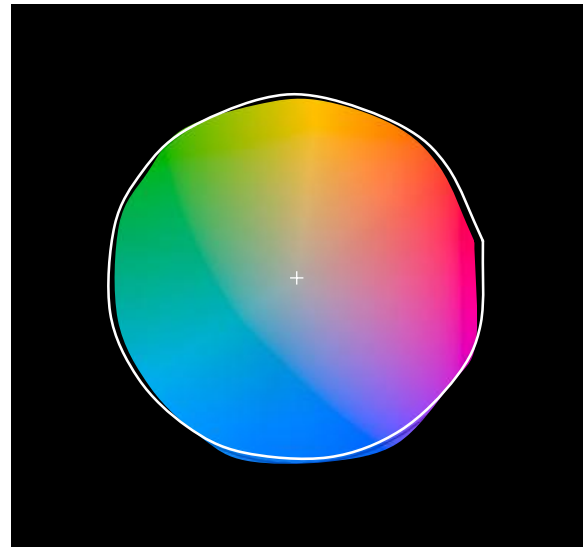


COLOR VECTOR GRAPHIC

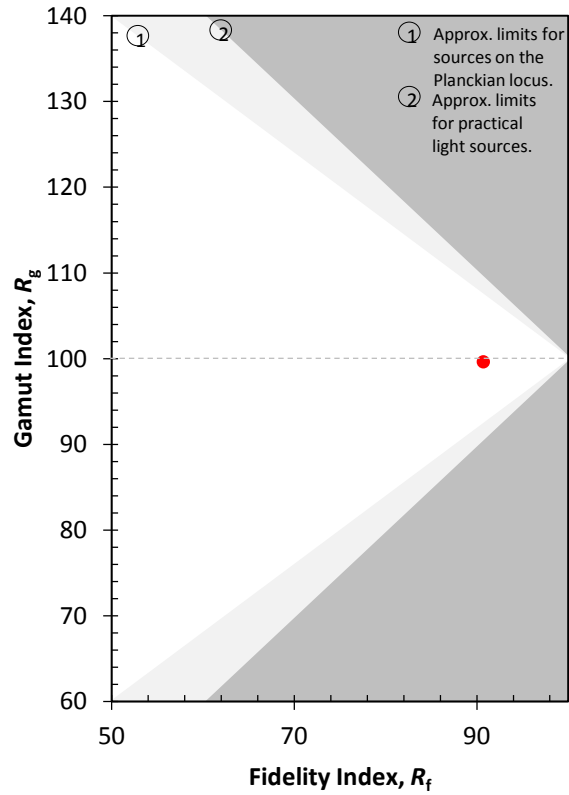


— Reference Illuminant — Test Source

COLOR DISTORTION GRAPHIC



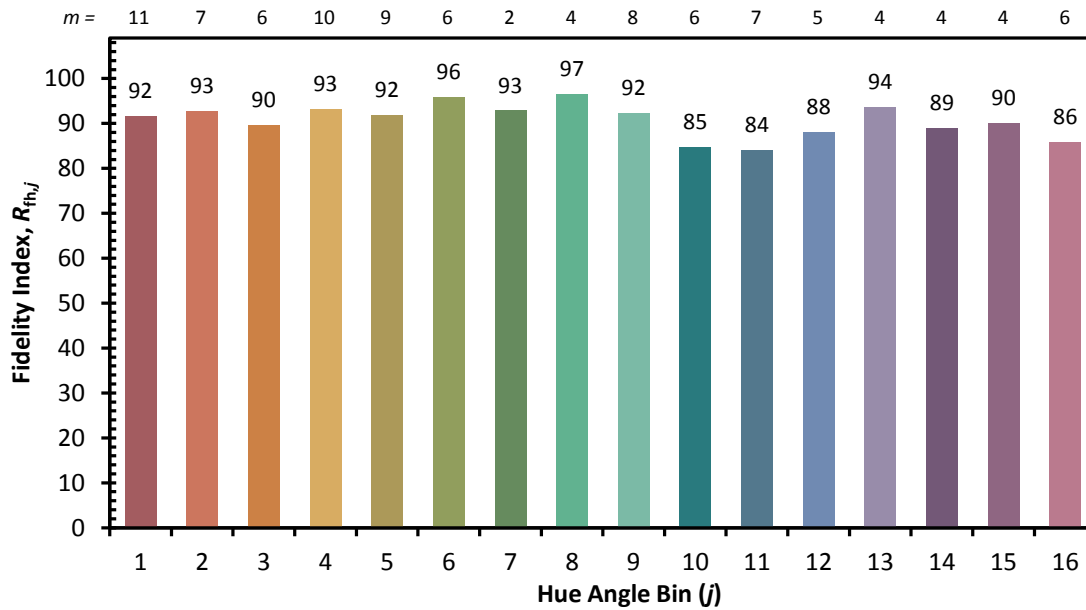
*All Results in accordance to IES TM-30-15: IES Method for Evaluating Light Source Color Rendition



Hue Bin	R_f	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	0%
2	93	-3%	2%
3	90	-1%	4%
4	93	-1%	3%
5	92	-2%	3%
6	96	2%	0%
7	93	-2%	-1%
8	97	-2%	0%
9	92	-3%	4%
10	85	-2%	8%
11	84	1%	11%
12	88	5%	4%
13	94	3%	-2%
14	89	6%	-6%
15	90	0%	-5%
16	86	0%	-10%

*All Results in accordance to IES TM-30-15: IES Method for Evaluating Light Source Color Rendition

Hue Angle Bin vs. Fidelity Index



Hue Angle Bin vs. Change of Chroma

