

**ARCHITECTURAL SENSOR**

**ALERA EXPRESS**

### FEATURES

- 2 1/2" deep housing for a sleek modern appearance
- Indirect Luminaire
- Unique lamp crossing technique on one and three lamp models maintains 48" modularity
- Heavy 20-gauge steel construction provides excellent housing rigidity
- Controls compatible
- Available with optional installed open or closed loop daylight sensors (DSPL, DSL) when daylight dimming systems are desired
- Solid housing for 100% uplight
- Unique die cast aluminum, tongue and groove couplers provide zero tolerance alignment resulting in consistently straight rows
- Patented die cast aluminum end caps for a soft finished appearance (Patent# 6,796,676B2)
- Flat end caps standard
- Modular mounting points for convenient hanging locations

### SHAPE AND DIMENSIONS

### PROJECT INFORMATION

Project Name	Type
Catalog No.	Date

### CONSTRUCTION

- Housing provides indirect distribution of light
- Up to four T8 lamps and up to three T5 or T5HO lamps
- The exact shape of the housing is maintained by the use of an inner die cast plate at each fixture end.
- The housing is designed to wrap around the end plates and secures on top with concealed screws to ensure housing tolerances are consistent. These die cast aluminum end caps and aligners provide zero tolerance alignment between fixtures, resulting in consistently straight rows with no snaking.
- Reflectors: standard with a painted white steel reflector with specular inserts on the side.
- High efficiency reflector (HRF) high reflectance specular material allows for wide distribution with maximum efficiency.
- WR: An economical painted white reflector

### FINISH

The housing and all painted parts are treated with a multi-stage phosphate bonding process before being finished. Parts are then finished with a white RAL powder coat finish for maximum consistent coverage and longevity.

### MOUNTING

- Aircraft cable suspension mechanism.
  - Fixed cable has a total vertical adjustment of 1 1/4".
- End of cable barrel screws into a standard 1/4-20 bolt brought down from the ceiling. A feed canopy is provided for each feed location. All fixtures are suspended in modular increments and must be supported at each fixture-housing end.

### LABELS AND ELECTRICAL

- All luminaires are built to UL1598 Standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard.
- Quick-connect plugs standard.

### CONTROLS COMPATIBILITY

Controls compatible. When used with Occupancy Sensors, most lamp vendors recommend Program Start ballast (EP) to extend lamp life. For daylight sensors installed, see information below.

### ARCHITECTURAL SENSORS INSTALLED

Daylight sensors are used to measure available sunlight and reduce electric light for energy savings. Alera sensors are installed to be both accessible and visible below the housing.

DSPL: Philips Luxsense, Mark 7 0-10V dimming ballast. Closed loop sensor measures reflected light in a cone below the sensor. Pre-commissioned by Philips to 45fc standard; modest manual adjustability via sensor ring.

DSL: Lutron EcoSystem, digital dimming ballast. Open loop sensor must be pointed directly at the source of natural light. System requires proprietary commissioning by others.

Additional technical data: see TID sheets, Alera website and sensor manufacturer websites.

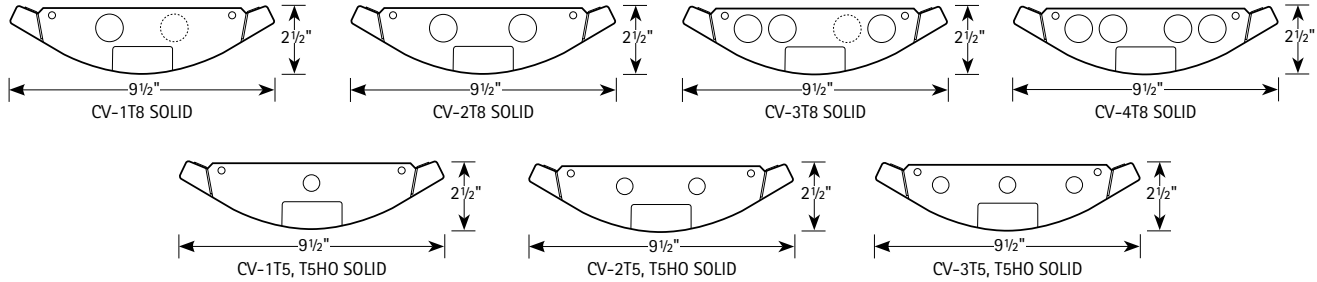
<b>Name:</b>	CV-1T8-S-E-WR
<b>Test #:</b>	12991
<b>Efficiency:</b>	97.2%
<b>LER:</b>	86

