

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P190111

Luminaire Tested: **TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P190111  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27870)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG  
Description: TERRAPIN 11" LED SHALLOW CAST WALL MOUNT WITH BORDER PAINTED CLEAR LENS  
Light Source: (56) NICHIA 5000 NF2L757DRT  
Ballast/Driver: OSRAM ELECTRONIC DRIVER PROGRAMMED AT 200mA OT25W/1

**Summary**

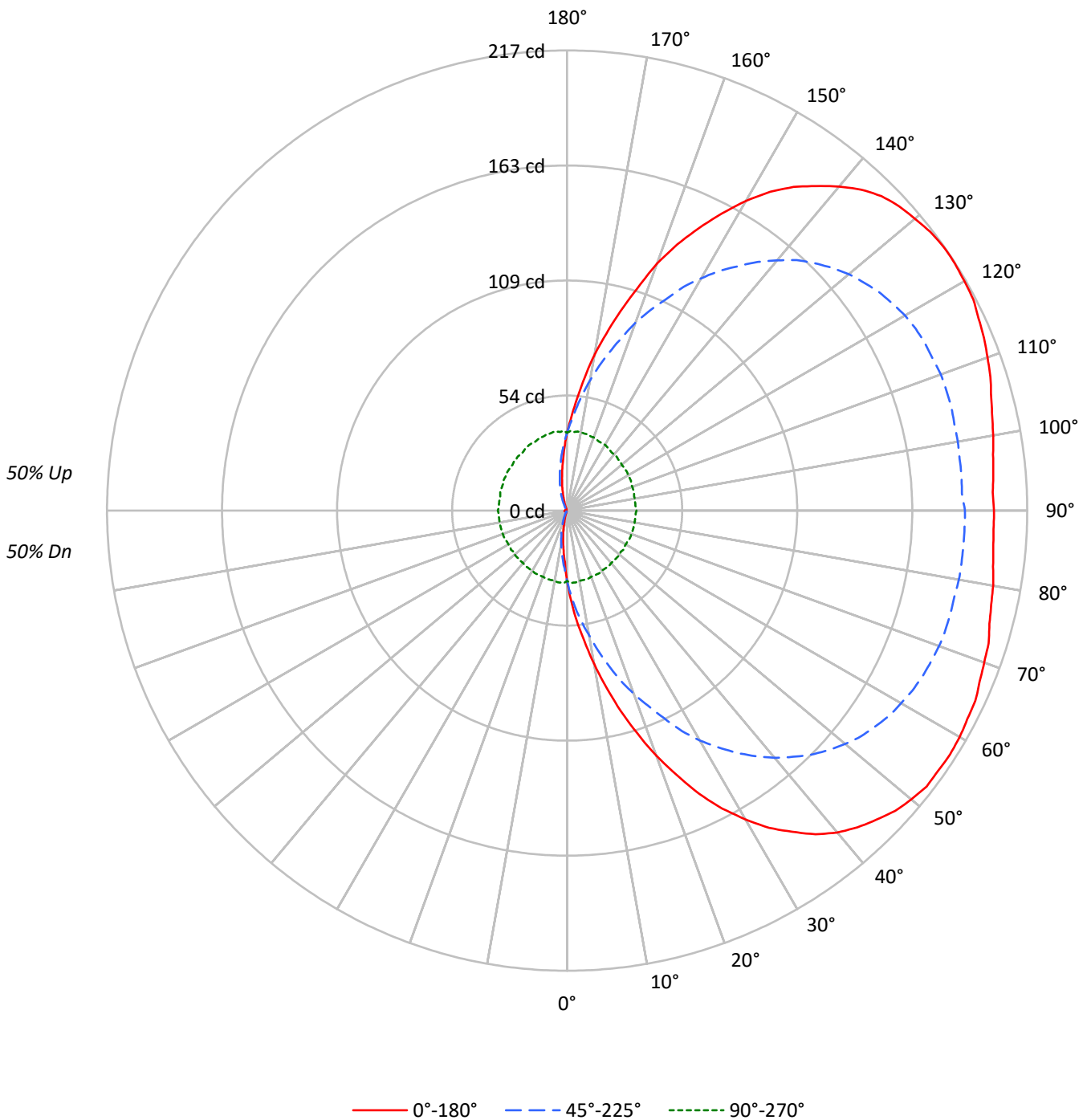
Lumens per Lamp: N/A  
Luminaire Lumens: 941.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 3.15 / 1.51 / 2.82  
Luminous Opening: Rectangular w/ Sides (W: 0.92' x L: 0.29' x H: 0.92')  
CIE Type: General Diffuse

