

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: P190084

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P190084
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27857)
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
Description: TERRAPIN 11" LED WALL MOUNT WITH BORDER PAINTED CLEAR LENS
Light Source: (56) NICHIA 5000
NF2L757DRT
Ballast/Driver: OSRAM ELECTRONIC DRIVER PROGRAMMED AT 200mA
OT25W/1

Summary

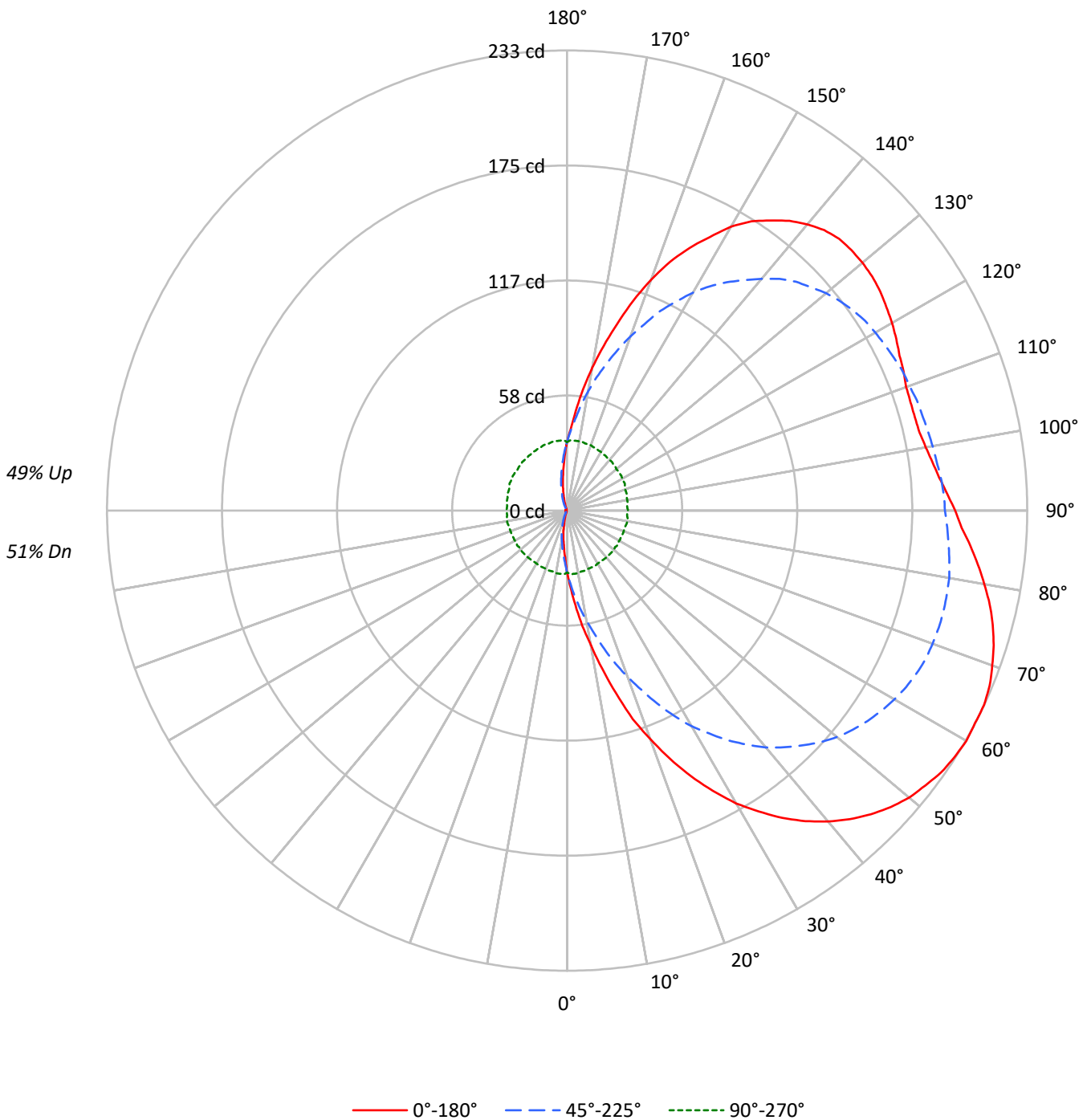
Lumens per Lamp: N/A
Luminaire Lumens: 940.1 lumens
Efficiency: N/A
Efficacy: 94.0 lumens/watt
Spacing Criteria (0/90/45): 3.36 / 1.51 / 2.96
Luminous Opening: Rectangular w/ Sides (W: 0.92' x L: 0.29' x H: 0.92')
CIE Type: General Diffuse

