

LEOTEK Electronics USA LLC

TEST REPORT

SCOPE OF WORK

Intertek Traffic Signal ITE Program Certification Testing
of 5yr 8" Clear and Tinted Red Balls.

REPORT NUMBER

106110477CRT-001R

ISSUE DATE

28-Mar-2025

PAGES

19

DOCUMENT CONTROL NUMBER

NA
© 2025 INTERTEK



**WARNING: This document may contain information subject to EARR99.
Diversion contrary to US law is prohibited.**

Test Report			
Company Name	LEOTEK Electronics USA LLC	Test Location	Intertek Testing Services NA
Address	1955 Lundy Avenue	Address	3933 US Rt 11
	San Jose, CA 95131		Cortland, NY 13045
			USA
Client Contact	Frank Saltani	Quote Number	Qu-01514889-1
Phone	408-380-1788 Ext. 202	Test Start Date	February 21, 2025
Email	frank@leotek.com	Completion Date	March 27, 2025

Standard(s)
ITE, Circular Signal Supplement, dated June 27, 2005.

Spec.	Test name	Clause	Tinted	Clear
			Result	
ITE	Conditioning	6.4.2	Pass	Pass
ITE	Mechanical Vibration	6.4.3.1	Pass**	
ITE	Temperature Cycling	6.4.3.2	Pass	Pass
ITE	Moisture Resistance	6.4.3.3	Pass**	
ITE	Luminous Intensity	6.4.4.1, 2,3,4	Pass	Pass
ITE	Luminance Uniformity	6.4.4.5	Pass	Pass
ITE	Chromaticity	6.4.4.6	Pass	Pass
ITE	Color Uniformity	6.4.4.7	Pass	Pass
ITE	Lens Abrasion	6.4.5.2	Pass	Pass
ITE	Current Consumption	6.4.6.1	Pass	Pass
ITE	Low Voltage Turn Off	6.4.6.2	Pass***	
ITE	Turn-on/Turn-off Times	6.4.6.3	Pass***	
ITE	Transient Voltage Immunity	6.4.6.4	Pass***	
ITE	Electronic Noise	6.4.6.5	Pass***	
ITE	Power Factor	6.4.6.6	Pass	Pass*
ITE	Total Harmonic Distortion	6.4.6.7	Pass	Pass*
ITE	Load Switch Compatibility	6.4.7.1	Pass***	
ITE	Off State Voltage Decay	6.4.7.2	Pass***	
ITE	Failed State Impedance	6.4.8	Pass***	

*The client states the clear lens model is exactly the same as the tinted model with the exception of the lens. As a result, the electrical testing for the clear is covered by the tinted results.

**Covered under test report 106110477CRT-001Y.

***Covered under Dialight test report 105587577CRT-001R.

Results Key	
Pass	Compliant
Fail	Non-compliant
TBD	Compliance not determined
NT	Not tested in this project
NA	Test not applicable

John C. Robins

John C. Robins
Engineer
Lighting

Christopher W. Metcalf

Christopher W. Metcalf
Engineering Supervisor
Lighting

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. Statement of Conformity – "Simple Acceptance" rule of ISO/IEC GUIDE 98-4:2012(E), also called "Shared Risk approach" of ILAC-G8:09/2019 guide.

Sample Information				
Date Rec.	Intertek ID	Description	Condition	Model No.
2/17/25	CRT2502170837-8	5yr 8" Red Tinted Ball	Engineering	See Below

Note: Clear lenses provided.

Further Sample Description

Intertek Sample Number	Description	Model Number	Serial Number
CRT2502170837-008-4	8" Red Ball Tinted	433-1110-003XL	A2412011830
CRT2502170837-008-5	8" Red Ball Tinted	433-1110-003XL	A2412011831
CRT2502170837-008-6	8" Red Ball Tinted	433-1110-003XL	A2412011832
CRT2502170837-008-7	8" Red Ball Clear	433-1170-003XL	A2412011833
CRT2502170837-008-8	8" Red Ball Clear	433-1170-003XL	A2412011834
CRT2502170837-008-9	8" Red Ball Clear	433-1170-003XL	A2412011835

General Requirements

Intertek Sample Number	ETL Cert. Number	Label Identification	Lens Orientation	Color Coded Wires
CRT2502170837-008-4	NA	Pass	Pass	Red/White
CRT2502170837-008-5	NA	Pass	Pass	Red/White
CRT2502170837-008-6	NA	Pass	Pass	Red/White
CRT2502170837-008-7	NA	Pass	Pass	Red/White
CRT2502170837-008-8	NA	Pass	Pass	Red/White
CRT2502170837-008-9	NA	Pass	Pass	Red/White

General Requirements

Intertek Sample Number	600V / 20 AWG Min.	Wire Length $\geq$ 39"	Service Rating +105°C
CRT2502170837-008-4	600V / 18 AWG	Pass	Pass
CRT2502170837-008-5	600V / 18 AWG	Pass	Pass
CRT2502170837-008-6	600V / 18 AWG	Pass	Pass
CRT2502170837-008-7	600V / 18 AWG	Pass	Pass
CRT2502170837-008-8	600V / 18 AWG	Pass	Pass
CRT2502170837-008-9	600V / 18 AWG	Pass	Pass

Sample Modification Log	
Date	Modification description
2/21/25	AC Cable: Red/White_C-G000000016
	Waterproof Cable Gland : NYLCGL-H203BM
	Back Cover: C-A000000098
	Heat Sink: C-A000000093
	Metal PCB: C-E000000014
	Connector: CNRP4-A2001WRBS04P
	LED: LEDLXR-LTPLC08ERS
	Thermistor: C-F000000025
	2nd Lens: PPCTSL-LENS008B
	SPS: _5y SPS_C-D000000002
	Power Clip_C-A000000092
	Connect Cable: C-G000000020
	Fresnel Lens: PPCTSL-FL08A2
	O-ring: _8" _PRBTSL-LG0806
	Gasket: _8" Gasket_AF1040100001
	Front Cover Tinted: PPCTSL-FC08RN1Z
	Front Cover Clear: PPCTSL-FC08WN1Z

Picture(s)