Input Watts (W): 10  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	93	87	81	76	85	79	74	70	66	62	58	53	50	48	42	40	38	32
2	83	73	65	58	75	67	60	53	55	49	45	44	40	36	34	31	28	23
3	74	63	53	46	67	57	49	43	47	41	35	37	33	29	29	25	22	17
4	67	54	45	38	61	50	41	35	41	34	29	32	27	23	25	21	18	14
5	61	48	38	31	56	44	35	29	36	29	24	29	23	19	22	18	15	11
6	56	42	33	26	51	39	30	24	32	25	20	25	20	16	19	15	12	9
7	52	38	29	23	47	35	27	21	29	22	17	23	18	14	17	13	10	8
8	48	34	25	20	43	31	23	18	26	19	15	21	16	12	16	12	9	6
9	44	31	23	17	40	28	21	16	23	17	13	19	14	10	15	11	8	6
10	41	28	20	15	38	26	19	14	21	16	12	17	13	9	13	10	7	5

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	1337	1337	1337
5°	1655	1267	602
10°	1931	1168	279
15°	2213	1104	100
20°	2458	1043	36
25°	2654	1006	7
30°	2777	964	7
35°	2839	945	6
40°	2864	923	6
45°	2834	920	5
50°	2797	923	5
55°	2733	934	12
60°	2670	940	11
65°	2614	979	11
70°	2557	1015	11
75°	2520	1062	11
80°	2513	1123	11
85°	2523	1200	11