Input Watts (W): 10
Input Voltage (V): NR
Input Current (Ain): 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	84	84	84	70	70	70	57	57	57	51
1	93	87	81	76	85	80	75	70	66	62	59	54	51	48	43	41	39	33
2	83	73	65	58	75	67	60	53	55	50	45	45	40	37	35	32	29	24
3	74	62	53	46	68	57	49	42	47	41	35	38	33	29	29	26	22	18
4	67	54	45	37	61	50	41	34	41	34	29	33	28	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	26	20	16	20	16	12	9
7	52	38	29	22	47	35	26	21	29	22	17	23	18	14	18	14	10	8
8	48	34	25	19	43	31	23	18	26	19	15	21	16	12	16	12	9	6
9	44	31	22	17	40	28	21	16	23	17	13	19	14	10	15	11	8	6
10	41	28	20	15	38	26	18	14	21	15	11	17	13	9	14	10	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	1260	1260	1260
5°	1521	1197	583
10°	1818	1119	281
15°	2165	1042	115
20°	2460	983	42
25°	2674	948	7
30°	2828	911	7
35°	2918	893	6
40°	2969	883	6
45°	2989	880	5
50°	2984	883	5
55°	2957	893	12
60°	2915	899	11
65°	2867	924	11
70°	2799	958	11
75°	2726	1003	11
80°	2642	1074	11
85°	2565	1133	11