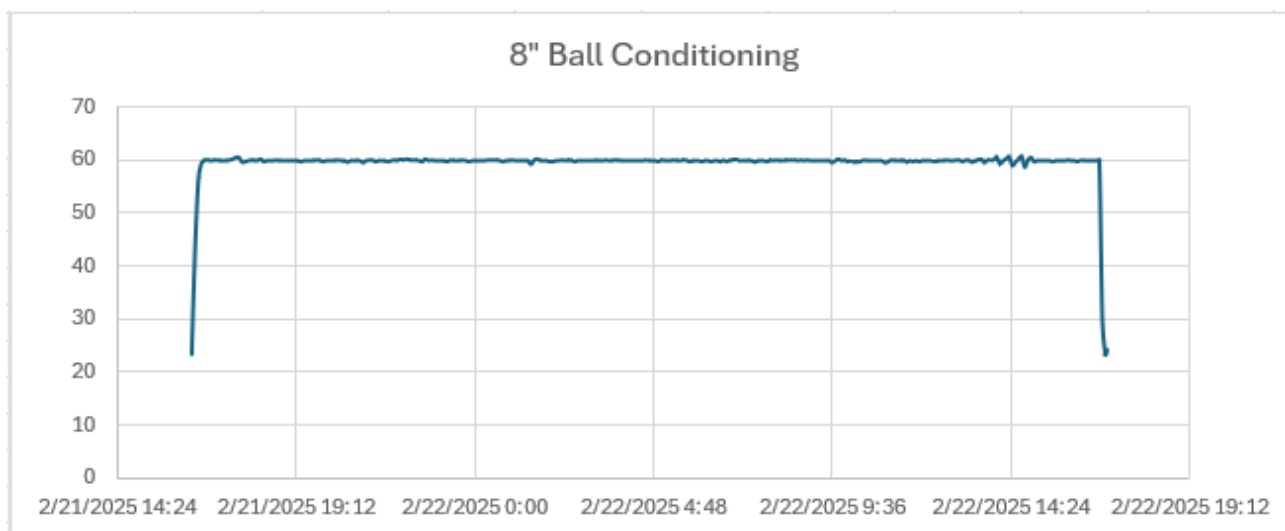
Note: The client supplied clear lenses for the modules, The clear lens model number is 433-1170-003XL.

Conditioning 6.4.2

The submitted LED signal modules were subjected to conditioning prior to the environmental tests. The samples were energized for a minimum of 24 hours, at 100% duty cycle in an ambient temperature of +60°C (+140°F). At the conclusion of the test, the modules shall be visually inspected for damage and checked for proper operation.

Results

Intertek Sample Number	Description	Visual Inspection		Operational Check	
		Pre	Post	Pre	Post
CRT2502170837-008-4	8" Red Ball Tinted	Pass	Pass	Pass	Pass
CRT2502170837-008-5	8" Red Ball Tinted	Pass	Pass	Pass	Pass
CRT2502170837-008-6	8" Red Ball Tinted	Pass	Pass	Pass	Pass
CRT2502170837-008-7	8" Red Ball Clear	Pass	Pass	Pass	Pass
CRT2502170837-008-8	8" Red Ball Clear	Pass	Pass	Pass	Pass
CRT2502170837-008-9	8" Red Ball Clear	Pass	Pass	Pass	Pass



Measured Voltage: 120.1 Vac

Complies: ☒ YES ☐ NO

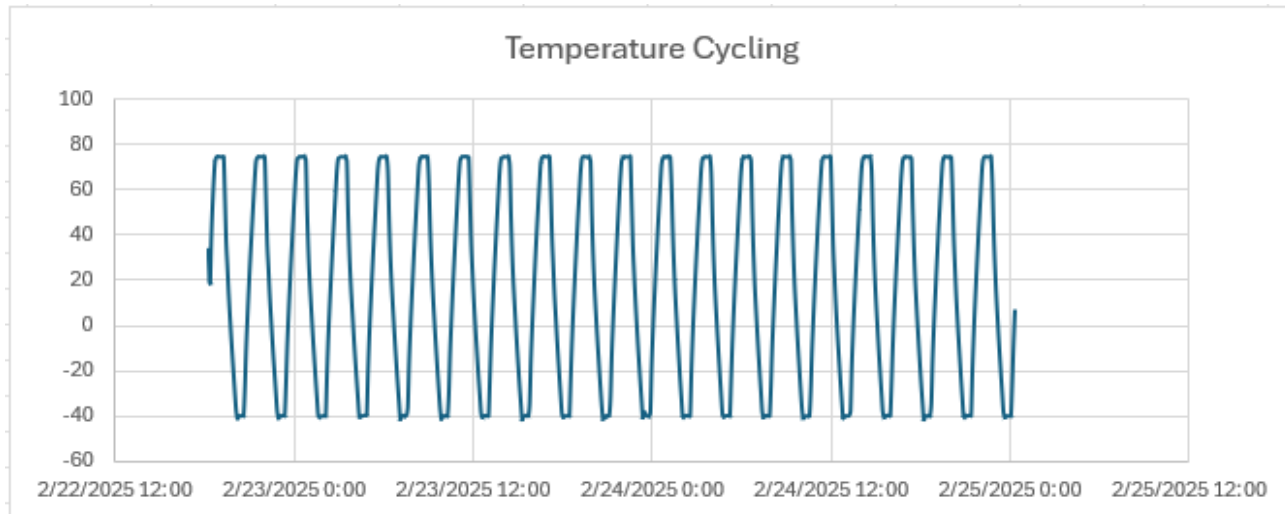
Tested By:	John Robins	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	13,14	Completion Date:	22-Feb-2025
Amb (°C):	NA	RH%	NA

Temperature Cycling 6.4.3.2

The submitted tinted and clear LED signal modules were subjected to temperature cycling according to MIL-STD-883, Method 1010. Twenty cycles were performed with a 30 minute transfer time between temperature extremes and a 30 minute dwell time at the extremes. The temperature cycled between -40°C and +74°C. The samples were non-operating. At the conclusion of the test, the module shall be free of damage and moisture and be fully operational.

Results

Intertek Sample Number	Description	Visual Inspection	Operational Check
CRT2502170837-008-4	8" Red Ball Tinted	Pass	Pass
CRT2502170837-008-5	8" Red Ball Tinted	Pass	Pass
CRT2502170837-008-6	8" Red Ball Tinted	Pass	Pass
CRT2502170837-008-7	8" Red Ball Clear	Pass	Pass
CRT2502170837-008-8	8" Red Ball Clear	Pass	Pass
CRT2502170837-008-9	8" Red Ball Clear	Pass	Pass



Complies: ☒ YES ☐ NO

Tested By:	John Robins	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	13	Completion Date:	25-Feb-2025
Amb (°C):	NA	RH%	NA

Luminous Intensity 6.4.4.1 through 6.4.4.4

The intensity distribution tests on the submitted LED traffic signal modules were performed with the Intertek 25 meter Gonio photometer. The Gonio photometer was in accordance with the goniometer described in Section 11.02 (Test Apparatus) of the Institute of Transportation Engineers' Vehicle Traffic Control Signal Heads Standard Test Method. The calibration of the Gonio photometer is traceable to the National Institute of Standards and Technology. The LED modules were operated at 120 volts AC. The alignment of the LED module was performed in accordance with Section 11.03 (Alignment of Optical Unit for Test) of the Institute of Transportation Engineers' Vehicle Traffic Control Signal Heads Standard Test Method. The submitted LED signal modules were tested for maintained minimum luminous intensity at each of 78 points indicated in Table 1, of the referenced specification. These measurements were recorded at an ambient temperature of 25°C. The green LED signal modules were energized at nominal operating voltage, at a 100% duty cycle for 60 minutes.