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	3.4	0.4
10°-20°	12.3	1.3
20°-30°	25.5	2.7
30°-40°	41.8	4.4
40°-50°	57.9	6.2
50°-60°	71.3	7.6
60°-70°	80.7	8.6
70°-80°	86.3	9.2
80°-90°	88.6	9.4
90°-100°	88.4	9.4
100°-110°	86.5	9.2
110°-120°	81.6	8.7
120°-130°	72.4	7.7
130°-140°	58.9	6.3
140°-150°	42.5	4.5
150°-160°	26.2	2.8
160°-170°	13.0	1.4
170°-180°	3.7	0.4
0°-30°	41.2	4.4
0°-40°	82.9	8.8
0°-60°	212.1	22.5
0°-90°	467.8	49.7
90°-120°	256.5	27.3
90°-150°	430.3	45.7
90°-180°	473.0	50.3
0°-180°	941.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	33	33	33	33	33	
5°	52	46	34	23	19	6
15°	98	76	34	10	4	28
25°	147	108	33	3	0	68
35°	185	139	33	1	0	116
45°	206	163	32	1	0	160
55°	214	177	32	1	1	192
65°	212	185	32	1	1	210
75°	206	187	32	1	1	218
85°	202	188	32	1	1	165
90°	201	188	33	1	1	110
95°	202	187	32	1	1	165
105°	207	188	33	1	1	219
115°	214	186	33	1	1	212
125°	217	180	34	1	1	194
135°	210	165	34	1	0	162
145°	186	141	35	1	0	117
155°	147	110	36	4	0	69
165°	97	77	37	13	7	28
175°	53	48	37	27	23	6
180°	37	37	37	37	37	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
2.5°	42.5	41.6	42.0	41.6	42.0	41.6	41.6	40.7	41.1	40.7	39.8
5°	52.2	51.3	51.3	50.9	50.9	50.4	50.4	49.1	48.7	47.8	46.5
7.5°	61.9	61.5	61.5	60.6	60.2	59.7	59.3	57.5	56.2	55.3	53.1
10°	73.4	72.1	71.7	71.2	70.3	69.5	69.0	66.4	64.6	62.8	59.7
12.5°	85.4	84.1	83.6	82.7	81.4	80.1	79.2	76.5	73.9	71.2	67.7
15°	97.8	96.4	96.0	94.7	92.9	91.6	90.3	87.2	83.6	80.1	75.7
17.5°	110.2	109.7	108.4	107.1	104.4	103.1	101.3	97.3	93.8	88.9	84.1
20°	123.0	122.5	121.7	119.9	116.8	115.5	112.8	107.9	103.5	97.8	92.0
22.5°	134.9	134.5	133.2	131.4	128.3	126.5	124.3	119.5	113.7	106.6	99.5
25°	147.3	146.9	145.1	142.9	139.4	137.6	135.4	129.6	123.9	116.8	107.9
27.5°	158.4	157.9	156.2	154.0	150.4	148.2	145.6	139.8	133.2	126.1	117.2
30°	168.1	167.7	165.9	163.7	159.7	157.9	154.8	149.1	142.0	134.1	125.2
32.5°	177.4	176.5	175.2	172.1	168.6	166.3	163.2	157.5	150.4	141.6	132.3
35°	184.9	184.5	183.2	180.1	176.5	174.3	171.2	165.0	157.9	148.6	139.4
37.5°	192.4	191.6	190.2	187.6	183.6	181.8	178.7	172.1	165.0	155.7	146.0
40°	198.2	197.3	196.0	193.3	189.8	187.6	184.5	178.7	171.2	162.4	152.2
42.5°	202.6	202.2	200.9	198.2	194.7	192.9	190.2	184.0	177.0	168.1	157.5
45°	206.2	206.2	205.3	202.6	199.1	197.3	194.7	188.9	181.8	173.0	162.8
47.5°	209.7	209.3	207.9	205.3	202.6	200.4	198.2	192.9	185.8	177.4	167.2
50°	211.9	211.5	210.1	207.9	204.8	203.1	200.9	196.0	189.4	181.4	171.2
52.5°	213.7	212.8	211.5	209.3	206.6	204.8	203.1	198.2	192.4	184.0	174.8
55°	213.7	213.2	212.4	210.1	207.5	205.7	204.0	199.5	194.2	186.7	177.4
57.5°	214.1	213.7	212.4	210.6	208.4	206.6	204.8	200.9	196.0	188.9	180.1
60°	213.7	213.2	211.9	210.6	207.9	206.6	205.3	201.3	196.9	190.2	181.8
62.5°	212.8	212.8	211.5	209.7	207.5	206.6	204.8	201.7	197.3	191.1	183.6
65°	212.4	211.9	210.6	208.8	207.0	205.7	204.4	201.7	197.3	192.0	184.9
67.5°	210.6	210.6	209.7	207.9	206.2	205.3	204.0	200.9	197.3	192.4	185.8
70°	209.3	209.3	208.4	207.0	205.3	204.4	203.1	200.4	197.3	192.9	186.7