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3.2	0.3
10°-20°	11.9	1.3
20°-30°	25.3	2.7
30°-40°	42.2	4.5
40°-50°	59.7	6.3
50°-60°	74.8	8.0
60°-70°	85.4	9.1
70°-80°	90.6	9.6
80°-90°	90.4	9.6
90°-100°	87.2	9.3
100°-110°	82.6	8.8
110°-120°	77.1	8.2
120°-130°	69.0	7.3
130°-140°	57.0	6.1
140°-150°	41.8	4.4
150°-160°	25.9	2.8
160°-170°	12.6	1.3
170°-180°	3.5	0.4
0°-30°	40.4	4.3
0°-40°	82.6	8.8
0°-60°	217.1	23.1
0°-90°	483.5	51.4
90°-120°	246.8	26.3
90°-150°	414.5	44.1
90°-180°	457.0	48.6
0°-180°	940.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	31	31	31	31	31	
5°	48	43	32	22	18	5
15°	96	72	32	10	5	28
25°	148	108	31	3	0	69
35°	190	142	31	1	0	119
45°	218	168	31	1	0	168
55°	231	186	31	1	1	207
65°	233	195	30	1	1	230
75°	223	197	30	1	1	235
85°	205	194	30	1	1	169
90°	196	191	31	1	1	108
95°	189	190	30	1	1	154
105°	182	186	31	1	0	193
115°	186	183	32	1	1	185
125°	194	177	33	1	1	173
135°	195	164	33	0	0	150
145°	179	141	34	1	0	113
155°	147	112	35	4	0	68
165°	98	77	35	11	6	29
175°	51	46	36	25	21	6
180°	35	35	35	35	35	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
2.5°	38.6	39.0	38.6	38.6	38.2	38.2	38.2	38.2	37.7	37.3	36.9
5°	48.0	48.0	47.6	47.6	46.8	46.3	46.3	45.9	45.0	43.8	43.3
7.5°	58.8	57.9	57.5	57.5	56.2	55.8	55.3	54.0	52.8	51.0	49.8
10°	69.1	69.1	68.6	68.2	66.1	65.6	64.8	63.5	61.3	59.2	56.6
12.5°	81.9	81.9	80.6	79.4	77.6	77.2	75.9	73.8	70.8	67.3	63.9
15°	95.7	95.7	94.4	93.1	90.5	89.2	87.9	84.9	80.6	76.8	72.5
17.5°	110.7	109.4	107.7	106.0	103.4	101.7	99.9	96.1	91.4	86.2	81.1
20°	123.1	123.5	121.8	119.7	116.7	115.0	112.8	107.7	102.1	96.1	89.7
22.5°	136.0	136.0	134.3	131.7	128.7	127.0	124.4	119.7	113.2	105.5	98.2
25°	148.4	147.6	146.7	143.7	140.3	138.1	136.0	130.8	124.0	116.2	107.7
27.5°	160.0	159.6	158.3	154.9	151.8	149.3	147.1	141.6	134.3	126.1	117.1
30°	171.2	170.3	169.0	165.6	162.1	159.6	157.4	151.4	144.1	135.5	126.1
32.5°	180.6	179.7	178.4	175.4	172.0	169.0	166.4	160.4	153.1	144.1	133.8
35°	190.0	189.2	187.5	184.4	181.0	178.4	175.9	169.4	161.3	152.3	142.0
37.5°	198.2	197.3	196.0	192.6	189.6	186.6	184.0	177.2	169.4	160.4	149.3
40°	205.5	205.0	203.8	200.3	197.3	194.3	191.3	184.9	177.2	167.7	156.6
42.5°	211.9	211.0	210.2	207.2	203.3	200.7	198.2	191.3	183.2	174.2	162.6
45°	217.5	216.6	215.3	212.3	208.9	206.3	203.8	196.9	189.2	179.7	168.1
47.5°	222.2	221.3	220.1	217.5	213.6	211.5	208.5	202.0	194.3	185.3	173.7
50°	226.1	225.6	223.9	221.3	217.9	215.8	212.8	206.8	199.0	189.6	178.4
52.5°	228.6	228.2	226.9	224.8	221.3	218.8	216.6	209.8	202.5	193.5	182.3
55°	231.2	230.8	229.5	226.9	223.5	220.9	218.3	212.8	205.5	196.9	185.7
57.5°	232.5	232.1	230.8	228.2	225.2	222.6	220.5	214.9	208.0	199.5	188.7
60°	233.3	232.9	231.2	229.1	226.1	223.5	221.3	216.2	209.3	201.6	191.3
62.5°	232.9	232.9	231.2	229.1	226.1	223.9	221.8	217.0	210.6	202.9	193.5
65°	232.9	232.1	230.8	228.2	225.6	223.9	221.8	217.0	211.5	204.2	195.2
67.5°	231.6	231.2	229.5	227.3	224.8	222.6	220.9	217.0	211.9	205.0	196.5
70°	229.1	229.1	227.3	225.2	222.6	221.3	219.6	215.8	211.5	205.5	196.9
72.5°	226.5	226.1	224.8	222.6	220.5	219.2	217.9	214.5	210.2	204.6	197.3
75°	223.1	222.6	221.3	219.6	217.9	216.6	215.3	212.8	209.3	204.2	197.3
77.5°	219.2	218.8	217.9	216.2	214.5	213.6	212.3	210.6	207.6	203.3	196.9
80°	214.5	214.0	213.2	211.9	210.6	210.2	209.3	207.6	205.5	202.0	196.5
82.5°	209.8	209.3	208.9	207.6	206.8	206.8	205.9	205.0	203.8	200.3	195.2
85°	205.0	204.6	204.6	203.3	202.9	202.5	202.9	202.0	201.2	198.6	193.9
87.5°	199.9	199.9	199.9	199.0	199.0	199.0	199.0	199.0	198.6	196.9	192.6
90°	196.5	196.0	195.6	195.6	195.6	195.6	196.0	196.5	196.5	195.2	191.3
92.5°	192.6	192.2	192.2	192.6	193.0	193.5	193.9	194.7	195.2	193.9	190.9
95°	189.2	189.6	189.6	189.6	190.5	190.9	191.3	192.6	193.5	193.0	190.0
97.5°	186.6	186.6	186.6	187.0	187.9	188.7	189.6	190.9	191.7	191.3	188.7
100°	184.4	184.4	184.9	185.3	186.2	187.0	187.9	189.6	190.5	190.5	187.9
102.5°	182.7	182.7	183.2	184.0	185.3	185.7	187.0	188.3	189.6	189.6	187.0
105°	182.3	182.3	182.7	183.6	184.9	185.3	186.2	187.9	189.2	188.7	186.2
107.5°	182.3	182.3	182.7	183.6	184.9	185.7	186.2	187.9	188.7	188.3	185.7
110°	182.7	183.2	183.2	184.4	185.3	185.7	187.0	187.9	188.7	187.5	184.4