A relative luminous intensity measurement is taken in a region from 0 to 7.5° down, and from 7.5° left to 7.5° right. The measurement is taken at 80 Vac, 120 Vac and 135 Vac. When the 80 Vac and 135 Vac factors are applied to the photometric data the units shall still meet the photometric requirements of each model.

A diminution factor was measured by using the submitted samples. The modules were mounted in a dual compartment temperature chamber with the lensed portion in one compartment and all portions behind the lens within the other compartment. At room ambient temperature (both inside and outside the chamber) and in calm air outside the chamber, the modules were energized per the conditions described above and a single on-axis reading (IA) taken and recorded. With the modules off, the chamber was heated to 74°C behind the lens and 49°C in front of the lens, and allowed to stabilize. Following stabilization, the modules were energized per the above cycle and the single on-axis reading (IH) taken and recorded. A diminution factor was calculated (IH/IA). The readings recorded initially were factored by the diminution factor.

Luminous Intensity 6.4.4.1 through 6.4.4.4

Sample	CRT2502170837-008-4				Target Input voltage		Measured Input Voltage			H, V Lum. Intensity		Vac Variation Factor		MMLI Factor
Module	8" Ball				80Vac		80.0		Vac		258.8	Candela	0.994	0.784
Color:	Red				120Vac		120.1		Vac		260.4	Candela	1.000	
Lens Type:	Tinted				135Vac		135.1		Vac		261.1	Candela	1.003	
Photometric Test Distance: 25 meters														
Max	495	25°C		25°C		25°C		74°C/49°C		74°C/49°C		74°C/49°C		
Vertical	Horizontal	Rated 80Vac		Measured 120Vac		Rated 135Vac		Rated 80Vac		Measured 120Vac		Rated 135Vac		Table 1
Angle	Angle	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Minimum
Up/Down	Left/Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Candela
12.5U	2.5	60	61	60	61	61	61	47	48	47	48	47	48	17
12.5U	7.5	54	57	54	57	54	57	42	45	42	45	42	45	13
7.5U	2.5	98	100	99	101	99	101	77	78	78	79	78	79	31
7.5U	7.5	84	88	84	89	84	89	66	69	66	70	66	70	25
7.5U	12.5	64	69	65	70	65	70	50	54	51	55	51	55	18
2.5U	2.5	177	184	178	185	179	185	139	144	140	145	140	145	68
2.5U	7.5	145	162	146	163	146	164	114	127	114	128	115	128	56
2.5U	12.5	105	124	106	124	106	125	82	97	83	97	83	98	38
2.5U	17.5	67	82	67	82	67	83	52	64	53	65	53	65	21
2.5U	22.5	38	47	38	47	38	47	30	37	30	37	30	37	12
2.5D	2.5	339	349	342	351	342	352	266	273	268	275	268	276	162
2.5D	7.5	277	307	279	309	279	310	217	241	218	242	219	243	132
2.5D	12.5	193	226	194	228	194	228	151	177	152	179	152	179	91
2.5D	17.5	114	144	114	145	115	146	89	113	90	114	90	114	53
2.5D	22.5	57	74	58	75	58	75	45	58	45	59	45	59	28
2.5D	27.5	29	37	29	38	29	38	22	29	23	30	23	30	15
7.5D	2.5	340	341	342	344	343	345	266	268	268	269	268	270	127
7.5D	7.5	286	292	287	294	288	295	224	229	225	230	226	231	106
7.5D	12.5	203	206	204	208	205	208	159	162	160	163	160	163	71
7.5D	17.5	124	127	124	128	125	128	97	100	97	100	98	101	41
7.5D	22.5	63	66	64	67	64	67	50	52	50	52	50	53	21
7.5D	27.5	32	34	32	34	32	34	25	27	25	27	25	27	12
12.5D	2.5	178	176	179	177	180	177	140	138	141	138	141	139	50
12.5D	7.5	151	149	152	150	153	150	118	117	119	117	120	118	40
12.5D	12.5	111	108	112	109	112	109	87	85	88	85	88	86	28
12.5D	17.5	74	72	74	72	74	73	58	56	58	57	58	57	17
12.5D	22.5	43	43	43	44	43	44	34	34	34	34	34	34	8
12.5D	27.5	25	25	25	25	25	26	19	20	20	20	20	20	5
17.5D	2.5	94	95	95	95	95	96	74	74	74	75	74	75	23
17.5D	7.5	81	84	81	84	82	85	63	66	64	66	64	66	18
17.5D	12.5	63	65	63	66	63	66	49	51	49	51	49	52	13
17.5D	17.5	44	47	44	47	44	47	35	37	35	37	35	37	7
17.5D	22.5	28	31	29	31	29	31	22	24	22	24	22	24	3
22.5D	2.5	61	62	62	62	62	62	48	48	48	49	48	49	17
22.5D	7.5	52	54	53	55	53	55	41	43	41	43	41	43	13
22.5D	12.5	40	42	41	42	41	42	32	33	32	33	32	33	10
22.5D	17.5	30	31	30	31	30	31	23	24	24	24	24	24	5
27.5D	2.5	35	36	35	36	36	36	28	28	28	28	28	28	12
27.5D	7.5	31	32	31	32	31	32	24	25	24	25	24	25	8