72.5°	208.4	207.5	206.6	205.3	204.0	203.1	201.7	199.5	196.9	192.9	187.1
75°	206.2	205.7	204.8	204.0	202.2	201.7	200.9	198.6	196.0	192.4	187.1
77.5°	204.8	204.8	204.0	202.2	200.9	200.4	199.5	197.8	195.5	192.4	187.1
80°	204.0	203.5	202.6	201.3	200.0	199.5	198.6	196.9	195.1	192.4	187.6
82.5°	202.6	202.2	201.3	200.0	198.6	198.2	197.8	196.4	194.7	192.0	187.6
85°	201.7	201.3	200.4	199.5	198.2	197.8	196.9	196.0	194.2	192.0	187.6
87.5°	201.3	200.9	200.0	199.1	197.8	197.3	196.9	195.5	194.2	191.6	187.6
90°	201.3	200.9	200.0	199.1	198.2	197.8	197.3	196.0	194.7	192.0	187.6
92.5°	200.9	200.4	199.1	198.2	197.3	196.9	196.0	195.1	193.3	190.7	186.3
95°	201.7	201.3	200.4	199.1	198.2	197.8	196.9	195.5	194.2	191.1	186.7
97.5°	202.6	202.2	201.3	200.4	199.5	198.6	197.8	196.4	194.7	191.6	186.7
100°	204.0	204.0	202.6	201.7	200.4	199.5	199.1	197.3	195.1	192.0	187.1
102.5°	205.3	205.3	204.4	203.1	201.7	200.9	200.4	198.2	196.0	192.4	187.1
105°	207.0	206.6	206.2	204.8	203.5	202.6	201.7	199.5	196.9	193.3	187.6
107.5°	209.3	208.8	207.9	206.6	205.3	204.4	203.5	200.9	197.8	193.8	187.6
110°	211.0	211.0	210.1	208.8	207.0	206.2	204.8	202.2	198.6	193.8	187.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	212.8	212.4	211.5	210.1	207.9	206.6	205.7	202.6	198.6	193.8	186.7
115°	214.1	214.1	213.2	211.5	209.3	208.4	206.6	203.5	199.5	193.8	186.3
117.5°	215.9	215.5	214.1	212.4	210.6	208.8	207.5	204.0	199.5	193.3	185.4
120°	216.3	215.9	215.0	213.2	211.0	209.3	207.5	204.0	198.6	192.4	184.0
122.5°	216.8	216.3	215.5	213.2	211.0	209.3	207.5	203.1	197.8	190.7	181.8
125°	216.8	216.3	215.0	213.2	210.1	208.8	206.6	202.2	196.0	188.9	179.6
127.5°	215.9	215.5	214.1	211.9	208.8	207.0	204.8	200.4	194.2	185.8	176.5
130°	214.1	213.2	212.4	210.6	207.0	205.3	203.1	197.8	191.1	182.7	173.4
132.5°	212.4	211.5	210.1	207.9	204.4	202.6	200.4	194.7	187.6	179.2	169.4
135°	209.7	208.8	207.0	204.8	201.7	199.5	196.9	191.1	183.6	174.8	165.0
137.5°	205.3	204.4	203.1	200.9	196.9	195.1	192.0	185.8	178.7	169.9	160.2
140°	199.5	198.6	196.9	195.1	191.1	188.9	185.8	180.1	172.5	163.7	154.0
142.5°	192.9	192.0	191.1	188.5	184.5	182.3	179.2	173.0	165.9	157.1	147.8
145°	186.3	184.9	184.0	181.4	177.8	175.6	172.5	166.3	158.8	150.4	140.7
147.5°	178.3	177.0	176.1	173.4	169.9	167.2	164.6	158.8	151.7	143.3	134.1
150°	168.6	168.1	166.8	164.6	160.6	158.4	155.7	150.0	143.3	135.8	126.5
152.5°	157.9	157.5	156.6	154.4	150.0	148.2	146.0	140.7	134.5	127.0	119.0
155°	146.9	146.9	145.6	143.3	139.8	137.1	135.4	131.0	124.8	118.1	109.7
157.5°	135.8	135.8	134.5	132.7	129.6	127.9	125.2	121.2	115.9	108.8	102.2
160°	123.9	123.9	123.0	121.2	117.7	116.4	114.6	109.7	105.3	100.0	94.2
162.5°	109.7	110.2	108.8	107.5	105.3	103.5	102.2	99.1	95.1	90.7	85.4
165°	97.3	97.3	96.9	95.6	93.8	92.0	90.7	88.5	84.9	81.4	77.4
167.5°	85.4	85.8	84.9	84.1	82.7	81.8	80.5	78.7	75.7	73.0	69.9
170°	74.8	73.9	73.4	73.0	71.7	71.2	70.3	69.0	66.8	65.0	62.4
172.5°	63.3	62.8	62.4	62.4	61.5	61.1	60.6	59.7	58.0	56.6	54.9
