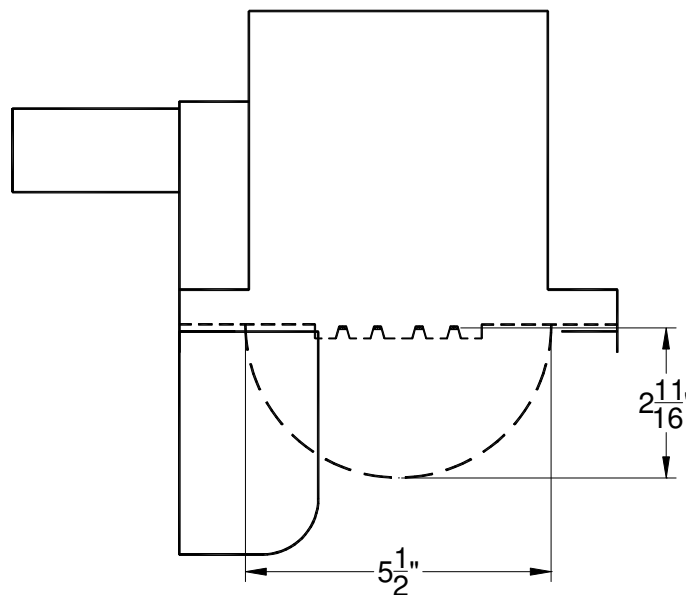




INDEPENDENT TEST LABORATORY REPORT No. 29010

SOLAR OUTDOOR LIGHTING - LED OUTDOOR AREA LUMINAIRE, CAT# GREENWAY
WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1640 Lms.
ONE SOL aiSUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

IESNA CUTOFF CLASSIFICATION: CUTOFF



PREPARED FOR:

SOLAR OUTDOOR LIGHTING
PALM CITY, FL

DATE: MAY 12, 2011

CERTIFIED BY:

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
BALLAST FACTORS HAVE NOT BEEN APPLIED

TESTED IN 30 PLANES LEFT SIDE, 30 PLANES RIGHT SIDE, LEFT AND RIGHT AVERAGED

VERTICAL TEST INCREMENTS ARE 2.5 DEGREES.

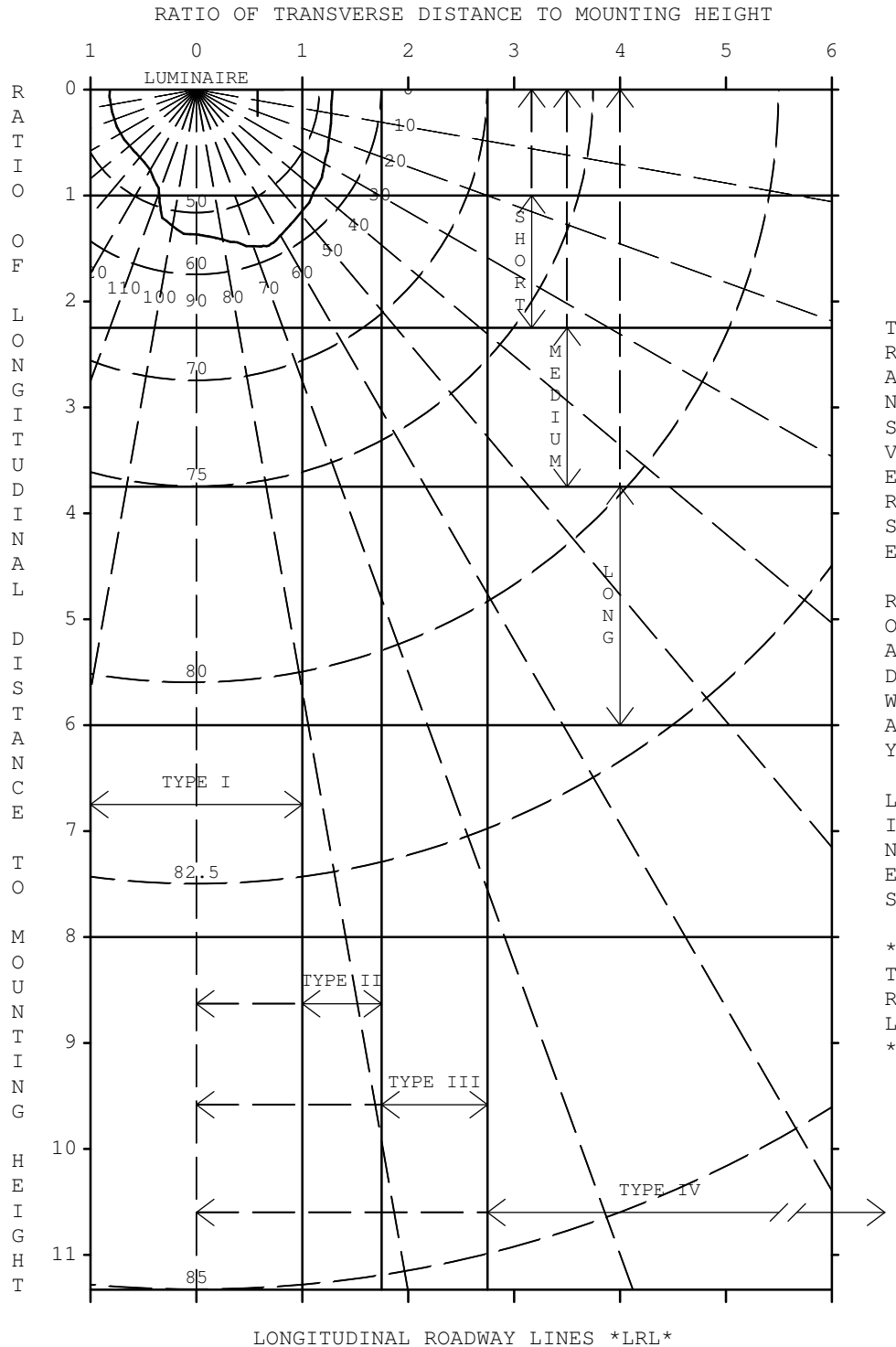
TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
LUMINOUS OPENING OF LUMINAIRE.