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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	184.4	184.4	184.9	185.3	186.6	187.0	187.5	188.7	188.7	187.5	184.0
115°	185.7	186.2	186.2	187.0	187.9	188.3	188.3	189.2	188.7	187.0	182.7
117.5°	187.9	187.9	188.3	188.3	189.2	189.6	189.6	189.6	188.7	186.6	181.4
120°	190.0	190.0	190.0	190.5	190.5	190.5	190.9	190.0	188.7	185.7	180.2
122.5°	191.7	192.2	192.2	191.7	191.7	191.7	191.7	190.5	188.3	184.9	178.9
125°	193.5	193.5	193.0	193.0	192.6	192.2	191.7	190.5	187.5	183.2	176.7
127.5°	194.7	194.3	194.3	193.5	192.6	192.2	191.7	189.6	186.2	181.0	174.2
130°	195.2	195.2	194.7	193.9	192.6	191.7	190.9	187.9	184.0	178.9	171.2
132.5°	195.2	195.2	194.7	193.5	191.7	190.9	189.6	186.6	181.9	175.9	167.3
135°	194.7	194.7	193.5	192.6	190.5	189.2	187.9	184.0	178.9	172.4	163.9
137.5°	192.6	192.6	191.7	190.0	187.9	186.6	184.9	180.2	175.0	168.1	159.1
140°	189.2	188.7	187.9	186.2	183.6	181.9	180.2	175.4	169.4	162.1	153.1
142.5°	184.9	184.0	182.7	181.4	178.4	176.7	175.0	169.9	163.9	156.6	147.1
145°	179.3	178.9	177.6	175.9	172.9	171.2	169.4	163.9	157.9	150.1	141.1
147.5°	173.7	173.3	171.6	169.9	166.9	164.7	163.0	157.4	151.0	143.7	134.7
150°	166.0	165.1	163.9	161.7	158.7	157.0	155.3	149.3	143.3	136.0	127.4
152.5°	156.1	156.6	154.9	152.3	149.3	147.6	145.8	140.7	134.3	127.0	119.2
155°	146.7	146.3	144.1	142.4	139.4	137.7	136.0	131.3	125.3	118.4	111.5
157.5°	136.4	136.0	135.1	132.1	129.1	127.8	126.1	121.4	116.2	109.0	102.1
160°	124.4	124.4	122.7	120.5	118.0	116.7	115.4	111.1	105.5	99.5	93.9
162.5°	111.5	111.5	110.7	107.2	105.1	104.2	102.5	99.1	95.2	90.1	85.4
165°	97.8	96.5	96.9	94.8	93.1	92.2	91.4	87.9	84.9	80.6	76.8
167.5°	85.4	84.5	84.9	83.2	81.5	81.1	80.2	77.6	75.5	71.6	69.1
170°	73.4	72.5	72.9	71.6	70.3	70.3	69.5	67.8	66.1	63.1	61.3
172.5°	61.8	60.5	61.3	60.5	59.6	59.6	59.2	57.9	56.6	54.9	53.6
175°	50.6	49.8	50.6	50.2	49.3	49.8	49.3	48.5	48.0	46.8	46.3
177.5°	41.2	41.2	41.2	41.6	40.8	41.2	41.2	40.8	40.8	40.3	40.3
180°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
2.5°	36.9	36.0	35.6	35.2	34.7	34.7	34.3	33.5	32.6	32.2	31.3
5°	42.0	41.2	39.9	38.6	38.2	37.3	36.0	34.7	33.5	32.2	30.9
7.5°	47.6	45.9	44.2	42.0	41.2	39.9	38.2	36.0	33.9	32.2	30.5
10°	54.0	51.0	48.5	45.9	44.2	42.9	39.9	37.3	34.7	32.2	29.6
12.5°	60.5	57.1	53.2	48.9	47.2	45.5	42.0	38.6	35.2	31.7	28.7
15°	67.8	63.1	57.9	53.2	51.0	48.9	44.2	39.5	35.6	31.7	28.3
17.5°	75.1	69.5	63.5	57.5	54.5	51.5	46.3	41.2	36.0	31.7	27.9