175°	52.6	52.6	52.2	52.2	51.8	51.3	50.9	50.9	50.0	49.1	48.2
177.5°	43.8	43.4	43.4	43.4	43.4	43.8	43.4	42.9	42.9	42.5	42.0
180°	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
2.5°	39.4	38.9	38.5	38.0	37.6	37.2	36.7	35.8	35.0	34.1	33.2
5°	45.1	44.2	42.5	41.6	40.7	40.3	38.5	37.2	35.4	34.1	32.7
7.5°	50.9	49.1	46.9	45.1	43.8	42.9	40.7	38.5	36.3	34.1	31.9
10°	57.1	54.4	51.3	48.7	46.9	45.6	42.5	39.4	36.7	33.6	31.0
12.5°	64.1	60.2	56.2	52.6	50.4	48.7	44.7	40.7	37.2	33.6	30.5
15°	70.8	66.4	61.5	56.6	54.0	51.8	46.9	42.0	37.6	33.6	29.6
17.5°	78.3	72.6	66.8	60.6	58.0	54.9	49.1	43.4	38.5	33.6	28.8
20°	85.4	78.7	71.7	64.6	61.5	58.0	51.3	44.7	38.9	33.2	28.3
22.5°	92.5	84.9	77.0	69.0	65.0	61.1	53.1	46.0	39.4	33.2	27.4
25°	100.0	91.6	82.3	73.4	69.0	64.1	55.7	47.3	39.8	33.2	27.0
27.5°	107.5	97.8	88.0	77.9	72.6	67.7	58.0	48.7	40.3	33.2	26.5
30°	115.0	104.0	92.9	81.8	76.5	70.8	60.2	50.0	40.7	32.7	26.1
32.5°	122.1	109.7	98.2	85.8	80.1	73.9	62.4	51.3	41.6	32.7	25.2
35°	128.7	116.8	103.1	90.3	83.6	77.0	64.1	52.2	41.6	32.7	24.8
37.5°	134.5	122.5	107.9	94.2	87.2	80.1	66.4	53.5	42.5	32.7	24.3
40°	140.7	127.4	113.3	97.8	90.3	82.7	68.6	54.9	42.9	32.3	23.9
42.5°	146.0	132.3	118.1	101.8	93.8	85.8	70.3	55.7	42.9	32.3	23.4
45°	150.9	137.1	122.1	105.3	96.9	88.5	72.1	57.1	43.8	32.3	23.0
47.5°	155.3	141.6	126.1	108.4	100.0	91.1	74.3	58.0	43.8	32.3	22.6
50°	159.3	145.6	129.6	112.4	102.6	93.8	76.1	59.3	44.2	32.3	22.1
52.5°	162.8	149.1	133.6	115.5	105.3	96.0	77.4	60.2	44.7	31.9	22.1
55°	166.3	152.2	136.7	118.6	107.9	98.2	79.2	61.1	45.1	32.3	21.7
57.5°	169.4	155.7	139.4	121.2	111.0	100.4	81.0	61.9	45.6	31.9	21.7
60°	171.2	157.9	142.0	123.9	113.3	102.6	82.3	62.8	46.0	31.9	21.2
62.5°	173.4	160.6	144.2	126.1	115.5	104.9	84.1	63.7	46.5	31.9	21.2
65°	175.2	162.4	146.9	128.3	118.1	106.6	85.4	64.6	46.9	32.3	20.8
67.5°	176.5	164.1	148.6	130.1	119.9	108.4	86.7	65.5	46.9	32.3	20.8
70°	177.8	165.9	150.4	132.3	121.7	109.7	87.6	65.9	47.3	32.3	20.8
72.5°	178.7	167.2	152.2	133.2	123.0	111.5	88.9	66.8	47.8	32.3	20.8
75°	179.2	167.7	153.1	134.5	123.9	112.8	89.8	67.2	47.8	32.3	20.4
77.5°	180.1	168.6	154.0	135.4	124.8	113.7	90.3	67.7	48.2	32.3	20.4
80°	180.5	169.4	154.4	136.3	125.6	114.1	91.1	68.1	48.2	32.3	20.4
82.5°	180.5	169.9	154.8	136.7	126.1	114.6	91.6	68.6	48.7	32.3	20.4
85°	180.9	170.3	155.3	137.1	126.5	115.0	91.6	68.6	48.7	32.3	20.4
87.5°	180.9	170.3	155.7	137.6	127.0	115.5	92.0	69.0	48.7	32.3	20.4
90°	181.4	171.2	156.2	138.0	127.4	116.4	92.5	69.0	49.1	32.7	20.4
92.5°	179.6	169.0	154.8	136.7	126.1	114.6	91.6	68.6	48.7	32.3	20.4
95°	179.6	169.0	154.8	136.3	125.6	114.6	91.1	68.6	48.7	32.3	20.4
97.5°	179.6	169.0	154.4	135.8	125.6	114.1	91.1	68.6	48.7	32.3	20.4
100°	179.6	168.6	154.0	135.4	125.2	113.7	90.7	68.1	48.7	32.3	20.4
102.5°	179.6	168.1	153.5	134.9	124.3	113.3	90.3	68.1	48.2	32.3	20.8
105°	179.6	167.7	152.6	134.1	123.4	112.4	89.8	67.7	48.2	32.7	20.8
107.5°	179.2	167.2	151.7	133.6	123.0	111.9	89.4	67.2	48.2	32.7	20.8
110°	178.7	166.3	150.9	132.3	121.7	110.6	88.5	66.8	48.2	32.7	21.2