LIGHTING SCIENCES, INC.

7826 E. EVANS RD.
SCOTTSDALE, AZ, USA 85260

CERTIFIED TEST REPORT NO.29010

SOLAR OUTDOOR LIGHTING - LED OUTDOOR AREA LUMINAIRE, CAT# GREENWAY
WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
ONE SOL AISUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS



IES ROADWAY CLASSIFICATION: TYPE II, VERY SHORT

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FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
ONE SOL aiSUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

*** THIS IS AN ABSOLUTE TEST REPORT ***

UTILIZATION TABLE

CO-EFFICIENT OF UTILIZATION

RATIO	HOUSE SIDE	STREET SIDE	TOTAL
0.5	0.284	0.303	0.587
1.0	0.394	0.505	0.899
1.5	0.404	0.575	0.979
2.0	0.404	0.589	0.994
2.5	0.405	0.592	0.997
3.0	0.405	0.593	0.997
3.5	0.405	0.593	0.998
4.0	0.405	0.593	0.998
5.0	0.405	0.594	0.998
TOTAL:	0.405	0.594	0.999

PERCENTAGE OUTPUTS

DOWNWARD:	STREET SIDE =	59.4%
	HOUSE SIDE =	40.5%
	TOTAL =	99.9%
UPWARD:	STREET SIDE =	0.1%
	HOUSE SIDE =	0.0%
	TOTAL =	0.1%

EFFICACY (LUMENS PER WATT) 84.1

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

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WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
ONE SOL aiSUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

ZONAL LUMEN SUMMARY PER IES PUBLICATION TM-15-07

*** THIS IS AN ABSOLUTE TEST REPORT ***

FORWARD LIGHT:

LUMENS	949.1
% LUMENS	59.4 %
FORWARD LOW ZONE (0 TO 30 DEGREES)	17.8 %
FORWARD MID ZONE (30 TO 60 DEGREES)	36.6 %
FORWARD HIGH ZONE (60 TO 80 DEGREES)	5.0 %
FORWARD VERY HIGH ZONE (80 TO 90 DEGREES)	0.0 %

BACK LIGHT:

LUMENS	646.5
% LUMENS	40.5 %
BACK LIGHT LOW ZONE (0 TO 30 DEGREES)	17.3 %
BACK LIGHT MID ZONE (30 TO 60 DEGREES)	20.6 %
BACK LIGHT HIGH ZONE (60 TO 80 DEGREES)	2.6 %
BACK LIGHT VERY HIGH ZONE (80 TO 90 DEGREES)	0.0 %