Luminous Intensity 6.4.4.1 through 6.4.4.4

Sample:	CRT2502170837-008-5					Target Input voltage		Measured Input Voltage			H, V Lum. Intensity		Vac Variation Factor		MMLI Factor
Module	8" Ball					80Vac		80.0	Vac		266.8	Candela	0.992		0.770
Color:	Red					120Vac		120.1	Vac		269	Candela	1.000		
Lens Type:	Tinted					135Vac		135.2	Vac		271.1	Candela	1.008		
Photometric Test Distance: 25 meters															
Max	495	25°C			25°C		25°C		74°C/49°C		74°C/49°C		74°C/49°C		
Vertical	Horizontal	Rated 80Vac		Measured 120Vac		Rated 135Vac		Rated 80Vac		Measured 120Vac		Rated 135Vac		Table 1	
Angle	Angle	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Minimum	
Up/Down	Left/Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Candela	
12.5U	2.5	63	63	64	64	64	64	49	49	49	49	50	50	17	
12.5U	7.5	58	58	58	58	59	59	44	44	45	45	45	45	13	
7.5U	2.5	103	104	104	105	105	106	79	80	80	81	81	81	31	
7.5U	7.5	89	91	89	92	90	93	68	70	69	71	69	71	25	
7.5U	12.5	68	71	69	72	70	72	53	55	53	55	54	56	18	
2.5U	2.5	187	188	188	190	190	191	144	145	145	146	146	147	68	
2.5U	7.5	157	161	159	162	160	164	121	124	122	125	123	126	56	
2.5U	12.5	117	120	118	121	118	122	90	92	90	93	91	94	38	
2.5U	17.5	75	79	76	80	77	80	58	61	58	61	59	62	21	
2.5U	22.5	43	45	43	46	44	46	33	35	33	35	34	36	12	
2.5D	2.5	352	356	355	359	357	362	271	274	273	276	275	278	162	
2.5D	7.5	297	307	300	310	302	312	229	236	231	238	232	240	132	
2.5D	12.5	210	221	212	223	214	224	162	170	163	171	165	173	91	
2.5D	17.5	129	138	130	140	131	141	99	107	100	107	101	108	53	
2.5D	22.5	65	71	66	72	66	72	50	55	51	55	51	56	28	
2.5D	27.5	33	36	33	36	33	37	25	28	25	28	26	28	15	
7.5D	2.5	345	351	348	354	350	357	265	270	267	272	270	275	127	
7.5D	7.5	288	303	291	305	293	308	222	233	224	235	226	237	106	
7.5D	12.5	203	219	205	221	207	222	157	168	158	170	159	171	71	
7.5D	17.5	124	138	125	139	126	140	96	106	96	107	97	108	41	
7.5D	22.5	65	73	65	73	66	74	50	56	50	56	51	57	21	
7.5D	27.5	33	37	34	37	34	38	26	28	26	29	26	29	12	
12.5D	2.5	181	183	182	184	184	186	139	141	140	142	141	143	50	
12.5D	7.5	152	158	153	160	154	161	117	122	118	123	119	124	40	
12.5D	12.5	110	118	111	119	112	120	85	91	85	92	86	92	28	
12.5D	17.5	73	79	74	80	74	81	56	61	57	61	57	62	17	
12.5D	22.5	43	47	44	47	44	48	33	36	34	36	34	37	8	
12.5D	27.5	26	27	26	27	26	28	20	21	20	21	20	21	5	
17.5D	2.5	98	99	99	100	100	101	75	76	76	77	77	77	23	
17.5D	7.5	85	87	85	88	86	88	65	67	66	68	66	68	18	
17.5D	12.5	65	68	66	69	66	69	50	53	51	53	51	53	13	
17.5D	17.5	47	49	47	49	47	50	36	38	36	38	36	38	7	
17.5D	22.5	30	32	30	32	31	32	23	25	23	25	24	25	3	
22.5D	2.5	64	65	64	65	65	66	49	50	50	50	50	50	17	
22.5D	7.5	55	56	55	57	56	57	42	43	43	44	43	44	13	
22.5D	12.5	42	44	43	44	43	45	33	34	33	34	33	34	10	
22.5D	17.5	31	32	32	33	32	33	24	25	24	25	24	25	5	
27.5D	2.5	37	37	37	37	37	38	28	29	29	29	29	29	12	
27.5D	7.5	33	33	33	33	33	33	25	25	25	26	26	26	8	

Luminous Intensity 6.4.4.1 through 6.4.4.4

Sample:	CRT2502170837-008-6					Target Input voltage		Measured Input Voltage		H, V Lum. Intensity		Vac Variation Factor		MMLI Factor	
Module	8" Ball					80Vac		80.0		Vac		272.2		0.995	0.788
Color:	Red					120Vac		120.1		Vac		273.7		1.000	
Lens Type:	Tinted					135Vac		135.1		Vac		274.0		1.001	
Photometric Test Distance: 25 meters															
Max	495	25°C		25°C		25°C		74°C/49°C		74°C/49°C		74°C/49°C			
Vertical	Horizontal	Rated 80Vac		Measured 120Vac		Rated 135Vac		Rated 80Vac		Measured 120Vac		Rated 135Vac		Table 1	
Angle	Angle	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Minimum	
Up/Down	Left/Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Candela	
12.5U	2.5	63	64	64	65	64	65	50	51	50	51	50	51	17	
12.5U	7.5	57	60	57	60	57	60	45	47	45	47	45	47	13	
7.5U	2.5	103	105	104	106	104	106	81	83	82	83	82	83	31	
7.5U	7.5	87	93	88	94	88	94	69	73	69	74	69	74	25	
7.5U	12.5	67	73	67	73	67	73	53	57	53	58	53	58	18	
2.5U	2.5	186	193	188	195	188	195	147	152	148	153	148	153	68	
2.5U	7.5	153	170	154	171	154	172	120	134	121	135	121	135	56	
2.5U	12.5	111	130	112	131	112	131	87	102	88	103	88	103	38	
2.5U	17.5	70	86	71	87	71	87	55	68	56	68	56	68	21	
2.5U	22.5	40	49	40	50	40	50	31	39	32	39	32	39	12	
2.5D	2.5	353	362	355	364	355	364	278	285	279	287	280	287	162	
2.5D	7.5	289	321	291	323	291	323	228	253	229	254	229	254	132	
2.5D	12.5	201	236	202	237	203	238	158	186	159	187	160	187	91	
2.5D	17.5	119	151	120	152	120	152	94	119	94	119	94	120	53	
2.5D	22.5	60	78	60	78	60	78	47	61	47	62	47	62	28	
2.5D	27.5	30	39	30	40	30	40	24	31	24	31	24	31	15	
7.5D	2.5	344	349	346	351	347	351	271	275	273	276	273	277	127	
7.5D	7.5	288	300	290	301	290	302	227	236	228	237	228	237	106	
7.5D	12.5	202	213	204	214	204	214	159	167	160	168	161	169	71	
7.5D	17.5	123	133	124	134	124	134	97	105	97	105	97	105	41	
7.5D	22.5	64	70	64	71	64	71	50	55	51	56	51	56	21	
7.5D	27.5	33	36	33	37	33	37	26	29	26	29	26	29	12	
12.5D	2.5	178	177	179	178	179	178	140	140	141	140	141	141	50	
12.5D	7.5	150	151	151	152	151	152	118	119	119	120	119	120	40	
12.5D	12.5	111	111	111	111	111	111	87	87	88	88	88	88	28	
12.5D	17.5	74	74	74	75	74	75	58	59	58	59	58	59	17	
12.5D	22.5	43	45	43	45	43	45	34	36	34	36	34	36	8	
12.5D	27.5	25	26	25	27	25	27	20	21	20	21	20	21	5	
17.5D	2.5	96	97	97	98	97	98	76	76	76	77	76	77	23	
17.5D	7.5	82	86	83	86	83	87	65	68	65	68	65	68	18	
17.5D	12.5	64	67	64	68	64	68	50	53	50	53	50	53	13	
17.5D	17.5	45	48	45	48	45	49	35	38	35	38	35	38	7	
17.5D	22.5	29	32	29	32	29	32	23	25	23	25	23	25	3	
22.5D	2.5	62	63	63	64	63	64	49	50	49	50	50	50	17	
22.5D	7.5	53	56	53	56	54	56	42	44	42	44	42	44	13	
22.5D	12.5	41	43	41	43	41	43	32	34	32	34	32	34	10	
22.5D	17.5	30	32	31	32	31	32	24	25	24	25	24	25	5	
27.5D	2.5	36	36	36	37	36	37	28	29	28	29	29	29	12	
27.5D	7.5	32	33	32	33	32	33	25	26	25	26	25	26	8	