TEST NUMBER: P190111

CATALOG NUMBER: TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	177.4	164.6	149.1	130.5	120.3	108.8	87.2	66.4	47.8	32.7	21.2
115°	176.5	163.7	147.8	129.2	119.0	107.5	86.3	65.9	47.8	33.2	21.7
117.5°	175.2	161.9	146.0	127.4	117.2	106.2	85.4	65.0	47.8	33.2	22.1
120°	173.4	159.7	143.8	125.6	114.6	104.4	84.1	64.1	47.3	33.2	22.6
122.5°	170.8	157.1	141.1	123.0	112.8	102.6	82.7	63.7	46.9	33.6	22.6
125°	168.1	154.0	138.5	120.8	110.2	100.4	81.0	62.8	46.9	33.6	23.0
127.5°	165.0	151.3	135.4	117.7	107.1	97.8	79.2	61.5	46.5	33.6	23.4
130°	161.0	147.3	131.4	114.1	104.4	95.6	77.9	60.6	46.0	33.6	23.9
132.5°	157.1	143.3	128.3	111.0	101.8	92.9	76.1	59.7	46.0	34.1	24.3
135°	153.1	139.4	124.3	107.1	98.7	90.7	74.3	58.8	45.6	34.1	24.8
137.5°	147.8	134.9	120.3	103.5	95.6	88.0	72.6	58.0	45.1	34.5	25.2
140°	142.5	129.2	115.0	99.5	92.0	84.9	70.3	56.6	44.7	34.5	25.7
142.5°	136.3	123.9	109.7	96.0	88.9	81.8	68.6	55.7	44.7	34.5	26.5
145°	130.5	118.6	105.3	92.0	85.4	79.2	66.8	54.9	44.2	35.0	27.0
147.5°	123.9	112.4	100.4	88.5	82.3	76.1	64.6	54.0	44.2	35.4	27.9
150°	117.2	106.2	95.6	84.5	78.7	73.4	62.8	52.6	43.8	35.8	28.8
152.5°	108.8	99.5	89.8	80.1	74.8	69.9	60.6	51.3	43.4	35.8	29.2
155°	101.8	93.8	84.9	76.1	71.2	66.8	58.4	50.4	42.9	35.8	30.1
157.5°	95.1	87.6	80.1	72.1	67.7	64.1	56.6	49.1	42.5	36.3	31.0
160°	88.0	81.4	74.8	67.7	64.1	61.1	54.4	48.2	42.0	36.7	31.4
162.5°	80.5	75.2	69.5	63.7	60.6	57.5	52.2	46.5	41.6	36.7	32.3
165°	73.4	69.0	64.1	59.3	57.1	54.4	50.0	45.1	41.1	37.2	33.2
167.5°	66.4	63.3	59.3	55.7	53.5	51.8	47.8	44.2	40.7	37.2	34.1
170°	60.2	57.5	54.9	51.8	50.4	48.7	45.6	42.9	40.3	37.6	35.0
172.5°	53.5	51.8	50.0	47.8	46.9	45.6	43.4	41.6	39.4	37.6	35.4
175°	47.3	46.5	45.1	43.8	43.4	42.5	41.1	40.3	38.5	37.2	35.8
177.5°	42.0	41.6	41.1	40.7	40.3	40.3	39.4	38.9	38.0	37.6	37.2
180°	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7



