

itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

NVLAP
NVLAP LAB CODE: 200925-0

INDEPENDENT TESTING LABORATORIES, INC.
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

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REPORT NUMBER: ITL87485-GONIOPHOTOMETRY

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ISSUE DATE: 05/17/16

PREPARED FOR: BEGHELLI

CATALOG NUMBER: PACO COMBO (PCH)

LUMINAIRE: ONE 11.625" X 7.1875" MOLDED WHITE PLASTIC SINGLE FACE EXIT

SIGN WITH 2 MOLDED WHITE PLASTIC SWIVEL HEAD ASSEMBLIES, EACH HEAD ASSEMBLY CONSISTS OF: ONE CIRCUIT BOARD WITH 12 LEDS, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR PRISMATIC PLASTIC LENS. BOTH SWIVEL HEAD ASSEMBLIES AND ALL 10 INTERIOR LEDS WERE ILLUMINATED FOR THIS TEST. ONLY ONE LIGHT HEAD WAS MEASURED FOR LIGHT OUTPUT.

LAMPS: TWELVE WHITE LIGHT EMITTING DIODES (LEDS) EACH WITH CLEAR CYLINDRICAL INTEGRAL LENS WITH HEMISPHERICAL END, VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 3.60 VOLTS, 2.13 WATTS, 0.592 AMPS

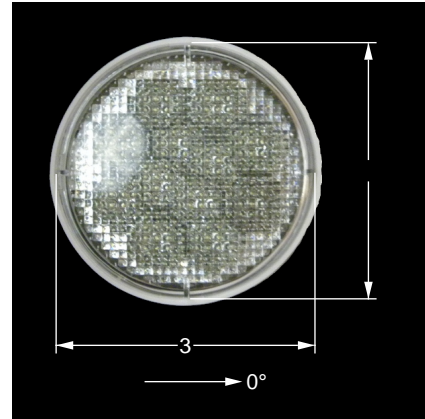
MOUNTING: SURFACE

LED DRIVER: BEGHELLI

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT CLIENT REQUESTED INPUT VOLTAGE (3.6VDC) TO THE DRIVER. DRIVER INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET



CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	127	127	127	127	127	
5	125	124	124	124	124	11.5
15	75	80	92	84	78	22.8
25	35	35	36	36	37	16.6
35	12	13	13	13	13	8.2
45	3	3	3	3	3	2.4
55	1	1	1	1	1	0.9
65	1	1	1	1	1	0.5
75	0	0	0	0	0	0.2
85	0	0	0	0	0	0.1
90	0	0	0	0	0	
95	0	0	0	0	0	0.0
105	0	0	0	0	0	0.0
115	0	0	0	0	0	0.0
125	0	0	0	0	0	0.0
135	0	0	0	0	0	0.0
145	0	0	0	0	0	0.0
155	0	0	0	0	0	0.0
165	0	0	0	0	0	0.0
175	0	0	0	0	0	0.0
180	0	0	0	0	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	50.9	80.4
0- 40	59.0	93.3
0- 60	62.4	98.5
0- 90	63.3	99.9
90-120	0.0	0.1
90-130	0.0	0.1
90-150	0.0	0.1
90-180	0.0	0.1
0-180	63.3	100.0

EFFICACY = 29.7 lm/W

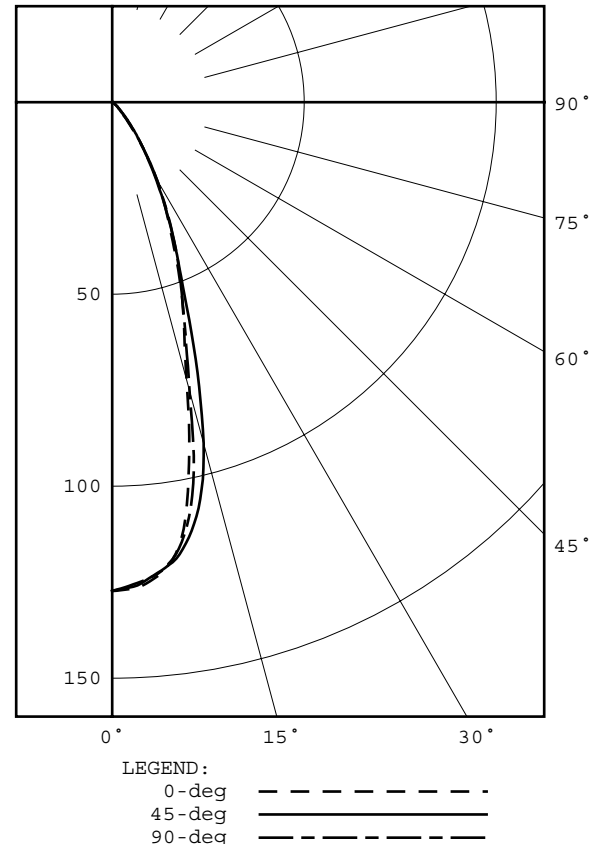
CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