Luminous Intensity 6.4.4.1 through 6.4.4.4

Sample:	CRT2502170837-008-7				Target Input voltage		Measured Input Voltage			H, V Lum. Intensity		Vac Variation Factor		MMLI Factor	
Module	8" Ball				80Vac		80.0			Vac		289.4		Candela	0.787
Color:	Red				120Vac		120.1			Vac		281.2		Candela	
Lens Type:	Clear				135Vac		135.1			Vac		282.9		Candela	
Photometric Test Distance: 25 meters															
Max	495	25°C		25°C		25°C		74°C/49°C		74°C/49°C		74°C/49°C			
Vertical	Horizontal	Rated 80Vac		Measured 120Vac		Rated 135Vac		Rated 80Vac		Measured 120Vac		Rated 135Vac		Table 1	
Angle	Angle	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Minimum	
Up/Down	Left/Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Candela	
12.5U	2.5	68	69	67	67	67	68	54	54	52	53	53	53	17	
12.5U	7.5	61	65	59	63	60	63	48	51	47	49	47	50	13	
7.5U	2.5	112	114	108	111	109	111	88	90	85	87	86	88	31	
7.5U	7.5	95	101	92	98	93	98	75	79	72	77	73	77	25	
7.5U	12.5	73	79	71	77	71	77	57	62	56	60	56	61	18	
2.5U	2.5	200	207	194	202	196	203	157	163	153	158	154	159	68	
2.5U	7.5	164	183	159	178	160	179	129	144	125	140	126	141	56	
2.5U	12.5	119	140	116	136	117	137	94	110	91	107	92	108	38	
2.5U	17.5	77	94	75	91	75	92	60	74	59	72	59	72	21	
2.5U	22.5	44	54	42	53	43	53	34	43	33	41	34	42	12	
2.5D	2.5	375	383	364	372	366	374	295	301	286	293	288	294	162	
2.5D	7.5	307	339	299	330	300	332	242	267	235	259	236	261	132	
2.5D	12.5	215	250	209	243	210	245	169	197	165	191	166	193	91	
2.5D	17.5	129	162	126	158	126	159	102	128	99	124	99	125	53	
2.5D	22.5	65	85	63	82	64	83	51	67	50	65	50	65	28	
2.5D	27.5	33	43	32	42	32	42	26	34	25	33	25	33	15	
7.5D	2.5	370	375	359	364	362	367	291	295	283	287	284	288	127	
7.5D	7.5	310	322	301	313	303	314	243	253	237	246	238	247	106	
7.5D	12.5	221	230	215	224	216	225	174	181	169	176	170	177	71	
7.5D	17.5	136	145	132	141	133	142	107	114	104	111	105	112	41	
7.5D	22.5	71	78	69	75	70	76	56	61	54	59	55	60	21	
7.5D	27.5	36	40	35	39	35	39	28	32	28	31	28	31	12	
12.5D	2.5	194	194	189	189	190	190	153	153	148	148	149	149	50	
12.5D	7.5	165	165	160	161	161	162	130	130	126	126	127	127	40	
12.5D	12.5	123	122	119	118	120	119	96	96	94	93	94	94	28	
12.5D	17.5	82	82	80	80	80	80	64	65	63	63	63	63	17	
12.5D	22.5	48	50	47	49	47	49	38	39	37	38	37	38	8	
12.5D	27.5	28	29	27	28	27	29	22	23	21	22	22	23	5	
17.5D	2.5	105	106	102	103	102	104	82	83	80	81	81	82	23	
17.5D	7.5	90	94	88	92	88	92	71	74	69	72	70	72	18	
17.5D	12.5	70	74	68	72	69	72	55	58	54	57	54	57	13	
17.5D	17.5	50	53	48	52	49	52	39	42	38	41	38	41	7	
17.5D	22.5	32	35	31	34	32	34	25	28	25	27	25	27	3	
22.5D	2.5	69	70	67	68	67	68	54	55	52	53	53	53	17	
22.5D	7.5	59	62	57	60	57	60	46	49	45	47	45	47	13	
22.5D	12.5	46	48	44	46	45	47	36	38	35	36	35	37	10	
22.5D	17.5	34	35	33	34	33	34	27	28	26	27	26	27	5	
27.5D	2.5	40	40	39	39	39	40	31	32	31	31	31	31	12	
27.5D	7.5	35	36	34	35	34	36	28	29	27	28	27	28	8	