20°	82.4	75.9	68.6	61.3	57.9	54.5	48.0	42.0	36.5	31.3	27.0
22.5°	90.5	82.4	73.8	65.6	61.8	57.5	50.2	43.3	36.9	31.3	26.2
25°	98.2	89.2	79.4	69.9	65.6	60.9	52.3	44.6	37.3	31.3	25.7
27.5°	106.4	96.1	85.4	74.6	69.5	64.3	54.5	45.9	38.2	31.3	25.3
30°	115.4	102.9	90.9	78.9	73.4	67.8	57.1	47.2	38.6	30.9	24.5
32.5°	122.7	109.8	96.5	83.2	77.2	70.8	59.2	48.5	39.0	30.9	24.0
35°	130.0	117.1	102.1	87.9	81.1	74.2	61.3	49.8	39.5	30.9	23.6
37.5°	137.3	123.5	108.1	92.2	84.9	77.6	63.5	51.0	39.9	30.9	23.2
40°	143.7	130.0	114.1	96.9	88.8	80.6	65.6	52.3	40.8	30.9	22.7
42.5°	149.7	135.5	119.2	100.8	92.7	83.6	67.8	53.2	41.2	30.9	22.3
45°	155.3	140.3	124.0	104.7	96.1	87.1	69.9	54.5	41.6	30.9	22.3
47.5°	160.4	145.4	128.3	109.4	99.5	90.1	71.6	55.8	42.0	30.9	21.9
50°	165.1	150.1	132.5	113.2	102.5	92.7	73.8	57.1	42.5	30.9	21.4
52.5°	169.4	154.0	136.4	116.7	105.5	95.2	75.5	57.9	42.9	30.5	21.0
55°	172.9	157.9	139.8	120.1	109.0	97.8	77.2	58.8	43.3	30.9	21.0
57.5°	175.9	160.9	142.8	122.7	111.5	100.4	78.9	60.1	43.8	30.5	20.6
60°	178.9	163.9	145.8	125.7	115.0	102.5	80.6	60.9	44.2	30.5	20.6
62.5°	181.0	166.4	148.8	128.3	117.1	104.7	82.4	61.8	44.2	30.5	20.2
65°	183.2	169.0	151.0	130.4	119.2	107.2	83.6	62.6	44.6	30.5	20.2
67.5°	184.9	170.7	153.6	133.0	121.4	109.4	84.9	63.5	45.0	30.5	19.7
70°	186.2	172.4	155.3	134.7	123.5	111.1	86.2	64.3	45.5	30.5	19.7
72.5°	187.0	173.7	157.0	136.4	124.8	112.4	87.5	64.8	45.5	30.5	19.7
75°	187.9	174.6	157.9	137.7	126.5	114.5	88.4	65.2	45.9	30.5	19.7
77.5°	187.9	175.4	159.1	139.0	127.8	115.4	89.2	66.1	46.3	30.9	19.3
80°	187.5	175.4	159.6	139.4	128.3	116.2	90.1	66.5	46.3	30.9	19.3
82.5°	187.5	175.4	160.0	140.3	129.1	117.1	90.5	66.9	46.8	30.9	19.3
85°	186.6	175.4	160.0	140.3	129.5	117.1	90.9	66.9	46.8	30.5	19.3
87.5°	185.7	175.0	160.0	140.7	129.5	117.5	91.4	67.3	46.8	30.5	18.9
90°	184.9	174.6	159.6	140.7	129.5	117.5	91.4	67.3	46.8	30.9	18.9
92.5°	184.4	174.2	159.6	140.3	129.1	117.1	91.4	67.3	46.8	30.5	18.9
95°	184.0	173.7	159.1	140.3	129.1	117.5	91.4	67.3	46.8	30.5	18.9
97.5°	183.2	172.9	158.3	139.4	128.7	117.1	91.4	67.3	46.8	30.9	19.3
100°	181.9	172.0	157.4	139.0	128.3	116.7	90.9	67.3	47.2	30.9	19.3
102.5°	181.4	171.2	156.6	138.1	127.4	115.8	90.9	67.3	47.2	30.9	19.3
105°	180.2	170.3	155.7	137.3	126.5	115.4	90.5	67.3	47.2	31.3	19.7
107.5°	179.3	169.0	154.4	136.0	125.7	114.5	89.7	66.9	47.2	31.3	19.7
110°	178.0	167.7	152.7	134.7	124.0	113.2	89.2	66.9	47.2	31.3	20.2