UPLIGHT:

LUMENS	2.2
% LUMENS	0.1 %
UPLIGHT LOW ZONE (90 TO 100 DEGREES)	0.1 %
UPLIGHT HIGH ZONE (100 TO 180 DEGREES)	0.0 %

TRAPPED LIGHT: NOT APPLICABLE TO AN ABSOLUTE TEST

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WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
ONE SOL aiSUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

IES "BUG" RATING (BACK LIGHT, UPLIGHT, GLARE)
PER ADDENDUM TO IES TM-15-07

	LUMENS	SECONDARY SOLID ANGLE RATING
BACK LIGHT		
BH (60-80 DEGREES)	41.3	B0
BM (30-60 DEGREES)	329.1	B1
BL (0-30 DEGREES)	276.1	B1
UPLIGHT		
UH (100-180 DEGREES)	0.0	U1
UL (90-100 DEGREES)	2.2	U1
FVH (80-90 DEGREES)	0.7	U0
BVH (80-90 DEGREES)	0.0	U0
GLARE LIGHT		
FVH (80-90 DEGREES)	0.7	G0
BVH (80-90 DEGREES)	0.0	G0
FH (60-80 DEGREES)	79.4	G0
BH (60-80 DEGREES)	41.3	G0

IES BUG RATING: B1 U1 G0

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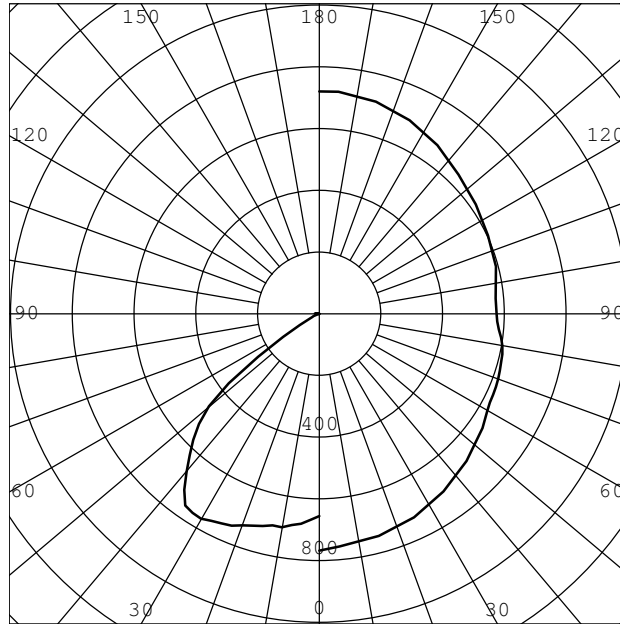
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SOLAR OUTDOOR LIGHTING - LED OUTDOOR AREA LUMINAIRE, CAT# GREENWAY
WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
ONE SOL aiSUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

INTENSITY (CANDLEPOWER)
IN MAX. PLANE

INTENSITY (CANDLEPOWER)
IN MAX. CONE

ANGLE	CANDLEPOWER
0.0	654
5.0	683
10.0	702
15.0	712
20.0	729
25.0	749
30.0	767
35.0	759
40.0	671
45.0	578
50.0	468
52.5	370
55.0	243
57.5	140
60.0	73
62.5	40
65.0	26
67.5	21
70.0	12
72.5	7
75.0	4
77.5	3
80.0	1
82.5	0
85.0	0
87.5	1
90.0	2
95.0	16
105.0	0
115.0	0
125.0	0
135.0	0
145.0	0
155.0	0
165.0	0
175.0	0
180.0	0



ANGLE	CANDLEPOWER
0.0	767
5.0	756
15.0	745
25.0	727
35.0	702
45.0	675
55.0	645
60.0	629
62.5	624
65.0	622
67.5	620
70.0	616
72.5	614
75.0	611
77.5	607
80.0	602
82.5	594
85.0	584
87.5	578
90.0	574
95.0	574
105.0	593
115.0	603
125.0	619
135.0	638
145.0	667
155.0	693
165.0	712
175.0	722
180.0	720

MAXIMUM INTENSITY (CANDLEPOWER) : 767 CD
 PLANE OF MAXIMUM: 0.0
 VERTICAL ANGLE OF MAXIMUM: 30.0

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WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
ONE SOL AISUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