### ORDERING INFORMATION

### EXAMPLE: CV-8-2T8-S-CM48-EU-MW

MODEL	HOUSING TYPE	MOUNTING METHOD	ADJUSTABLE CABLE LENGTH	VOLTAGE	FINISH
CV CÛrv	S Solid	FCM18 Fixed Aircraft Cable Mount (Non-adjustable, Std.) 18"	48 48" 96 96"	U 120V-277V	MW Matte White (Std.)
		CM Adjustable Aircraft Cable Mount	Other lengths available on request.	120 120V 277 277V 347 347V	ZT ZET Metallic Silver See Color Selection Guide for other colors.
ROW LENGTH	LAMP TYPE AND PROFILE	BALLAST			
4 4' Single	1T5 One T5 Lamp	E Electronic, Instant Start (Std. for T8)			
8 8' Single	2T5 Two T5 Lamps	EP Electronic, Programmed Start (Std. for T5 & T5HO, optional for T8)			
12 12' Single	3T5 Three T5 Lamps	ELW Electronic T8, Low Wattage, Instant Start			
– Indicate row length over 12' in 4' increments	1T5HO One T5HO Lamp	EPLW Electronic T8, Low Wattage, Programmed Start			
	2T5HO Two T5HO Lamps	ED Electronic, Dimming (Must specify)			
	3T5HO Three T5HO Lamps	ESD Electronic, Step Dimming			
	2T8 Two T8 Lamps	EDUMK7 Universal Voltage, Electronic Dimming Philips Advance Mark 7 (0-10V)			
	3T8 Three T8 Lamps	EDULUTES Universal Voltage, Lutron EcoSystem Digital Dimming Ballast <sup>2,4</sup>			
	4T8 Four T8 Lamps	Unless specified, Alera will use fewest ballasts possible.			
OPTIONS					
		WR White Reflector			
		HRF High Efficiency Reflector			
		DC Dust Cover (N/A T5HO) <sup>5</sup>			
		SCE Sculpted End Cap (5 5/16") <sup>5</sup>			
		BN Bull Nose End Cap (5 1/16") <sup>5</sup>			
		LR Left/Right Switching (2-Lamp only)			
		IBOB Inboard/Outboard Switching (3-Lamp only)			
		F0841 With T8 4100L Lamp Installed			
		F05841 With T5(HO) 4100K Lamp Installed			
		F0835 With T8 3500K Lamp Installed			
		F5835 With T5(HO) 3500K Lamp Installed			
		EL One Emergency Battery Pack <sup>1,2</sup>			
		EMC One Emergency Circuit <sup>2,3</sup>			
		NLC Night Light Circuit <sup>2,3</sup>			
		GLR Fast Blow Fuse			
		GMF Slow Blow Fuse			
		TBAR T-Bar Mounting			
		DSPL Philips LuxSense Daylight Sensor (Must Specify Philips Advance 0-10V Dimming Ballast) <sup>2</sup>			
		DSL Lutron Daylight Sensor (Must Specify Lutron EcoSystem (EC5 Series)Dimming Ballast) <sup>2,4</sup>			

### CROSS SECTION



### PHOTOMETRIC DATA

#### LUMINAIRE DATA Test 12995

Luminaire	CV-2T8-S-E CÛrv Architectural Curve 9.5" x 48" 2-Lamp with Solid White Reflector & Spec Side Strips
Ballast	B232I120RH-A
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	59
Mounting	Pendant
Shielding Angle	0° = 90 90° = 00
Spacing Criterion	0° = 0.00 90° = 0.00
Luminous Opening in Feet	Length: 3.54 Width: 0.33 Height: 0.00

#### AVG. LUMINANCE (Candela/Sq. M.)

Data not available.