Luminous Intensity 6.4.4.1 through 6.4.4.4

Sample:	CRT2502170837-008-8				Target Input voltage		Measured Input Voltage			H, V Lum. Intensity		Vac Variation Factor		MMLI Factor
Module	8" Ball				80Vac		80.0	Vac		262.2	Candela	0.993		0.773
Color:	Red				120Vac		120.1	Vac		264.1	Candela	1.000		
Lens Type:	Clear				135Vac		135.1	Vac		264.4	Candela	1.001		
Photometric Test Distance: 25 meters														
Max	495	25°C		25°C		25°C		74°C/49°C		74°C/49°C		74°C/49°C		
Vertical	Horizontal	Rated 80Vac		Measured 120Vac		Rated 135Vac		Rated 80Vac		Measured 120Vac		Rated 135Vac		Table 1
Angle	Angle	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Minimum
Up/Down	Left/Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Candela
12.5U	2.5	62	62	62	63	62	63	48	48	48	49	48	49	17
12.5U	7.5	56	58	57	58	57	58	43	44	44	45	44	45	13
7.5U	2.5	102	103	103	104	103	104	79	80	80	80	80	81	31
7.5U	7.5	88	91	88	91	89	91	68	70	68	70	68	71	25
7.5U	12.5	68	71	68	71	68	71	52	55	53	55	53	55	18
2.5U	2.5	182	186	184	188	184	188	141	144	142	145	142	145	68
2.5U	7.5	152	162	154	163	154	163	118	125	119	126	119	126	56
2.5U	12.5	112	123	113	124	113	124	87	95	87	96	87	96	38
2.5U	17.5	73	81	74	82	74	82	56	63	57	63	57	63	21
2.5U	22.5	42	47	42	47	42	47	32	36	33	36	33	36	12
2.5D	2.5	342	348	345	350	345	351	264	269	266	271	267	271	162
2.5D	7.5	286	303	288	306	289	306	221	234	223	236	223	236	132
2.5D	12.5	202	222	204	223	204	224	156	171	158	173	158	173	91
2.5D	17.5	125	141	126	142	126	142	96	109	97	110	97	110	53
2.5D	22.5	63	73	64	74	64	74	49	57	49	57	49	57	28
2.5D	27.5	32	37	32	38	32	38	25	29	25	29	25	29	15
7.5D	2.5	345	348	347	350	347	351	266	269	268	271	268	271	127
7.5D	7.5	292	297	294	299	294	300	226	230	227	231	227	232	106
7.5D	12.5	209	213	210	214	211	214	161	164	163	166	163	166	71
7.5D	17.5	130	133	131	134	131	135	100	103	101	104	101	104	41
7.5D	22.5	68	70	68	71	68	71	52	54	53	55	53	55	21
7.5D	27.5	34	36	35	36	35	36	27	28	27	28	27	28	12
12.5D	2.5	184	183	185	184	185	185	142	141	143	142	143	143	50
12.5D	7.5	157	156	158	157	158	157	121	120	122	121	122	121	40
12.5D	12.5	116	114	117	115	117	115	90	88	90	89	91	89	28
12.5D	17.5	78	76	79	77	79	77	60	59	61	59	61	59	17
12.5D	22.5	46	46	46	46	47	46	36	35	36	36	36	36	8
12.5D	27.5	27	26	27	27	27	27	21	20	21	21	21	21	5
17.5D	2.5	99	100	99	100	100	101	76	77	77	78	77	78	23
17.5D	7.5	86	87	87	88	87	88	67	67	67	68	67	68	18
17.5D	12.5	67	68	67	69	68	69	52	53	52	53	52	53	13
17.5D	17.5	48	49	48	49	48	49	37	38	37	38	37	38	7
17.5D	22.5	31	32	31	32	31	32	24	25	24	25	24	25	3
22.5D	2.5	65	65	65	66	65	66	50	50	50	51	50	51	17
22.5D	7.5	56	57	56	58	56	58	43	44	43	44	44	45	13
22.5D	12.5	44	44	44	45	44	45	34	34	34	34	34	34	10
22.5D	17.5	32	33	33	33	33	33	25	25	25	25	25	25	5
27.5D	2.5	38	38	38	38	38	38	29	29	29	30	29	30	12
27.5D	7.5	33	34	34	34	34	34	26	26	26	26	26	26	8

Luminous Intensity 6.4.4.1 through 6.4.4.4

Sample:	CRT2502170837-008-9					Target Input voltage		Measured Input Voltage		H, V Lum. Intensity		Vac Variation Factor		MMLI Factor
Module	8" Ball					80Vac		80.0 Vac		290.3 Candela		0.990		0.776
Color:	Red					120Vac		120.1 Vac		293.2 Candela		1.000		
Lens Type:	Clear					135Vac		135.1 Vac		295.8 Candela		1.009		
Photometric Test Distance: 25 meters														
Max	495	25°C		25°C		25°C		74°C/49°C		74°C/49°C		74°C/49°C		
Vertical	Horizontal	Rated 80Vac		Measured 120Vac		Rated 135Vac		Rated 80Vac		Measured 120Vac		Rated 135Vac		Table 1
Angle	Angle	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Candela	Minimum
Up/Down	Left/Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Candela
12.5U	2.5	68	68	68	69	69	69	53	53	53	53	54	54	17
12.5U	7.5	61	63	62	63	63	64	48	49	48	49	49	50	13
7.5U	2.5	111	112	112	113	113	114	86	87	87	88	88	89	31
7.5U	7.5	95	98	95	99	96	100	73	76	74	77	75	77	25
7.5U	12.5	73	77	74	77	74	78	57	59	57	60	58	61	18
2.5U	2.5	201	204	203	206	205	208	156	158	158	160	159	161	68
2.5U	7.5	168	177	170	178	171	180	131	137	132	138	133	140	56
2.5U	12.5	123	133	125	135	126	136	96	103	97	104	98	105	38
2.5U	17.5	80	88	81	89	81	89	62	68	63	69	63	69	21
2.5U	22.5	45	50	46	51	46	51	35	39	35	39	36	40	12
2.5D	2.5	380	385	384	389	387	393	295	299	298	302	301	305	162
2.5D	7.5	319	336	322	339	325	342	247	261	250	263	252	266	132
2.5D	12.5	225	244	227	246	229	249	175	189	176	191	178	193	91
2.5D	17.5	138	155	139	157	140	158	107	120	108	122	109	123	53
2.5D	22.5	69	80	70	81	71	81	54	62	54	63	55	63	28
2.5D	27.5	35	40	35	41	35	41	27	31	27	32	27	32	15
7.5D	2.5	375	380	378	384	382	388	291	295	294	298	296	301	127
7.5D	7.5	314	327	317	330	320	333	244	254	246	256	248	259	106
7.5D	12.5	224	234	226	237	228	239	174	182	175	184	177	185	71
7.5D	17.5	138	147	139	149	141	150	107	114	108	115	109	116	41
7.5D	22.5	71	77	72	78	72	79	55	60	56	61	56	61	21
7.5D	27.5	36	40	36	40	37	41	28	31	28	31	29	31	12
12.5D	2.5	193	194	195	196	197	198	150	151	152	152	153	154	50
12.5D	7.5	163	166	165	168	166	169	127	129	128	130	129	132	40
12.5D	12.5	120	123	121	124	122	125	93	96	94	96	95	97	28
12.5D	17.5	80	82	81	83	82	84	62	64	63	65	63	65	17
12.5D	22.5	47	49	48	50	48	50	37	38	37	39	37	39	8
12.5D	27.5	28	29	28	29	28	29	21	22	22	22	22	23	5
17.5D	2.5	104	105	106	106	106	107	81	82	82	83	83	83	23
17.5D	7.5	90	93	91	93	92	94	70	72	71	73	72	73	18
17.5D	12.5	70	73	71	73	71	74	54	56	55	57	55	57	13
17.5D	17.5	50	52	50	53	51	53	39	40	39	41	39	41	7
17.5D	22.5	32	34	33	34	33	35	25	26	25	27	26	27	3
22.5D	2.5	69	70	69	70	70	71	53	54	54	55	54	55	17
22.5D	7.5	59	61	59	61	60	62	46	47	46	48	47	48	13
22.5D	12.5	45	47	46	48	46	48	35	37	36	37	36	37	10
22.5D	17.5	34	35	34	35	34	35	26	27	26	27	27	27	5
27.5D	2.5	40	40	40	41	40	41	31	31	31	32	31	32	12
27.5D	7.5	35	36	36	36	36	36	27	28	28	28	28	28	8

