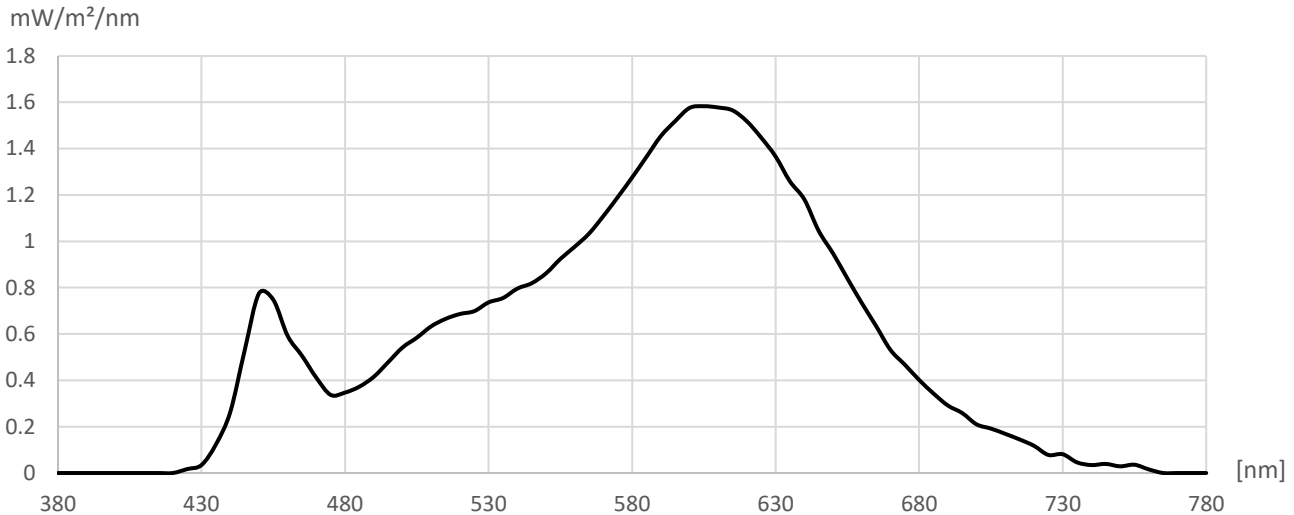


Measurement Protocol



Manufacturer: Flexfire LEDs, Inc.
 Type: White LED Sign Modules
 Model: MOD-30K

Measurement file: MOD-30K.CSV
 Date of measurement: 25.10.2023
 Time of measurement: 15:35:20



R1 = 85.9	Ra = 85.4	Illuminance	73.93 lx	CIE1931
R2 = 95.8	Re = 81.4	Ee	0.227 W/m ²	x = 0.4422
R3 = 92.8	GAI = 54.2	LER	326.2 lm/W	y = 0.4001
R4 = 84.2				
R5 = 86.9	TLCI = 73.0	Correlated Color Temperature (CCT)	2,879 K	CIE1976
R6 = 95.0		Duv	-0.0022	u' = 0.2557
R7 = 81.4	PPFD			v' = 0.5206
R8 = 61.1	[μmol/m ² s]	Saturation	52.80 %	
R9 = 17.0	1.08			CIE1960
R10 = 90.8		Dominant wavelength	583 nm	u = 0.2557
R11 = 85.8		Peak wavelength	606 nm	v = 0.3471
R12 = 80.7				
R13 = 88.8		Flicker frequency	% < 1.0	TM30
R14 = 96.8		Percent Flicker	< 1.0	Rf = 85.0
R15 = 77.9		Flicker index	% < 1.0	Rg = 96.0