INTENSITY (CANDLEPOWER) SUMMARY

VERT. ANGLE	HORIZONTAL ANGLES - STREET SIDE										
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0

0.0	654	654	654	654	654	654	654	654	654	654	654
5.0	683	682	682	680	679	676	670	663	656	651	
10.0	702	701	701	696	687	676	671	670	659	644	
15.0	712	707	702	695	691	686	674	657	653	631	
20.0	729	722	713	699	691	681	664	657	642	619	
25.0	749	739	734	721	705	674	655	643	631	605	
30.0**	767	756	745	727	702	675	645	622	611	584	
35.0	759	748	744	734	706	667	632	596	583	559	
40.0	671	663	671	685	687	654	612	571	547	527	
45.0	578	572	581	591	602	607	581	535	502	485	
50.0	468	461	477	495	504	514	530	491	454	433	
55.0	243	239	275	339	396	416	429	436	400	375	
60.0	73	72	85	121	199	288	323	348	329	303	
65.0	26	25	26	34	54	105	201	235	243	225	
70.0	12	12	13	15	15	20	55	131	151	142	
75.0	4	4	4	3	3	4	4	25	60	65	
80.0	1	1	1	2	1	1	1	2	2	3	
85.0	0	0	0	1	0	0	0	0	0	0	
90.0	2	2	6	15	5	2	1	0	0	0	

VERT. ANGLE	HORIZONTAL ANGLES - HOUSE SIDE										
	90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
0.0	654	654	654	654	654	654	654	654	654	654	654
5.0	649	649	651	651	651	652	652	655	657	656	658
10.0	641	641	640	638	651	663	667	672	677	679	681
15.0	624	626	628	641	655	668	673	676	679	681	682
20.0	612	613	619	638	645	656	662	679	686	693	694
25.0	597	600	613	619	636	648	666	683	698	707	711
30.0**	574	574	593	603	619	638	667	693	712	722	720
35.0	546	547	561	577	566	564	562	564	586	595	588
40.0	515	515	527	439	395	369	369	369	354	353	342
45.0	473	464	443	345	252	159	128	142	150	149	144
50.0	425	419	397	307	169	24	1	1	2	3	1
55.0	369	370	348	265	136	8	0	0	0	0	0
60.0	295	293	283	212	90	3	0	0	0	0	0
65.0	222	216	209	137	46	0	0	0	0	0	0
70.0	140	136	124	66	9	0	0	0	0	0	0
75.0	64	61	44	9	0	0	0	0	0	0	0
80.0	2	2	1	0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0	0