TEST NUMBER: P190084

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	177.2	166.0	151.4	133.4	123.1	112.0	88.4	66.5	47.2	31.7	20.2
115°	175.4	164.3	149.3	131.3	121.4	110.2	87.5	66.1	47.2	32.2	20.6
117.5°	173.7	162.6	147.6	129.5	119.7	108.1	86.2	65.2	47.2	32.2	21.0
120°	172.0	160.4	145.4	127.4	117.5	106.0	84.9	64.8	46.8	32.2	21.4
122.5°	169.9	157.9	142.8	125.3	115.4	104.2	83.6	63.9	46.8	32.6	21.4
125°	167.3	155.3	139.8	122.3	112.4	102.1	81.9	63.1	46.3	32.6	21.9
127.5°	164.3	151.8	136.8	119.2	109.4	99.5	80.2	62.2	45.9	32.6	22.3
130°	160.9	148.4	133.4	116.2	106.0	96.9	78.5	60.9	45.5	32.6	22.7
132.5°	157.0	144.6	129.5	112.8	102.9	94.4	76.8	60.1	45.5	33.0	23.2
135°	153.1	140.7	125.7	109.0	99.9	91.4	74.6	59.2	45.0	33.0	23.6
137.5°	148.4	136.0	121.4	104.7	96.5	88.8	72.9	57.9	44.6	33.5	24.0
140°	142.4	130.4	116.2	100.4	93.1	85.4	70.3	56.6	44.2	33.5	24.5
142.5°	136.8	124.8	111.5	96.5	89.2	82.4	68.2	55.3	43.8	33.5	25.3
145°	130.8	119.7	105.5	92.7	85.8	79.4	66.5	54.5	43.3	33.9	25.7
147.5°	124.8	114.1	100.8	88.4	82.4	76.4	64.3	53.2	42.9	33.9	26.6
150°	118.0	106.8	95.7	84.5	78.5	72.9	62.2	51.9	42.5	34.3	27.0
152.5°	110.7	100.4	90.1	79.8	74.6	69.5	60.1	50.6	42.0	34.3	27.5
155°	102.1	93.9	84.5	75.5	70.8	66.5	57.5	49.3	41.6	34.7	28.3
157.5°	95.2	87.5	79.4	71.2	67.3	63.5	55.3	48.0	41.2	34.7	29.2
160°	87.5	81.1	73.8	66.9	63.5	60.1	53.2	46.8	40.8	35.2	30.0
162.5°	79.8	74.2	68.2	62.2	59.6	56.6	50.6	45.5	39.9	35.2	30.5
165°	72.5	67.8	62.6	57.9	55.8	53.2	48.5	43.8	39.5	35.2	31.3
167.5°	65.2	61.8	57.9	54.0	51.9	50.2	46.3	42.5	39.0	35.6	32.2
170°	58.3	55.8	52.8	49.8	48.5	47.2	44.2	41.2	38.2	35.6	33.0
172.5°	51.9	49.8	48.0	45.9	44.6	43.8	41.6	39.5	37.3	35.6	33.5
175°	45.5	44.2	43.3	42.0	41.2	40.8	39.5	38.2	36.9	35.6	34.3
177.5°	39.9	39.5	39.0	38.2	38.2	37.7	37.3	36.9	36.5	35.6	35.2
180°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7