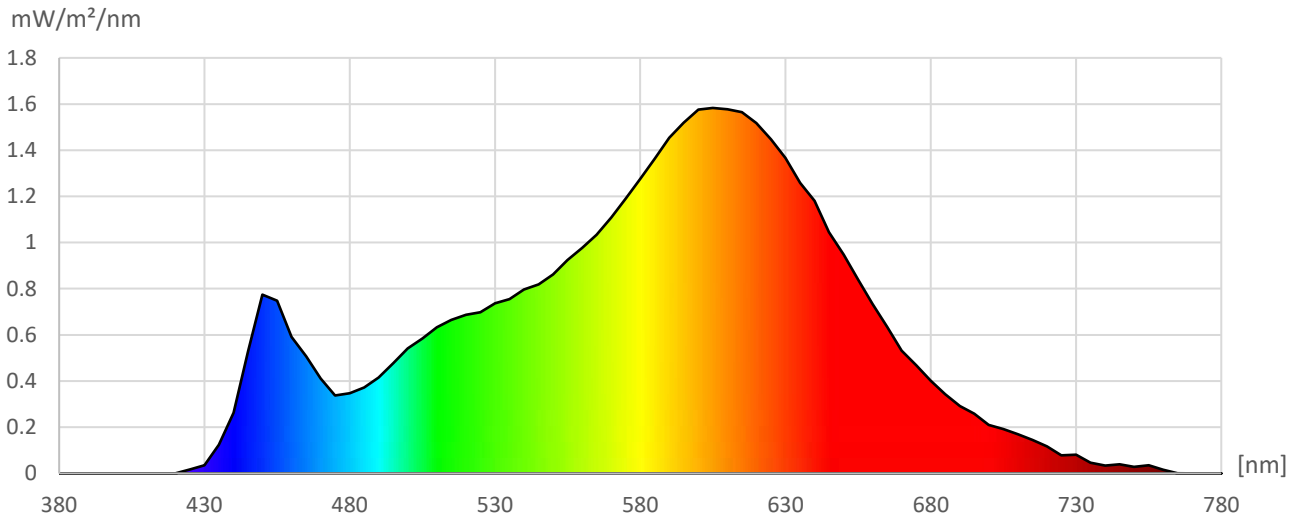
[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm	[nm]	mW/m ² /nm
380	0.00	440	0.26	500	0.54	560	0.98	620	1.52	680	0.40	740	0.03
385	0.00	445	0.53	505	0.58	565	1.03	625	1.45	685	0.34	745	0.04
390	0.00	450	0.77	510	0.63	570	1.11	630	1.37	690	0.29	750	0.03
395	0.00	455	0.75	515	0.67	575	1.19	635	1.26	695	0.26	755	0.04
400	0.00	460	0.59	520	0.69	580	1.28	640	1.18	700	0.21	760	0.02
405	0.00	465	0.51	525	0.70	585	1.36	645	1.04	705	0.19	765	0.00
410	0.00	470	0.41	530	0.74	590	1.45	650	0.95	710	0.17	770	0.00
415	0.00	475	0.34	535	0.76	595	1.52	655	0.84	715	0.14	775	0.00
420	0.00	480	0.35	540	0.80	600	1.58	660	0.73	720	0.12	780	0.00
425	0.02	485	0.37	545	0.82	605	1.58	665	0.63	725	0.08		
430	0.03	490	0.42	550	0.86	610	1.58	670	0.53	730	0.08		
435	0.12	495	0.48	555	0.92	615	1.57	675	0.47	735	0.05		

Measurement Protocol



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[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm	[nm]	mW/m²/nm
380	0.00	535	0.76	690	0.29								
385	0.00	540	0.80	695	0.26								
390	0.00	545	0.82	700	0.21								
395	0.00	550	0.86	705	0.19								
400	0.00	555	0.92	710	0.17								
405	0.00	560	0.98	715	0.14								
410	0.00	565	1.03	720	0.12								
415	0.00	570	1.11	725	0.08								
420	0.00	575	1.19	730	0.08								
425	0.02	580	1.28	735	0.05								
430	0.03	585	1.36	740	0.03								
435	0.12	590	1.45	745	0.04								
440	0.26	595	1.52	750	0.03								
445	0.53	600	1.58	755	0.04								
450	0.77	605	1.58	760	0.02								
455	0.75	610	1.58	765	0.00								
460	0.59	615	1.57	770	0.00								
465	0.51	620	1.52	775	0.00								
470	0.41	625	1.45	780	0.00								
475	0.34	630	1.37										
480	0.35	635	1.26										
485	0.37	640	1.18										
490	0.42	645	1.04										
495	0.48	650	0.95										
500	0.54	655	0.84										
505	0.58	660	0.73										
510	0.63	665	0.63										
515	0.67	670	0.53										
520	0.69	675	0.47										
525	0.70	680	0.40										
530	0.74	685	0.34										