** DENOTES VERTICAL ANGLE OF MAXIMUM CONE

**** DENOTES LATERAL ANGLE OF MAXIMUM PLANE

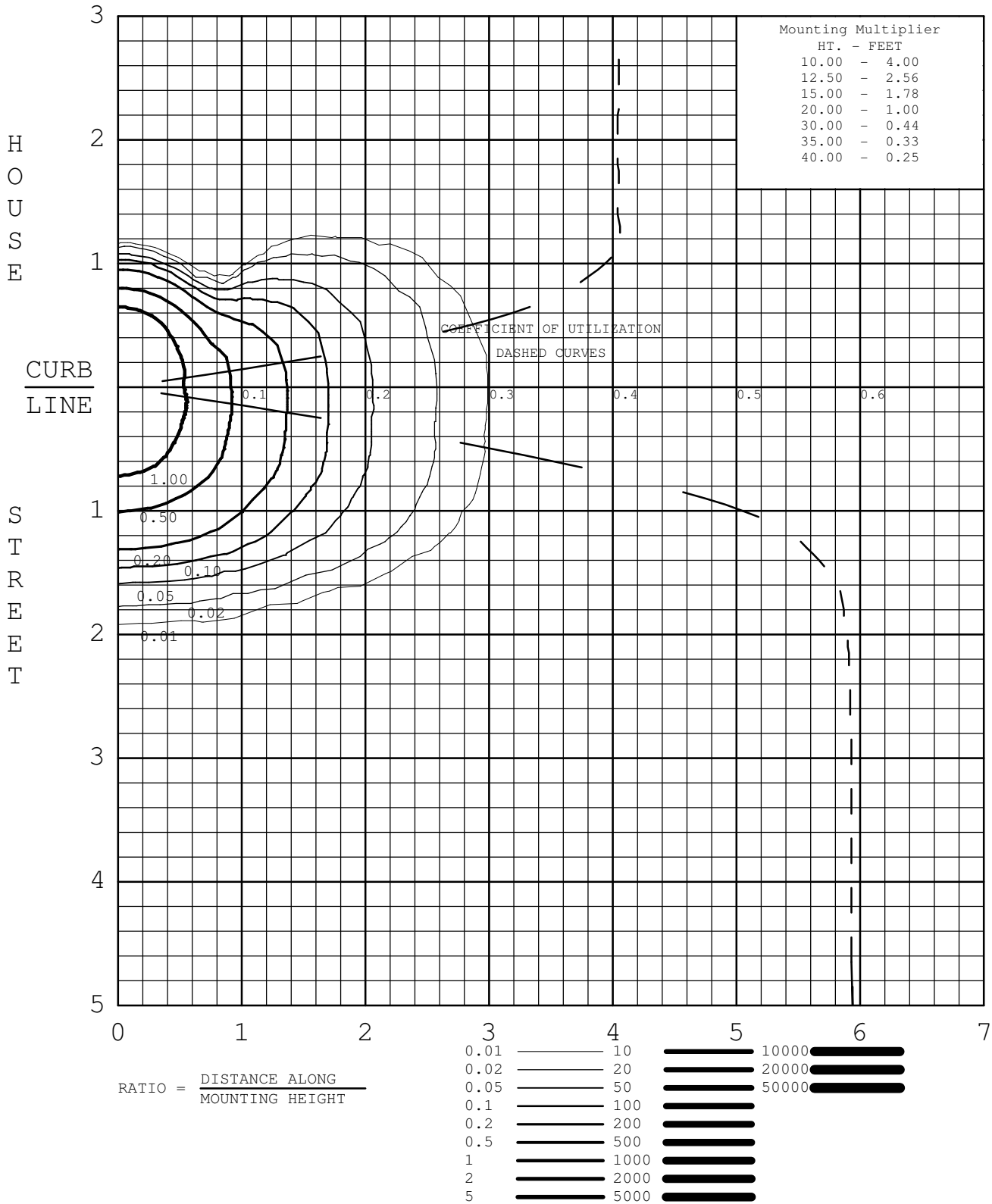
INTENSITY WAS MEASURED IN 2.5 DEGREE STEPS - TABULATIONS ARE AVAILABLE

ISOFOOTCANDLE

CERTIFIED TEST REPORT NO.29010

SOLAR OUTDOOR LIGHTING - LED OUTDOOR AREA LUMINAIRE, CAT# GREENWAY
 WITH ALUMINUM INTERIOR, CLEAR PLASTIC BOWL LENS AND GLARE SHIELD
 FOUR LED ARRAYS. LUMINAIRE OUTPUT: 1598 Lms.
 ONE SOL aiSUN SC350-D200 CONTROLLER OPERATING AT 13.0 VDC AND 19.0 WATTS

MOUNTING HEIGHT FOR ISOFC 20.0 FEET



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** ILLUMINANCE(FOOTCANDLE) TABLE FOR SINGLE LUMINAIRE AT 20.0 FT. **

LATERAL RATIOS	ILLUMINANCE(FOOTCANDLE) TABLE FOR SINGLE LUMINAIRE AT 20.0 FT.														
-3.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-1.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.002	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000
-1.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	0.12	.019	.004	.028	.019	.010	.004	.002	.001	.000	.000	.000	.000	.000	.000
-0.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	1.2	0.75	0.22	0.11	.046	.019	.008	.003	.001	.000	.000	.000	.000	.000	.000
HOUSE		CURB LINE													
STREET	1.6	1.0	0.41	0.15	.055	.022	.009	.004	.002	.000	.000	.000	.000	.000	.000
0.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	1.3	0.90	0.38	0.14	.053	.021	.009	.004	.002	.001	.000	.000	.000	.000	.000
1.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	0.51	0.39	0.20	.087	.036	.016	.007	.003	.001	.000	.000	.000	.000	.000	.000
1.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.081	.068	.044	.022	.012	.006	.003	.001	.001	.000	.000	.000	.000	.000	.000
2.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.008	.007	.006	.003	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.002	.002	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
	LONGITUDINAL MOUNTING HEIGHT RATIOS														

CORRECTION FACTORS FOR OTHER MOUNTING HEIGHTS: SEE ISOFOOTCANDLE PAGE