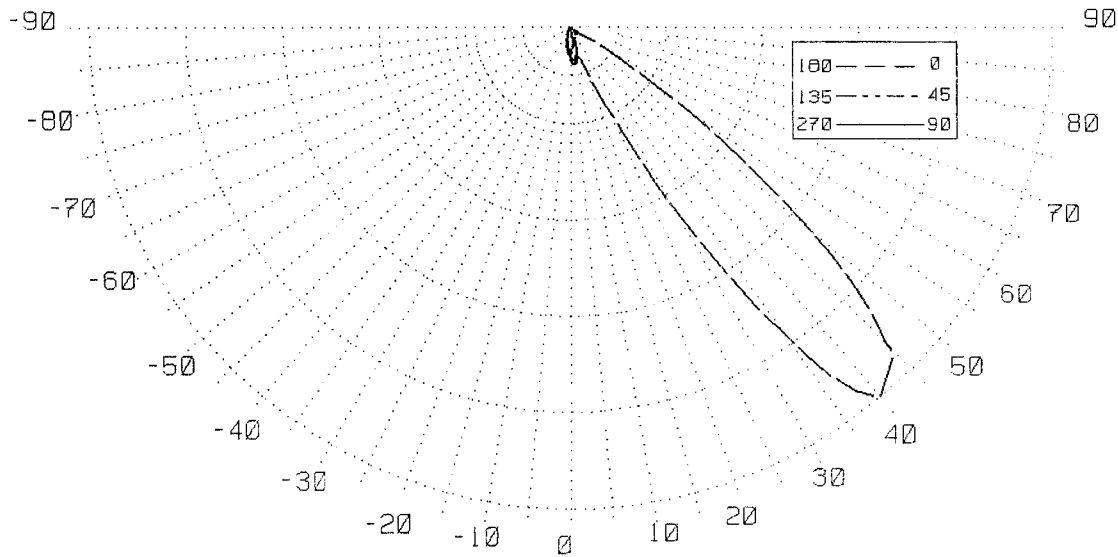


BALLABS CERTIFIED TEST REPORT NO.: 20453.0 DATE 05/24/18  
PREPARED FOR: H.E. WILLIAMS, INC - CARTHAGE, MO  
DESCRIPTION: GEN7 V13 LED 4"SHORT HEATSINK 4"RND ADJ DOWNLIGHT @ 45 TILT  
ACRYLIC NARROW TIR OPTIC & 4"OPEN ASYM SEMI-SPEC TRIM  
ADVANCE #XI025C070V054DSM1 @ 610mA  
CATALOG NBR: 4AR-L20/835-DIM-UNV-O-N-OF-CS (45 DEGREE TILT)  
LAMP TYPE : BXRE-35E2000

0 DEGREE PLANE CONTAINS MAXIMUM CANDLEPOWER



*[Handwritten signature]*



NVLAP LAB CODE 200921-0

## LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT	ZONE	LUMENS	%LAMP	%FIXT
0- 30	349.	NA.	17.8	90-120	0.	NA.	.0
0- 40	927.	NA.	47.1	90-130	0.	NA.	.0
0- 60	1966.	NA.	100.0	90-150	0.	NA.	.0
0- 90	1966.	NA.	100.0	90-180	0.	NA.	.0
TOTAL LUMINAIRE =				0-180	1966.	NA.	100.0

THIS BALLABS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THIS CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.

BALLABS CERTIFIED TEST REPORT NO.: 20453.0 DATE 05/24/18  
 PREPARED FOR: H.E. WILLIAMS, INC - CARTHAGE, MO  
 DESCRIPTION: GEN7 V13 LED 4"SHORT HEATSINK 4"RND ADJ DOWNLIGHT @ 45 TILT  
 ACRYLIC NARROW TIR OPTIC & 4"OPEN ASYM SEMI-SPEC TRIM  
 ADVANCE #XI025C070V054DSM1 @ 610mA  
 CATALOG NBR: 4AR-L20/835-DIM-UNV-O-N-OF-CS (45 DEGREE TILT)  
 LAMP TYPE : BXRE-35E2000