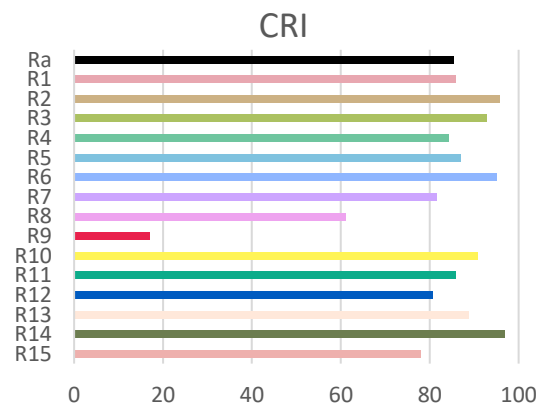
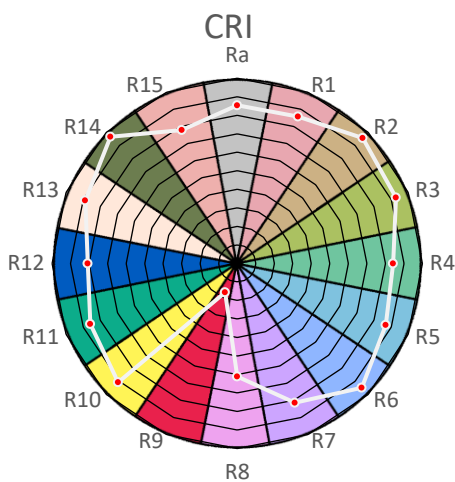
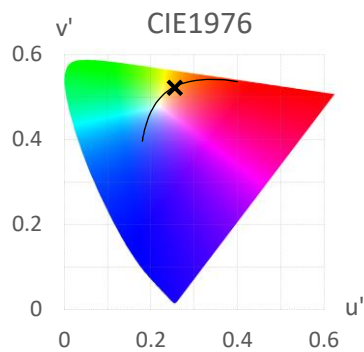
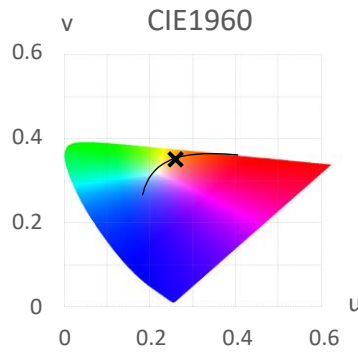
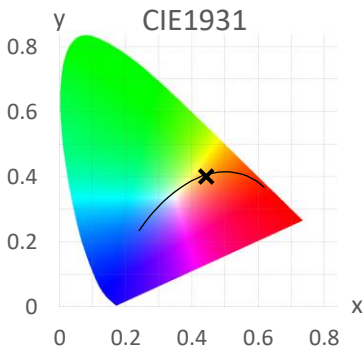
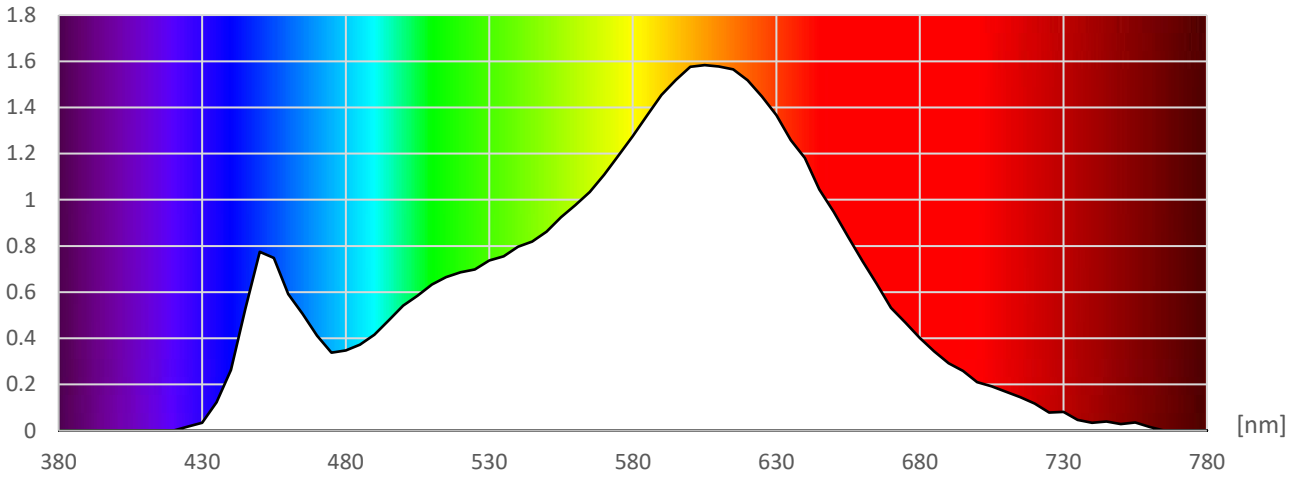
Measurement Protocol