TEST NUMBER: P190084

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
2.5°	30.9	30.0	29.2	29.2	28.7	27.9	27.5	27.0	26.2	25.7	25.3
5°	29.6	28.3	27.0	26.6	26.2	24.9	24.0	23.2	22.3	21.4	20.6
7.5°	28.3	26.6	24.9	24.5	23.6	21.9	21.0	19.7	18.4	18.0	16.7
10°	27.5	25.3	23.2	22.3	21.4	19.3	18.0	16.7	15.4	14.6	13.7
12.5°	26.2	23.6	21.0	20.2	18.9	17.2	15.4	14.2	12.9	11.6	10.7
15°	24.9	21.9	19.3	18.0	17.2	15.0	13.3	11.6	10.3	9.0	8.2
17.5°	24.0	20.6	17.6	16.7	15.4	13.3	11.2	9.9	8.2	6.9	6.0
20°	22.7	19.3	16.3	15.0	13.7	11.6	9.4	7.7	6.0	5.1	4.3
22.5°	21.9	18.0	14.6	13.3	12.0	9.9	7.7	6.0	4.7	3.9	3.0
25°	21.0	16.7	13.7	12.0	10.7	8.2	6.0	4.7	3.4	2.6	2.1
27.5°	20.2	15.9	12.4	10.7	9.4	6.9	5.1	3.4	2.6	1.7	1.3
30°	19.3	15.0	11.2	9.4	8.2	5.6	3.9	2.6	1.7	0.9	0.9
32.5°	18.4	14.2	10.3	8.6	7.3	4.7	3.0	2.1	1.3	0.9	0.4
35°	17.6	13.3	9.4	7.7	6.0	3.9	2.6	1.3	0.9	0.4	0.4
37.5°	17.2	12.4	8.6	6.9	5.6	3.4	2.1	0.9	0.9	0.4	0.4
40°	16.7	11.6	7.7	6.0	4.7	3.0	1.7	0.9	0.9	0.4	0.4
42.5°	15.9	11.2	6.9	5.6	4.3	2.6	1.3	0.9	0.9	0.9	0.4
45°	15.4	10.3	6.4	4.7	3.9	2.1	0.9	0.9	0.9	0.4	0.4
47.5°	15.0	9.9	6.0	4.3	3.4	1.7	0.9	0.9	0.9	0.9	0.4
50°	14.6	9.4	5.6	3.9	3.0	1.3	0.9	0.9	0.9	0.9	0.9
52.5°	14.2	8.6	5.1	3.4	2.6	1.3	0.9	0.9	0.9	0.9	0.9
55°	13.7	8.2	4.7	3.4	2.1	0.9	0.9	0.9	0.9	0.9	0.9
57.5°	13.3	8.2	4.3	3.0	2.1	0.9	0.9	0.9	0.9	0.9	0.9
60°	13.3	7.7	3.9	3.0	1.7	0.9	0.9	0.9	0.9	0.9	0.9
62.5°	12.9	7.3	3.9	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9
65°	12.4	6.9	3.4	2.1	1.7	0.9	0.9	0.9	0.9	0.9	0.9
67.5°	12.0	6.9	3.4	2.1	1.3	0.9	0.9	0.9	0.9	0.9	0.9
70°	12.0	6.4	3.4	2.1	1.3	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	12.0	6.4	3.0	2.1	1.3	0.9	0.9	0.9	0.9	0.9	0.9
75°	11.6	6.4	3.0	2.1	1.3	1.3	1.3	1.3	0.9	0.9	1.3
77.5°	11.6	6.0	3.0	1.7	1.3	1.3	1.3	0.9	1.3	1.3	1.3
80°	11.6	6.0	3.0	1.7	1.3	1.3	0.9	1.3	1.3	1.3	0.9
82.5°	11.6	6.0	2.6	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	11.2	5.6	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
87.5°	11.2	5.6	2.6	1.3	0.9	0.9	0.9	0.9	0.9	0.9	0.9
90°	11.2	5.6	2.6	1.3	0.9	0.9	0.9	0.9	0.9	0.9	0.9
92.5°	11.2	5.6	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
95°	11.2	5.6	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
97.5°	11.2	5.6	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
100°	11.2	6.0	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
102.5°	11.6	6.0	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
105°	11.6	6.0	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
107.5°	11.6	6.0	3.0	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
110°	12.0	6.4	3.0	1.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9