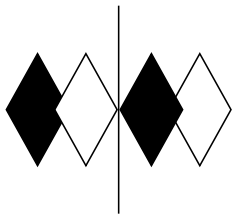
SPACING CRITERIA : 0.56 0.58

BEAM ANGLE (50%) : 34.5 X 34.9 DEGREES

FIELD ANGLE (10%) : 69.5 X 70.1 DEGREES



Checked B. HYRE
Approved R. BEATTIE
Lighting Engineer



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	127	127	127	127	127
5.0	125	124	124	124	124
10.0	110	112	115	114	112
15.0	75	80	92	84	78
20.0	53	53	57	54	53
25.0	35	35	36	36	37
30.0	23	22	22	23	23
35.0	12	13	13	13	13
40.0	6	6	7	6	6
45.0	3	3	3	3	3
50.0	2	2	2	2	2
55.0	1	1	1	1	1
60.0	1	1	1	1	1
65.0	1	1	1	1	1
70.0	0	0	0	0	0
75.0	0	0	0	0	0
80.0	0	0	0	0	0
85.0	0	0	0	0	0
90.0	0	0	0	0	0
95.0	0	0	0	0	0
100.0	0	0	0	0	0
105.0	0	0	0	0	0
110.0	0	0	0	0	0
115.0	0	0	0	0	0
120.0	0	0	0	0	0
125.0	0	0	0	0	0
130.0	0	0	0	0	0
135.0	0	0	0	0	0
140.0	0	0	0	0	0
145.0	0	0	0	0	0
150.0	0	0	0	0	0
155.0	0	0	0	0	0
160.0	0	0	0	0	0
165.0	0	0	0	0	0
170.0	0	0	0	0	0
175.0	0	0	0	0	0
180.0	0	0	0	0	0



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	3.0
5- 10	8.5
10- 15	11.7
15- 20	11.1
20- 25	9.3
25- 30	7.3
30- 35	5.1
35- 40	3.0
40- 45	1.6
45- 50	0.8
50- 55	0.5
55- 60	0.4
60- 65	0.3
65- 70	0.2
70- 75	0.1
75- 80	0.1
80- 85	0.1
85- 90	0.1
90- 95	0.0
95-100	0.0
100-105	0.0
105-110	0.0
110-115	0.0
115-120	0.0
120-125	0.0
125-130	0.0
130-135	0.0
135-140	0.0
140-145	0.0
145-150	0.0
150-155	0.0
155-160	0.0
160-165	0.0
165-170	0.0
170-175	0.0
175-180	0.0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	11.5
0- 20	34.3
0- 30	50.9
0- 40	59.0
0- 50	61.4
0- 60	62.4
0- 70	62.9
0- 80	63.1
0- 90	63.3
0-100	63.3
0-110	63.3
0-120	63.3
0-130	63.3
0-140	63.3
0-150	63.3
0-160	63.3
0-170	63.3
0-180	63.3



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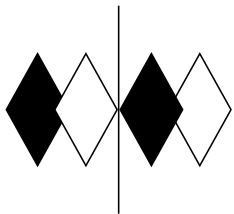
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	101	97	107	103	99	96	99	97	94	96	94	92	94	92	90	89
3	104	98	93	90	102	97	93	89	94	91	88	92	89	86	90	87	85	84
4	99	93	88	84	98	91	87	83	89	85	82	87	84	81	86	83	80	79
5	95	88	82	78	94	87	82	78	85	81	77	83	80	77	82	79	76	75
6	91	83	78	74	90	82	77	74	81	76	73	80	76	73	78	75	72	71
7	87	79	74	70	86	78	73	70	77	73	69	76	72	69	75	71	69	67
8	84	75	70	66	83	75	70	66	74	69	66	73	69	66	72	68	65	64
9	81	72	67	63	80	71	66	63	71	66	63	70	66	63	69	65	62	61
10	77	69	64	60	77	68	63	60	68	63	60	67	63	60	66	62	60	58

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.



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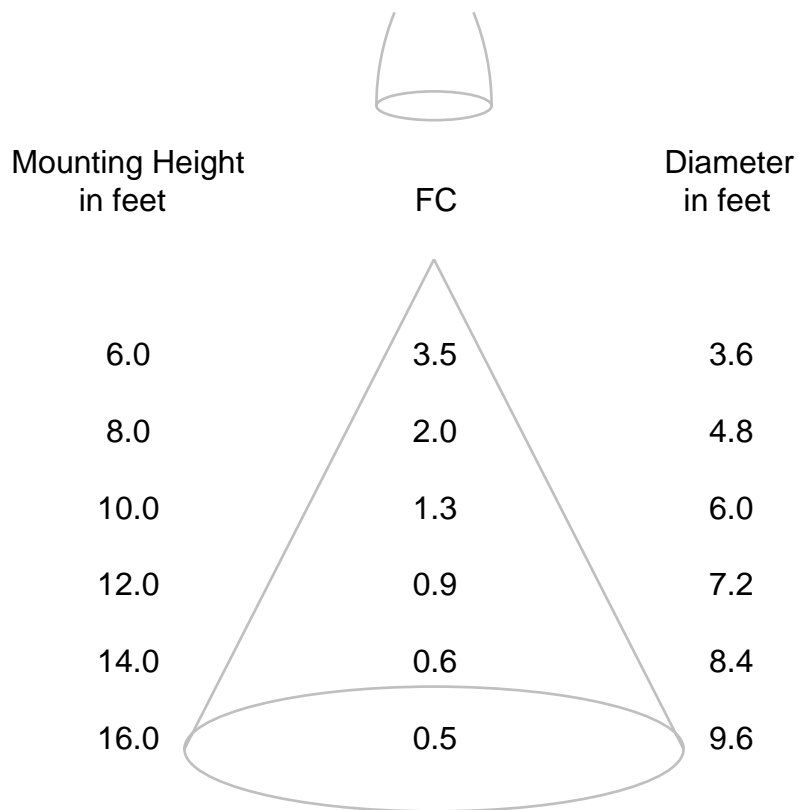
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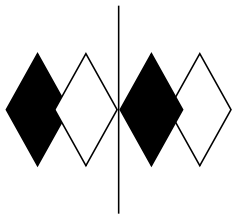
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CONE OF LIGHT DIAGRAM

(diameter shown is where fc value is half the fc at nadir)



Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.



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