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mW/m²/nm

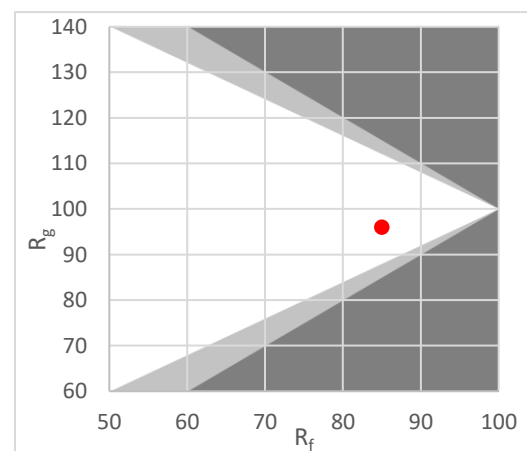
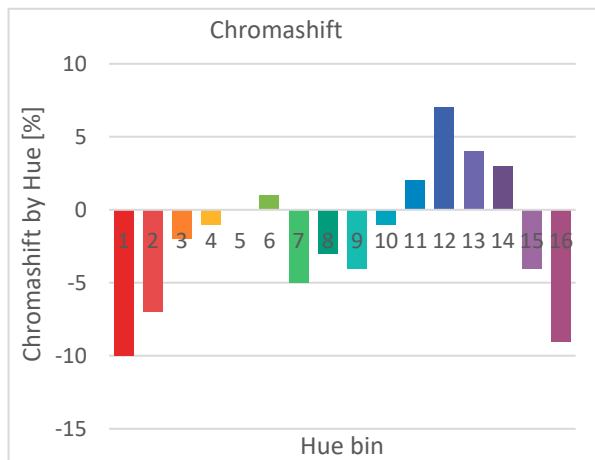