TEST NUMBER: P190084

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	12.0	6.4	3.0	2.1	1.3	0.9	0.9	0.9	0.9	0.9	0.9
115°	12.4	6.9	3.4	2.1	1.3	0.9	0.9	0.9	0.9	0.9	0.9
117.5°	12.9	7.3	3.9	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9
120°	13.3	7.7	3.9	2.6	1.7	0.9	0.9	0.9	0.9	0.9	0.9
122.5°	13.7	8.2	4.3	3.0	2.1	0.9	0.9	0.9	0.9	0.9	0.9
125°	14.2	8.6	4.7	3.4	2.1	0.9	0.9	0.9	0.9	0.9	0.9
127.5°	14.6	9.0	5.1	3.4	2.6	1.3	0.9	0.9	0.9	0.9	0.9
130°	15.0	9.4	5.6	3.9	3.0	1.3	0.9	0.9	0.9	0.9	0.9
132.5°	15.4	9.9	6.0	4.3	3.0	1.7	0.9	0.9	0.4	0.4	0.4
135°	16.3	10.7	6.4	5.1	3.9	1.7	0.9	0.9	0.4	0.4	0.4
137.5°	16.7	11.6	7.3	5.6	4.3	2.6	1.3	0.9	0.4	0.4	0.4
140°	17.6	12.0	7.7	6.4	4.7	3.0	1.7	0.9	0.4	0.4	0.4
142.5°	18.4	12.9	8.6	7.3	5.6	3.4	2.1	1.3	0.4	0.4	0.4
145°	19.3	13.7	9.9	8.2	6.4	4.3	2.6	1.7	0.9	0.4	0.4
147.5°	20.2	15.0	10.7	9.0	7.7	5.1	3.4	2.1	1.3	0.9	0.4
150°	21.0	15.9	12.0	10.3	8.6	6.0	4.3	3.0	1.7	1.3	0.9
152.5°	21.9	17.2	13.3	11.6	9.9	7.3	5.1	3.9	2.6	1.7	1.3
155°	22.7	18.4	14.6	12.9	11.6	8.6	6.4	5.1	3.9	3.0	2.1
157.5°	24.0	19.7	16.3	14.6	12.9	10.3	8.2	6.4	5.1	3.9	3.4
160°	25.3	21.0	17.6	16.3	15.0	12.0	10.3	8.2	6.9	5.6	4.7
162.5°	26.6	22.7	19.3	18.0	16.7	14.2	12.4	10.3	8.6	7.3	6.4
165°	27.5	24.5	21.4	20.2	18.9	16.3	14.6	12.9	11.2	9.9	9.0
167.5°	28.7	26.2	23.6	22.3	21.0	18.9	17.2	15.4	14.2	12.9	11.6
170°	30.5	27.9	25.7	24.9	23.6	21.9	20.2	18.4	17.2	16.3	15.0
172.5°	31.3	29.6	27.9	27.0	26.2	24.9	23.2	21.9	21.0	19.7	18.9
175°	33.0	31.7	30.5	29.6	29.2	27.9	27.0	26.2	25.3	24.5	23.6
177.5°	34.3	33.9	33.0	32.6	32.6	31.7	31.3	30.5	30.0	29.6	29.2
180°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7



TEST NUMBER: P190084

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3
2.5°	24.9	24.9	24.5	24.0	23.6	23.6	23.6	23.6
5°	20.2	19.7	19.7	19.3	18.9	18.4	18.4	18.4
7.5°	16.3	15.9	15.4	15.0	14.6	14.6	14.2	14.2
10°	12.9	12.0	12.0	11.6	11.2	10.7	10.7	10.7
12.5°	9.9	9.4	9.0	8.6	8.2	7.7	7.7	7.3
15°	7.3	6.4	6.4	6.0	5.6	5.1	5.1	5.1
17.5°	5.1	4.7	4.3	4.3	3.9	3.4	3.4	3.4
20°	3.4	3.0	3.0	2.6	2.6	2.1	2.1	2.1
22.5°	2.6	2.1	1.7	1.7	1.3	1.3	0.9	1.3
25°	1.3	1.3	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°	0.9	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	0.9	0.9	0.9	0.9	0.4	0.4
52.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.4	0.4
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°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	1.3	0.9	1.3	1.3	0.9	0.9	1.3	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	0.4	0.4
105°	0.9	0.9	0.9	0.9	0.4	0.4	0.4	0.4
107.5°	0.9	0.9	0.9	0.9	0.4	0.4	0.4	0.4
110°	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4



TEST NUMBER: P190084

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	0.9	0.9	0.9	0.4	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°	0.4	0.4	0.9	0.9	0.4	0.4	0.4	0.4
135°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
137.5°	0.4	0.4	0.4	0.4	0.4	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	0.9	0.4	0.4	0.4	0.4	0.4	0.4
155°	1.7	1.3	1.3	0.9	0.9	0.4	0.4	0.4
157.5°	2.6	2.1	2.1	1.7	1.7	1.3	1.3	1.3
160°	3.9	3.4	3.0	3.0	2.6	2.6	2.1	2.1
162.5°	5.6	5.1	4.7	4.3	4.3	3.9	3.9	3.4
165°	8.2	7.3	6.9	6.4	6.4	6.0	5.6	5.6
167.5°	11.2	10.3	9.9	9.4	9.0	8.6	8.6	8.6
170°	14.6	13.7	13.3	12.9	12.4	12.4	12.0	12.0
172.5°	18.4	17.6	17.2	16.7	16.7	16.3	16.3	16.3
175°	23.2	22.7	22.7	21.9	21.9	21.9	21.4	21.4
177.5°	28.7	28.7	28.3	28.3	28.3	28.3	27.9	27.9
180°	34.7	34.7	34.7	34.7	34.7	34.7	34.7	34.7

(END OF REPORT)