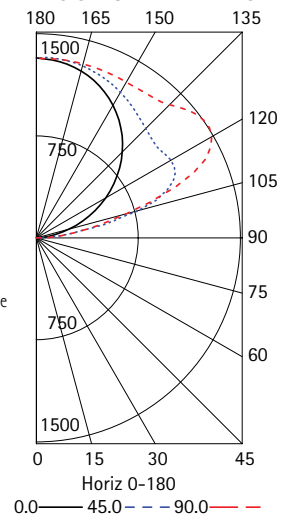
#### COEFFICIENTS OF UTILIZATION (%)

RCR	RW	80					70					50					0
		70	50	30	10	70	50	30	10	50	30	10	0				
1	83	79	76	73	71	68	65	62	46	45	43	0					
2	75	69	64	59	64	59	55	51	41	38	36	0					
3	69	60	54	49	58	52	47	43	36	32	30	0					
4	63	53	46	41	53	46	40	36	31	28	25	0					
5	57	47	40	35	49	40	35	30	28	24	21	0					
6	52	42	35	30	45	36	30	26	25	21	18	0					
7	48	37	30	26	41	32	26	22	22	19	16	0					
8	44	34	27	22	38	29	23	19	20	16	14	0					
9	41	30	24	19	35	26	21	17	18	15	12	0					
10	38	28	21	17	33	24	18	15	17	13	11	0					

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

#### INDOOR CANDELA PLOT



Test Date 12/17/01

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
90-120	1849	31.9	33.3
90-130	2844	49.0	51.2
90-150	4478	77.2	80.6
90-180	5554	95.8	100.0
0-180	5554	95.8	100.0

#### ENERGY DATA

Total Luminaire Efficiency	95.8%
Luminaire Efficacy Rating (LER)	83
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.89 based on 3000 hrs. and \$0.08 per KWH

### PHOTOMETRIC DATA

#### LUMINAIRE DATA Test 12996

Luminaire	CV-2T8-S-E-HRF CÛrv Architectural Curve 9.5" x 48" 2-Lamp with Solid Highly Specular Reflector
Ballast	B232I120RH-A
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	59
Mounting	Pendant
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 0.00 90° = 0.00
Luminous Opening in Feet	Length: 3.54 Width: 0.33 Height: 0.00

#### AVG. LUMINANCE (Candela/Sq. M.)

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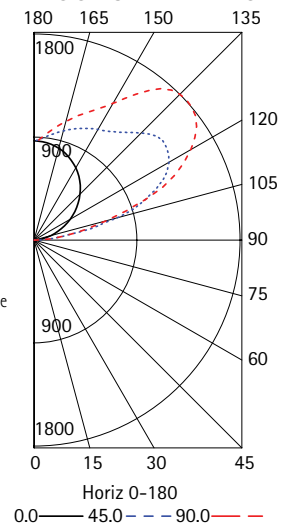
#### COEFFICIENTS OF UTILIZATION (%)

RCR	RW	80					70					50					0
		70	50	30	10	70	50	30	10	50	30	10	0				
1	82	79	75	72	70	67	65	62	46	44	43	0					
2	75	69	63	59	64	59	54	51	40	38	35	0					
3	68	60	54	49	58	52	46	42	35	32	30	0					
4	62	53	46	41	53	45	40	36	31	28	25	0					
5	57	47	40	35	48	40	34	30	28	24	21	0					
6	52	42	35	30	44	36	30	26	25	21	18	0					
7	48	37	30	25	41	32	26	22	22	18	16	0					
8	44	33	27	22	38	29	23	19	20	16	14	0					
9	41	30	24	19	35	26	21	17	18	14	12	0					
10	38	27	21	17	32	24	18	15	16	13	10	0					

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

#### INDOOR CANDELA PLOT



Test Date 12/17/01

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
90-120	1865	32.2	33.8
90-130	2972	51.2	53.8
90-150	4670	80.5	84.6
90-180	5518	95.1	100.0
0-180	5518	95.1	100.0

#### ENERGY DATA

Total Luminaire Efficiency	95.1%
Luminaire Efficacy Rating (LER)	82
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.93 based on 3000 hrs. and \$0.08 per KWH

### PHOTOMETRIC DATA

#### LUMINAIRE DATA Test 12999

Luminaire	CV-3T8-S-E-HRF
	Curv Architectural Curve
	9.5" x 48" 3-Lamp with Solid Highly Specular Reflector
Ballast	B3321120RH-A
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	88
Mounting	Pendant
Shielding Angle	0° = 90 90° = 00
Spacing Criterion	0° = 0.00 90° = 0.00
Luminous Opening in Feet	Length: 3.54 Width: 0.33 Height: 0.00

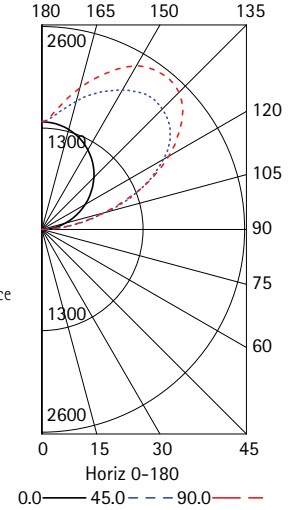
#### AVG. LUMINANCE (Candela/Sq. M.)