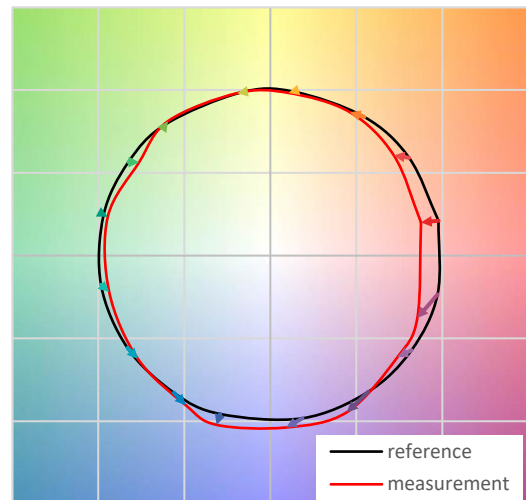
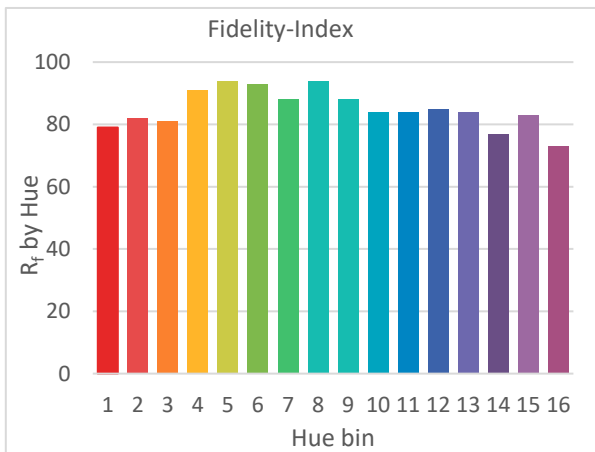
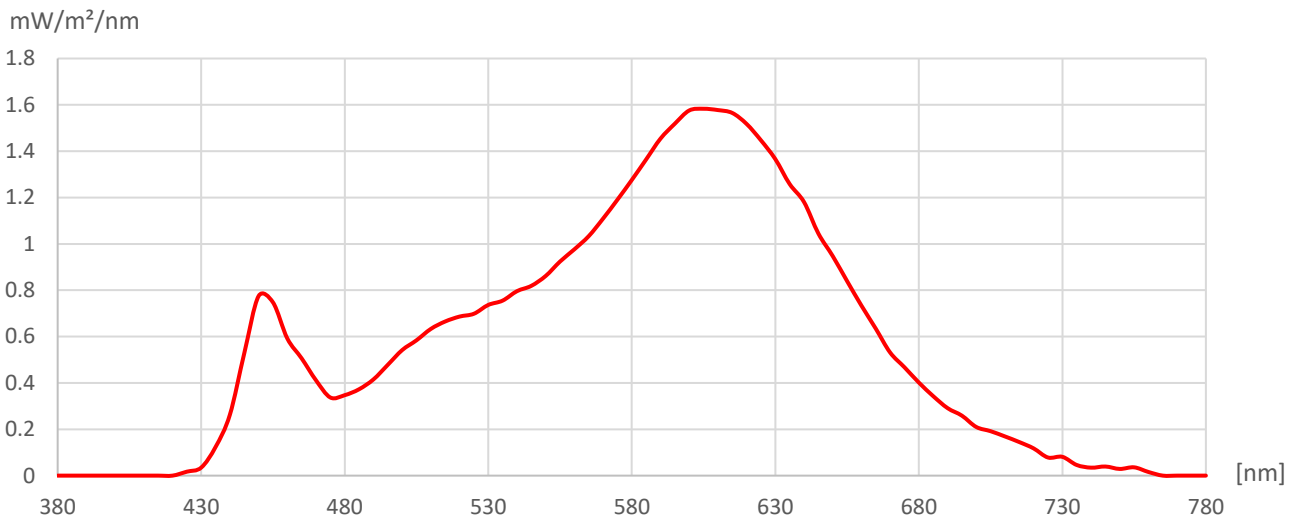