TEST NUMBER: P190111

CATALOG NUMBER: TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
2.5°	32.7	31.9	31.0	30.5	30.5	29.6	28.8	27.9	27.4	27.0	26.5
5°	31.4	30.1	28.8	27.9	27.4	26.1	25.2	23.9	23.4	22.6	21.7
7.5°	30.1	28.3	26.5	25.7	24.8	23.0	21.7	20.4	19.5	18.1	17.3
10°	28.8	26.1	24.3	23.0	22.1	20.4	18.6	17.3	15.9	14.6	13.7
12.5°	27.4	24.8	22.1	20.8	19.9	17.7	15.9	14.2	12.8	11.5	10.6
15°	26.1	23.0	20.4	19.0	17.7	15.5	13.3	11.9	10.2	8.8	8.0
17.5°	24.8	21.7	18.1	16.8	15.5	13.3	11.1	9.3	8.0	6.6	5.8
20°	23.9	19.9	16.8	15.5	13.7	11.5	9.3	7.5	5.8	4.9	4.0
22.5°	23.0	18.6	15.0	13.7	12.4	9.7	7.5	5.8	4.4	3.5	2.7
25°	21.7	17.7	13.7	12.4	10.6	8.0	6.2	4.4	3.1	2.2	1.8
27.5°	20.8	16.4	12.4	11.1	9.3	6.6	4.9	3.5	2.2	1.8	0.9
30°	19.9	15.5	11.5	9.7	8.4	5.8	4.0	2.7	1.8	0.9	0.4
32.5°	19.5	14.6	10.2	8.8	7.1	4.9	3.1	1.8	0.9	0.9	0.4
35°	18.6	13.7	9.3	7.5	6.2	4.0	2.2	1.3	0.9	0.4	0.4
37.5°	17.7	12.8	8.4	7.1	5.3	3.1	1.8	0.9	0.4	0.4	0.4
40°	17.3	11.9	8.0	6.2	4.9	2.7	1.3	0.9	0.9	0.4	0.4
42.5°	16.4	11.5	7.1	5.3	4.0	2.2	0.9	0.9	0.9	0.4	0.4
45°	15.9	10.6	6.2	4.9	3.5	1.8	0.9	0.9	0.9	0.4	0.9
47.5°	15.5	10.2	5.8	4.4	3.1	1.3	0.9	0.9	0.9	0.4	0.4
50°	15.0	9.7	5.3	4.0	2.7	1.3	0.9	0.9	0.9	0.9	0.9
52.5°	14.6	9.3	4.9	3.5	2.2	0.9	0.9	0.9	0.9	0.9	0.4
55°	14.2	8.8	4.4	3.1	2.2	0.9	0.9	0.9	0.9	0.9	0.9
57.5°	13.7	8.4	4.4	3.1	1.8	0.9	0.9	0.9	0.9	0.9	0.9
60°	13.7	8.0	4.0	2.7	1.8	0.9	0.9	0.9	0.9	0.9	0.9
62.5°	13.3	8.0	4.0	2.7	1.8	0.9	0.9	0.9	0.9	0.9	0.9
65°	13.3	7.5	3.5	2.2	1.3	0.9	0.9	0.9	0.9	0.9	0.9
67.5°	12.8	7.5	3.5	2.2	1.3	0.9	0.9	0.9	0.9	0.9	0.9
70°	12.8	7.1	3.5	2.2	1.3	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	12.8	7.1	3.1	2.2	1.3	1.3	0.9	0.9	0.9	0.9	0.9
75°	12.4	7.1	3.1	2.2	1.3	1.3	1.3	0.9	0.9	1.3	1.3
77.5°	12.4	6.6	3.1	1.8	1.3	1.3	1.3	1.3	1.3	1.3	0.9
80°	12.4	6.6	3.1	1.8	1.3	0.9	0.9	1.3	0.9	1.3	0.9
82.5°	12.4	6.6	3.1	1.8	1.3	0.9	0.9	1.3	1.3	0.9	0.9
85°	12.4	6.6	2.7	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
87.5°	11.9	6.6	2.7	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
90°	12.4	6.6	2.7	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
92.5°	12.4	6.6	2.7	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
95°	12.4	6.6	2.7	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
97.5°	12.4	6.6	3.1	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
100°	12.4	6.6	3.1	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
102.5°	12.4	7.1	3.1	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
105°	12.8	7.1	3.1	1.8	1.3	0.9	0.9	0.9	0.9	0.9	0.9
107.5°	12.8	7.1	3.5	2.2	1.3	0.9	0.9	0.9	0.9	0.9	0.9
110°	13.3	7.5	3.5	2.2	1.3	0.9	0.9	0.9	0.9	0.9	0.9



TEST NUMBER: P190111

CATALOG NUMBER: TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	13.3	7.5	3.5	2.2	1.3	0.9	0.9	0.9	0.9	0.9	0.9
115°	13.7	8.0	4.0	2.7	1.8	0.9	0.9	0.9	0.9	0.9	0.9
117.5°	14.2	8.4	4.4	3.1	1.8	0.9	0.9	0.9	0.9	0.9	0.9
120°	14.6	8.8	4.9	3.1	2.2	0.9	0.9	0.9	0.9	0.9	0.9
122.5°	15.0	9.3	4.9	3.5	2.2	0.9	0.9	0.9	0.9	0.9	0.9
125°	15.5	9.7	5.3	4.0	2.7	1.3	0.9	0.9	0.9	0.9	0.9
127.5°	15.9	10.2	5.8	4.4	3.1	1.3	0.9	0.9	0.9	0.9	0.9
130°	16.4	10.6	6.2	4.9	3.5	1.3	0.9	0.9	0.9	0.9	0.9
132.5°	16.8	11.5	7.1	5.3	4.0	1.8	0.9	0.9	0.9	0.4	0.4
135°	17.7	11.9	7.5	5.8	4.4	2.2	0.9	0.9	0.9	0.4	0.4
137.5°	18.1	12.8	8.4	6.6	5.3	3.1	1.3	0.9	0.9	0.9	0.9
140°	19.0	13.7	9.3	7.5	5.8	3.5	1.8	0.9	0.9	0.4	0.4
142.5°	19.9	14.6	10.2	8.4	6.6	4.4	2.7	1.3	0.9	0.4	0.4
145°	20.8	15.5	11.5	9.3	8.0	5.3	3.1	1.8	0.9	0.4	0.4
147.5°	21.7	16.8	12.4	10.6	8.8	6.2	4.0	2.7	1.8	0.9	0.4
150°	22.6	17.7	13.7	11.9	10.2	7.5	5.3	3.5	2.2	1.3	0.9
152.5°	23.4	19.0	15.0	13.3	11.5	8.8	6.6	4.9	3.1	2.2	1.3
155°	24.8	20.4	16.4	14.6	13.3	10.2	8.0	6.2	4.4	3.5	2.7
157.5°	25.7	21.7	18.1	16.4	14.6	12.4	9.7	8.0	6.2	4.9	4.0
160°	27.0	23.0	19.5	18.1	16.8	14.2	11.9	9.7	8.4	6.6	5.8
162.5°	28.3	24.8	21.2	19.9	18.6	16.4	14.2	11.9	10.6	8.8	8.0
165°	29.6	26.1	23.4	22.1	20.8	18.6	16.4	14.6	13.3	11.5	10.6
167.5°	31.0	27.9	25.2	24.3	23.0	21.2	19.0	17.7	15.9	14.6	13.7
170°	32.3	29.6	27.4	26.5	25.7	23.9	22.1	20.8	19.5	18.1	16.8
172.5°	33.2	31.4	29.6	29.2	28.3	27.0	25.2	24.3	23.0	21.7	20.8
175°	34.5	33.2	32.3	31.9	31.0	30.1	29.2	28.3	27.4	26.5	25.7
177.5°	36.3	35.4	35.0	34.5	34.5	34.1	33.2	32.7	31.9	31.4	31.0
180°	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7