Data not available.

#### COEFFICIENTS OF UTILIZATION (%)

RCR	80				70				50				0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
1	82	78	75	72	70	67	64	62	46	44	43	0	
2	75	68	63	59	64	59	54	51	40	38	35	0	
3	68	60	54	49	58	51	46	42	35	32	30	0	
4	62	53	46	41	53	45	40	35	31	28	25	0	
5	57	47	40	35	48	40	34	30	28	24	21	0	
6	52	42	35	30	44	36	30	26	25	21	18	0	
7	48	37	30	25	41	32	26	22	22	18	16	0	
8	44	33	27	22	38	29	23	19	20	16	14	0	
9	41	30	24	19	35	26	21	17	18	14	12	0	
10	38	27	21	17	32	24	18	15	16	13	10	0	

#### INDOOR CANDELA PLOT



Test Date 1/11/02

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
90-120	2408	27.7	29.1
90-130	3996	45.9	48.3
90-150	6788	78.0	82.1
90-180	8268	95.0	100.0
0-180	8268	95.0	100.0

#### ENERGY DATA

Total Luminaire Efficiency	95.0%
Luminaire Efficacy Rating (LER)	83
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.89 based on 3000 hrs. and \$0.08 per KWH

### PHOTOMETRIC DATA

#### LUMINAIRE DATA Test 13004

Luminaire	CV-1T5HO-S-EP
	Curv Architectural Curve
	9.5" x 48" 1-Lamp with Solid White Refl & Spec Side Strips
Ballast	QT1X54/120PHO
Ballast Factor	1.00
Lamp	F54T5
Lumens per Lamp	4400
Watts	61
Mounting	Pendant
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 0.00 90° = 0.00
Luminous Opening in Feet	Length: 3.54 Width: 0.33 Height: 0.00

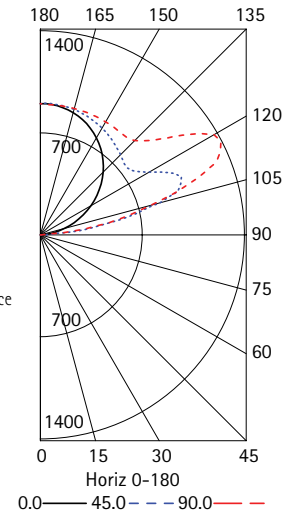
#### AVG. LUMINANCE (Candela/Sq. M.)

Data not available.

#### COEFFICIENTS OF UTILIZATION (%)

RCR	80				70				50				0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
1	86	82	78	75	73	70	67	65	48	46	45	0	
2	78	71	66	61	66	61	57	53	42	39	37	0	
3	71	63	56	51	60	54	48	44	37	34	31	0	
4	65	55	48	43	55	47	42	37	33	29	26	0	
5	59	49	41	36	50	42	36	31	29	25	22	0	
6	54	43	36	31	46	37	31	27	26	22	19	0	
7	50	39	32	27	42	33	27	23	23	19	16	0	
8	46	35	28	23	39	30	24	20	21	17	14	0	
9	43	31	25	20	36	27	21	18	19	15	12	0	
10	40	29	22	18	34	25	19	15	17	13	11	0	

#### INDOOR CANDELA PLOT



Test Date 12/20/01

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
90-120	1781	40.5	40.8
90-130	2515	57.2	57.7
90-150	3628	82.4	83.2
90-180	4361	99.1	100.0
0-180	4361	99.1	100.0

#### ENERGY DATA

Total Luminaire Efficiency	99.1%
Luminaire Efficacy Rating (LER)	71
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.38 based on 3000 hrs. and \$0.08 per KWH

### PHOTOMETRIC DATA

#### LUMINAIRE DATA Test 13011

Luminaire	CV-1T5HO-S-EP-HRF Cûrv Architectural Curve 9.5" x 48" 1-Lamp with Solid Highly Specular Reflector
Ballast	QT1X54/120PHO
Ballast Factor	1.00
Lamp	F54T5
Lumens per Lamp	4400
Watts	61
Mounting	Pendant
Shielding Angle	0° = 90 90° = 00
Spacing Criterion	0° = 0.00 90° = 0.00
Luminous Opening in Feet	Length: 3.54 Width: 0.33 Height: 0.00

#### AVG. LUMINANCE (Candela/Sq. M.)

Data not available.