Measurement Protocol



Manufacturer: Flexfire LEDs, Inc.
 Type: White LED Sign Modules
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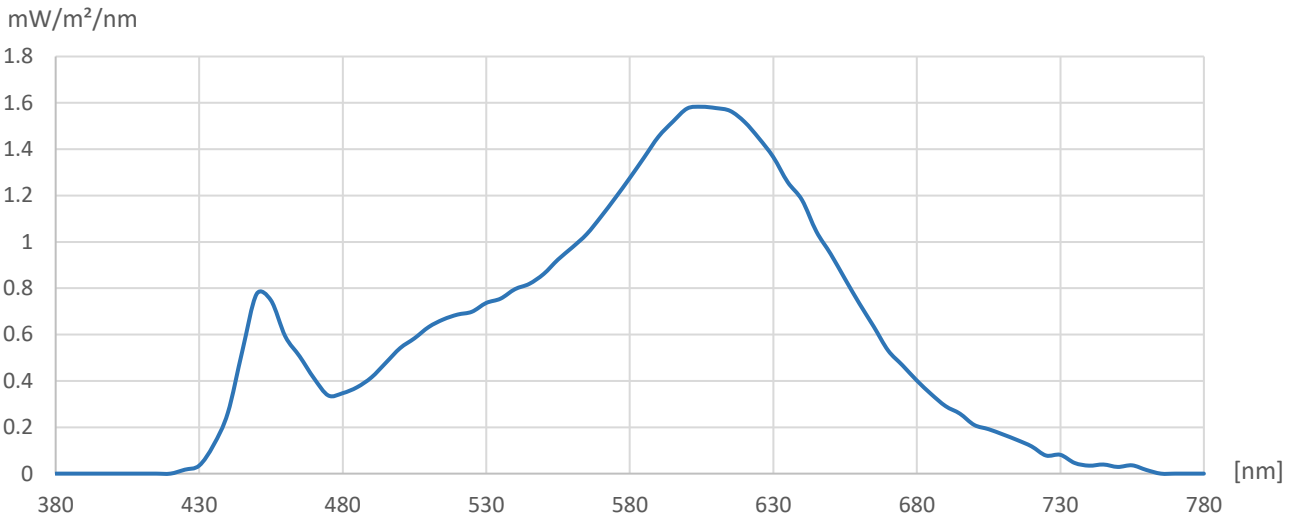


Measurement Protocol



Manufacturer: Flexfire LEDs, Inc.
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 Model: MOD-30K

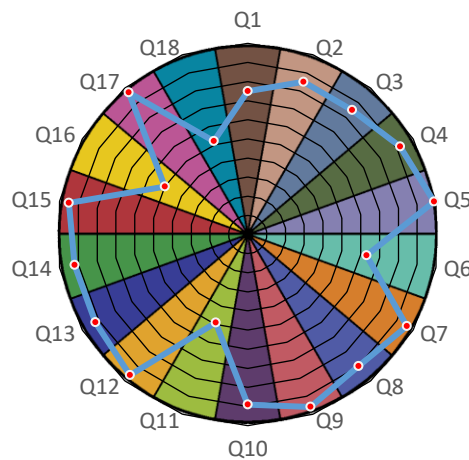
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correlated color temperature (CCT) 2,879 K
 TLCI 73

Reference Spectrum Plank

	Lightness	Chroma	Hue
R	3	2	0
R/Y	0	1	-2
Y	0	0	-1
Y/G	0	0	1
G	0	0	1
G/C	0	0	1
C	0	0	1
C/B	0	0	-1
B	0	-1	-1
B/M	1	0	4
M	2	1	5
M/R	3	1	3



Test Colour	Value	Test Colour	Value	Test Colour	Value
Q1 Dark skin	75	Q7 Orange	96	Q13 Blue	92
Q2 Light skin	85	Q8 Purplish blue	90	Q14 Green	92
Q3 Blue sky	85	Q9 Moderate red	96	Q15 Red	95
Q4 Foliage	92	Q10 Purple	89	Q16 Yellow	50
Q5 Blue flower	99	Q11 Yellow green	49	Q17 Magenta	97
Q6 Bluish green	63	Q12 Orange yellow	96	Q18 Cyan	52