TEST NUMBER: P190111

CATALOG NUMBER: TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
2.5°	26.1	25.7	25.2	25.2	24.8	24.8	24.8	24.3
5°	20.8	20.4	19.9	19.9	19.5	19.5	19.0	19.0
7.5°	16.4	15.9	15.5	15.5	15.0	14.6	14.2	14.2
10°	12.8	11.9	11.9	11.5	11.1	10.6	10.6	10.6
12.5°	9.7	8.8	8.4	8.4	8.0	7.5	7.1	7.1
15°	7.1	6.2	5.8	5.8	5.3	4.9	4.9	4.4
17.5°	4.9	4.0	4.0	3.5	3.1	3.1	3.1	3.1
20°	3.1	2.7	2.7	2.2	2.2	1.8	1.8	1.8
22.5°	2.2	1.8	1.3	1.3	0.9	0.9	0.9	0.9
25°	1.3	0.9	0.9	0.9	0.4	0.4	0.4	0.4
27.5°	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4
30°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
32.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
35°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
37.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
40°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
42.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
45°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
47.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
50°	0.9	0.9	0.4	0.4	0.4	0.4	0.4	0.4
52.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.9
55°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
57.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
60°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
62.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	1.3	0.9	0.9	1.3	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	1.3	1.3	0.9	0.9	1.3
80°	0.9	0.9	0.9	0.9	1.3	0.9	0.9	0.9
82.5°	0.9	0.9	1.3	0.9	0.9	0.9	0.9	0.9
85°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
90°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
92.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
95°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
97.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
100°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
102.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
105°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
107.5°	0.9	0.9	0.9	0.9	0.9	0.4	0.4	0.4
110°	0.9	0.9	0.9	0.9	0.9	0.9	0.4	0.4



TEST NUMBER: P190111

CATALOG NUMBER: TRB11-LD4-10W-50-CL-BK-UNV-EDC1-CSTG

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	0.9	0.9	0.9	0.9	0.4	0.4	0.4	0.4
115°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
117.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
120°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
122.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
125°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
127.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
130°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
132.5°	0.9	0.9	0.4	0.4	0.4	0.4	0.4	0.4
135°	0.4	0.4	0.4	0.4	0.9	0.4	0.4	0.4
137.5°	0.4	0.4	0.4	0.9	0.9	0.4	0.4	0.4
140°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
142.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
145°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
147.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
150°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
152.5°	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4
155°	1.8	1.3	1.3	0.9	0.9	0.4	0.4	0.4
157.5°	3.1	2.7	2.2	2.2	1.8	1.8	1.3	1.3
160°	4.9	4.0	4.0	3.5	3.1	3.1	2.7	2.7
162.5°	7.1	6.2	5.8	5.8	4.9	4.9	4.4	4.4
165°	9.7	8.8	8.4	8.0	7.5	7.1	7.1	6.6
167.5°	12.8	11.9	11.5	11.5	10.6	10.2	10.2	10.2
170°	16.4	15.5	15.0	15.0	14.2	14.2	13.7	13.7
172.5°	20.4	19.5	19.0	19.0	18.6	18.1	18.1	18.1
175°	25.2	24.3	23.9	23.9	23.4	23.4	23.0	23.0
177.5°	31.0	30.5	30.1	30.1	29.6	29.6	29.6	29.6
180°	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7

(END OF REPORT)