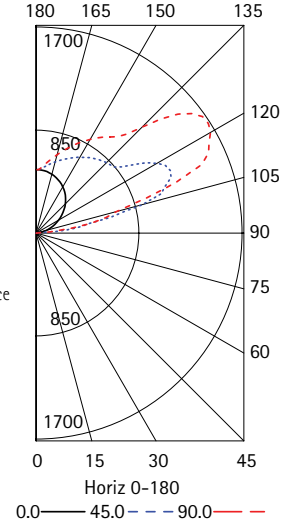
#### COEFFICIENTS OF UTILIZATION (%)

RCR	80				70				50				0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
1	86	82	79	76	74	71	68	65	48	47	45	0	0
2	79	72	66	62	67	62	57	53	42	40	37	0	0
3	72	63	56	51	61	54	49	44	37	34	31	0	0
4	65	56	48	43	56	48	42	37	33	29	26	0	0
5	60	49	42	36	51	42	36	32	29	25	22	0	0
6	55	44	36	31	46	38	31	27	26	22	19	0	0
7	50	39	32	27	43	34	28	23	23	19	16	0	0
8	46	35	28	23	39	30	24	20	21	17	14	0	0
9	43	32	25	20	37	27	22	18	19	15	13	0	0
10	40	29	22	18	34	25	19	15	17	14	11	0	0

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

#### INDOOR CANDELA PLOT



Test Date 12/18/01

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
90-120	1879	42.7	42.8
90-130	2769	62.9	63.0
90-150	3862	87.8	87.9
90-180	4393	99.8	100.0
0-180	4393	99.8	100.0

#### ENERGY DATA

Total Luminaire Efficiency	99.8%
Luminaire Efficacy Rating (LER)	72
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.33 based on 3000 hrs. and \$0.08 per KWH

### PHOTOMETRIC DATA

#### LUMINAIRE DATA Test 13007

Luminaire	CV-2T5HO-S-EP-HRF Cûrv Architectural Curve 9.5" x 48" 2-Lamp with Highly Specular Reflector
Ballast	QT2X54/120PHO
Ballast Factor	1.00
Lamp	F54T5
Lumens per Lamp	4400
Watts	118
Mounting	Pendant
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 0.00 90° = 0.00
Luminous Opening in Feet	Length: 3.54 Width: 0.33 Height: 0.00

#### AVG. LUMINANCE (Candela/Sq. M.)

Data not available.

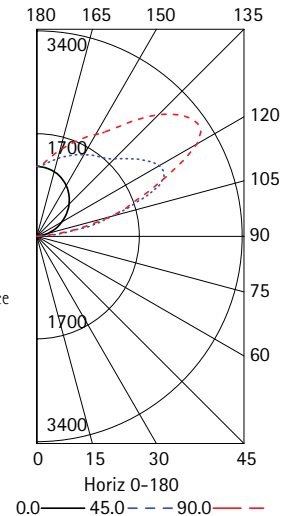
#### COEFFICIENTS OF UTILIZATION (%)

RCR	80				70				50				0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
1	85	81	78	74	73	69	67	64	47	46	44	0	0
2	77	71	65	61	66	61	56	53	42	39	37	0	0
3	70	62	56	50	60	53	48	44	37	33	31	0	0
4	64	55	48	42	55	47	41	37	32	29	26	0	0
5	59	48	41	36	50	42	36	31	29	25	22	0	0
6	54	43	36	31	46	37	31	27	25	22	19	0	0
7	49	38	31	26	42	33	27	23	23	19	16	0	0
8	46	35	28	23	39	30	24	20	21	17	14	0	0
9	42	31	24	20	36	27	21	17	19	15	12	0	0
10	39	28	22	17	33	24	19	15	17	13	11	0	0

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

#### INDOOR CANDELA PLOT



Test Date 12/27/01

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
90-120	3231	36.7	37.4
90-130	5057	57.5	58.5
90-150	7481	85.0	86.5
90-180	8644	98.2	100.0
0-180	8644	98.2	100.0

#### ENERGY DATA

Total Luminaire Efficiency	98.2%
Luminaire Efficacy Rating (LER)	73
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.29 based on 3000 hrs. and \$0.08 per KWH