Complies: ☒ YES ☐ NO

Tested By:	Matthew Benninger		Signature or initials:	
Engineer:	John Robins		Signature or initials:	
Reviewed By:	cwm		Signature or initials:	
Test Equipment Used:	15,16,17,18,20,21,22		Completion Date:	14-Mar-2025
Amb (°C):	20	RH%	38	

Luminance Uniformity

Luminance measurements were taken at nine locations across the signal face. A spot size of one inch was used. The luminance meter was translated from side to side and up and down remaining normal to the sample surface. The measurements were used to determine luminance uniformity. The measurements were taken after operating on the same duty cycle used during the photometric test.

Results

The ratio between the maximum and the minimum luminance was less than 10 to 1. Data follows.

8" Red Ball Tinted			
Sample	CRT2502170837-008-4	CRT2502170837-008-5	CRT2502170837-008-6
Location	Luminance	Luminance	Luminance
1	6957	7736	6549
2	9675	8568	8270
3	11790	12048	11277
4	9308	9440	9667
5	6413	6273	6611
6	16173	17723	17701
7	20517	21398	20200
8	5638	6031	5693
9	3491	4121	3643
Average	9996	10371	9957
Intensity Ratio	5.9	5.2	5.5

8" Red Ball Clear			
Sample	CRT2502170837-008-7	CRT2502170837-008-8	CRT2502170837-008-9
Location	Luminance	Luminance	Luminance
1	7651	6932	7954
2	10823	9871	11151
3	11642	9902	10732
4	9982	8731	9494
5	7026	6708	7258
6	16105	15025	16477
7	23143	19587	22667
8	7476	5921	6660
9	4590	4162	4693
Average	10938	9649	10787
Intensity Ratio	5.0	4.7	4.8

Luminance measurements are in cd/m2

Same 60 minute warm-up used for luminous intensity

Test distance is 19 feet with ¼ degree aperture using the PR 740

Measured Voltage:	120.0 - 120.3	Vac
-------------------	---------------	-----

Complies: ☒ YES ☐ NO

Tested By:	Rex Williams	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	6-9	Completion Date:	3-Mar-2025
Amb (°C):	25.4	RH%	12.5

Chromaticity 6.4.4.6

The chromaticity measurements were performed on the submitted LED Traffic Signal Modules with the spectroradiometer. The samples were operated at nominal input voltage and ambient temperature during the measurements. The measurements were taken from 380-780nm in 2nm increments.

The chromaticity measurements were taken at nine locations across the signal face. A spot size of one inch was used with the samples operating on the same duty cycle used during the photometric test. The spectro-radiometer was translated from side to side and up and down remaining normal to the sample surface. The average of the measurements are recorded.

Results

Color	Sample	Chromaticity Coordinates	
		x	y
Red (Tinted)	CRT2502170837-008-4	0.702	0.297
	CRT2502170837-008-5	0.702	0.297
	CRT2502170837-008-6	0.702	0.298

Color	Sample	Chromaticity Coordinates	
		x	y
Red (Clear)	CRT2502170837-008-7	0.701	0.299
	CRT2502170837-008-8	0.701	0.298
	CRT2502170837-008-9	0.701	0.298

The chromaticity measurements meet the requirements of the referenced specification.

Measured Voltage:	120.0 - 120.3	Vac
-------------------	---------------	-----

Complies: ☒ YES ☐ NO

Tested By:	Rex Williams	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	6-9	Completion Date:	3-Mar-2025
Amb (°C):	25.4	RH%	12.5

Color Uniformity 6.4.4.7

Three samples of each model were tested. Nine color measurements were taken at different locations on the traffic signal face. The measurements were taken after operating on the same duty cycle used during the photometric test.

Results

8" Red Ball Tinted									
Sample	CRT2502170837-008-4			CRT2502170837-008-5			CRT2502170837-008-6		
Location	x	y	Dominant	x	y	Dominant	x	y	Dominant
1	0.703	0.297	627	0.703	0.297	627	0.702	0.298	626
2	0.702	0.297	626	0.702	0.297	626	0.702	0.298	626
3	0.702	0.298	626	0.702	0.298	626	0.702	0.298	626
4	0.702	0.297	626	0.702	0.297	626	0.702	0.297	626
5	0.703	0.297	627	0.703	0.297	627	0.702	0.297	627
6	0.703	0.297	627	0.703	0.297	627	0.702	0.297	626
7	0.702	0.298	626	0.702	0.297	627	0.702	0.297	626
8	0.702	0.298	626	0.702	0.297	626	0.702	0.298	626
9	0.702	0.298	626	0.702	0.298	626	0.702	0.298	626
Average	0.702	0.297	626	0.702	0.297	626	0.702	0.298	626

8" Red Ball Clear									
Sample	CRT2502170837-008-7			CRT2502170837-008-8			CRT2502170837-008-9		
Location	x	y	Dominant	x	y	Dominant	x	y	Dominant
1	0.701	0.298	626	0.702	0.298	626	0.702	0.298	626
2	0.701	0.299	626	0.701	0.298	626	0.701	0.299	626
3	0.701	0.299	625	0.701	0.299	626	0.701	0.299	626
4	0.701	0.299	626	0.701	0.299	626	0.701	0.299	626
5	0.701	0.298	626	0.702	0.298	626	0.701	0.298	626
6	0.701	0.299	626	0.701	0.298	626	0.701	0.298	626
7	0.701	0.299	626	0.701	0.298	626	0.701	0.298	626
8	0.701	0.299	625	0.701	0.299	626	0.701	0.299	626
9	0.700	0.299	625	0.701	0.299	626	0.701	0.299	626
Average	0.701	0.299	626	0.701	0.298	626	0.701	0.298	626

The color uniformity measurements meet the requirements of the referenced specification.