CANDLEPOWER DISTRIBUTION  
 0 DEGREE PLANE CONTAINS MAXIMUM CANDLEPOWER

VERT	HORIZONTAL										LUMENS	
	.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	FRONT	BACK	TOTAL
0	784.	784.	784.	784.	784.	784.	784.	784.	784.			
5	958.	917.	878.	825.	713.	596.	511.	467.	461.	41.6	25.4	66.9
10	909.	869.	830.	681.	441.	312.	257.	249.	246.			
15	769.	757.	668.	366.	186.	152.	144.	140.	140.	79.6	20.7	100.3
20	1044.	862.	455.	161.	92.	94.	95.	91.	88.			
25	2284.	1381.	314.	92.	59.	67.	62.	30.	25.	170.5	11.2	181.7
30	5366.	2347.	264.	59.	48.	56.	13.	11.	12.			
35	9699.	3625.	253.	33.	35.	19.	0.	2.	4.	574.5	3.3	577.8
40	12551.	4771.	216.	20.	28.	0.	0.	0.	0.			
45	11674.	4401.	145.	11.	0.	0.	0.	0.	0.	854.2	.0	854.2
50	8299.	2681.	48.	2.	0.	0.	0.	0.	0.			
55	3857.	825.	0.	0.	0.	0.	0.	0.	0.	185.0	.0	185.0
60	964.	146.	0.	0.	0.	0.	0.	0.	0.			
65	51.	0.	0.	0.	0.	0.	0.	0.	0.	.0	.0	.0
70	0.	0.	0.	0.	0.	0.	0.	0.	0.			
75	0.	0.	0.	0.	0.	0.	0.	0.	0.	.0	.0	.0
80	0.	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.			

USE .333 FT. AS LENGTH AND .333 FT. AS WIDTH

BALLABS CERTIFIED TEST REPORT NO.: 20453.0 DATE 05/24/18  
 PREPARED FOR: H.E. WILLIAMS, INC - CARTHAGE, MO  
 DESCRIPTION: GEN7 V13 LED 4"SHORT HEATSINK 4"RND ADJ DOWNLIGHT @ 45 TILT  
 ACRYLIC NARROW TIR OPTIC & 4"OPEN ASYM SEMI-SPEC TRIM  
 ADVANCE #XI025C070V054DSM1 @ 610mA  
 CATALOG NBR: 4AR-L20/835-DIM-UNV-O-N-OF-CS (45 DEGREE TILT)  
 LAMP TYPE : BXRE-35E2000

ZONAL CAVITY COEFFICIENTS OF UTILIZATION

EFFECTIVE FLOOR CAVITY REFLECTANCE=.20

CEILING		.80				.70				.50				.30				.10				.00
WALL	.70	.50	.30	.10	.70	.50	.30	.10	.50	.30	.10	.50	.30	.10	.50	.30	.10	.00				
RCR																						
0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00				
1	1.12	1.08	1.05	1.02	1.09	1.06	1.03	1.01	1.02	1.00	.97	.98	.96	.95	.95	.93	.92	.90				
2	1.05	.98	.93	.89	1.02	.97	.92	.88	.93	.89	.86	.90	.87	.84	.87	.85	.82	.81				
3	.97	.89	.82	.77	.95	.87	.81	.76	.84	.79	.75	.82	.78	.74	.80	.76	.73	.71				
4	.90	.80	.72	.67	.88	.79	.72	.67	.76	.70	.66	.74	.69	.65	.72	.68	.64	.62				
5	.82	.71	.63	.58	.80	.70	.63	.57	.68	.62	.57	.66	.61	.56	.65	.60	.56	.54				
6	.75	.64	.55	.50	.74	.63	.55	.50	.61	.54	.49	.59	.53	.49	.58	.52	.48	.46				
7	.68	.56	.48	.42	.67	.55	.47	.42	.53	.46	.41	.52	.46	.41	.51	.45	.41	.39				
8	.62	.48	.40	.34	.60	.48	.40	.34	.46	.39	.34	.45	.39	.34	.44	.38	.34	.32				
9	.55	.42	.34	.28	.54	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.27	.26				
10	.51	.37	.29	.23	.49	.36	.29	.23	.35	.28	.23	.34	.28	.23	.33	.27	.23	.21				

TESTED IN ACCORDANCE WITH CURRENT IES PROCEDURES

BALLABS CERTIFIED TEST REPORT NO.: 20453.0 DATE 05/24/18  
 PREPARED FOR: H.E. WILLIAMS, INC - CARTHAGE, MO  
 DESCRIPTION: GEN7 V13 LED 4"SHORT HEATSINK 4"RND ADJ DOWNLIGHT @ 45 TILT  
 ACRYLIC NARROW TIR OPTIC & 4"OPEN ASYM SEMI-SPEC TRIM  
 ADVANCE #XI025C070V054DSM1 @ 610mA  
 CATALOG NBR: 4AR-L20/835-DIM-UNV-O-N-OF-CS (45 DEGREE TILT)  
 LAMP TYPE : BXRE-35E2000

\*\*\*\*\*

ELECTRICAL CHARACTERISTICS 119.96V .2036A 24.2000W

LUMINOUS EFFICACY (LUMENS / WATTS) = 81.2

TESTED IN ACCORDANCE WITH CURRENT IES STANDARDS  
 UTILIZING ABSOLUTE PHOTOMETRY PER LM-79-08