Measured Voltage:	120.0 - 120.3	Vac
-------------------	---------------	-----

Complies: ☒ YES ☐ NO

Tested By:	Rex Williams	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	6-9	Completion Date:	3-Mar-2025
Amb (°C):	25.4	RH%	12.5

Lens Abrasion Resistance 6.4.5.2

A lens was mounted in the abrasion test fixture with the lens facing upwards. An abrading pad was cycled back and forth (1 cycle) for twelve cycles at $10\text{cm} \pm 2\text{cm}$ per second over the test surface of the lens. The abrading pad shall not be less than $2.5\text{cm} \pm 0.1\text{cm}$ square, constructed of 0000 steel wool rubber cemented to a rigid base shaped to the contour of the lens. The "grain" of the pad was perpendicular to the direction of motion. The abrading pad support was equal in size to the pad and the center of the support surface was within $\pm 2\text{mm}$ of parallel to the lens surface. The density of the abrading pad was such that when the pad was mounted to its support and is resting unweight on the lens, the base of the pad was no closer than 3.2mm to the lens at its closest point. When mounted on its support and resting on the lens, the abrading pad was weighted such that a pad pressure of $14\text{kPa} \pm 1\text{kPa}$ exists at the center and perpendicular to the face of the lens. A pivot was used to follow the contour of the lens.

Results

A single intensity point was measured before and after the abrasion. In all samples tested the abraded lens intensity measurement was at least 90% of the un-abraded lens intensity measurement.

8" Red Ball Tinted			
Sample	Pre Abrasion	Post Abrasion	Percentage
CRT2502170837-008-4	260.4	257.3	0.99
CRT2502170837-008-5	269	260.8	0.97
CRT2502170837-008-6	273.7	261.8	0.96

measurements in cd

8" Red Ball Clear			
Sample	Pre Abrasion	Post Abrasion	Percentage
CRT2502170837-008-7	281.2	270.5	0.96
CRT2502170837-008-8	264.1	260.1	0.98
CRT2502170837-008-9	293.2	289.9	0.99

measurements in cd

Measured Voltage:	120.15	Vac		
Measured Weight:	8	lbs		
Abrasion Pad	4	Sq. In		
Pad Pressure	2.1	psi	14.5	Kpa

Complies: ☒ YES ☐ NO

Tested By:	Matthew Benninger	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	15,16,17,18,19	Completion Date:	3/17/2025
Amb (°C):	20	RH%	44

Current Consumption 6.4.6.1

Three samples were measured for current flow in amperes. The measured current values are supplied for comparison of Product Quality Assurance current measurements on production modules. Current measurements were taken at start up.

Results

Measurements are in (mA)

8" Red Ball			
Sample	-40°C	25°C	74°C
CRT2502170837-008-4	54.5	50.4	53.1
CRT2502170837-008-5	57.4	53.3	56.2
CRT2502170837-008-6	57.7	52.7	55.4

Label lists 6.5VA

The current consumption was not in excess of 120% of the design qualification current values for an ambient temperature of 25°C.

Measured Voltage:	120.0 - 120.3	Vac
-------------------	---------------	-----

Complies: ☒ YES ☐ NO

Tested By:	John Robins	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	10,12,13	Completion Date:	26-Mar-2025
Amb (°C):	NA	RH%	NA
		Completion Date:	

Power Factor & Total Harmonic Distortion 6.4.6.6 & 6.4.6.7

Three tinted samples were measured for power factor and total harmonic distortion. A commercially available power analyzer was used to perform these measurements.

Results

8" Red Ball						
Sample	Voltage	Current (mA)	Power (W)	Power Factor	THD V%	THD I%
CRT2502170837-008-4	120.0	53.9	6.3	0.98	1.08	14.6
CRT2502170837-008-5	120.0	55.8	6.6	0.98	1.17	14.6
CRT2502170837-008-6	120.0	55.3	6.5	0.98	1.18	14.8
Requirement	NA	NA	NA	≥ 0.90	≤ 20%	≤ 20%

Measurements taken after a minimum 60 minute warmup.

Complies: ☒ YES ☐ NO

Tested By:	John Robins	Signature or initials:	
Engineer:	John Robins	Signature or initials:	
Reviewed By:	cwm	Signature or initials:	
Equipment Used:	10,11,12	Completion Date:	5-Mar-2025
Amb (°C):	24.4	RH%	26.6

Equipment list					
#	Intertek ID No.		Description	Manufacturer	Calibration Due
1	M359	--	Digit Hygro-Thermometer	Testo 608-H1	12-Aug-2025
2	V393	--	Shaker Controller	Unholtz-Dickie 100291109	28-May-2025
3	L195	CH1-4	Signal Conditioner	PCB Piezotronics 482C	25-Apr-2025
4	L221	CH1A	Accelerometer	PCB Piezotronics M35A60/ACS	29-Jan-2026
5	L222	CH2A	Accelerometer	PCB Piezotronics M35A60/ACS	29-Jan-2026
6	O757		Spectra Scan PR740	Photo Research	30-Apr-2025
7	D589		Digital Multimeter	Fluke	22-Apr-2025
8	L282		Hygro-Thermometer	Testo	5-Apr-2025
9	L268		Tape Measure	Crescent	9-Dec-2027
10	A206		Current Transformer	Pearson	01-Jun-2025
11	L176		Thermometer	Testo	19-Jul-2025
12	M297		Power Analyzer	Yokogawa	29-May-2025
13	H204		Thermal Chamber	Thermotron	12-Jun-2025
14	M207		Multimeter	Fluke	14-Oct-2025
15	O109		Goniometer	Optroniks	04-Mar-2026
16	L235		25M Photocell	Instrument Systems	17-Apr-2025
17	L254		Hygrometer	Testo	03-Jun-2025
18	O091		Power Analyzer	Yokogawa	11-Jun-2025
19	F363A		Push Pull Meter	Amada	08-May-2025
20	H138		Thermal Chamber	Despatch	Used with cal'd Equip.
21	T1546		Digital Thermometer	Dickson	
22	O756		Flex Optometer	UDT	29-Mar-2025
Note: For measurement uncertainty, refer to the calibration certificates for all the test equipment located in the equipment files					