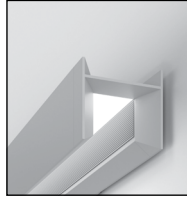
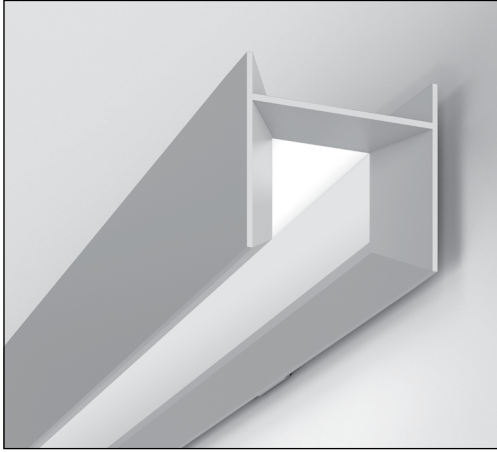
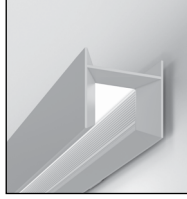


# Zen Square

## WALL DIRECT-INDIRECT



**MSO** - microgroove spotless lens



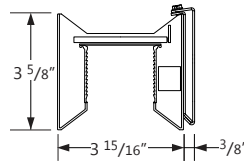
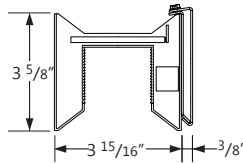
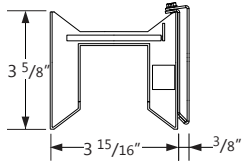
**MAL** - microgroove aluminum

**SO** - spotless lens

**SO** - spotless lens

**MSO** - microgroove spotless lens

**MAL** - microgroove aluminum



Project \_\_\_\_\_

Type \_\_\_\_\_

Notes \_\_\_\_\_



### NOMINAL LUMENS/FT

	SL 75/25	SL 50/50	SL 25/75	INPUT WATTS
	Lumens/ft	Lumens/ft	Lumens/ft	W/ft
<b>SO or MSO</b>	1350	1200	1050	12.0
	1100	950	850	9.6
	900	800	700	8.0
	700	600	550	6.0
<b>MAL*</b>	1350	1100	900	12.0
	1100	850	750	9.6
	900	700	600	8.0
	700	550	500	6.0

- 90 CRI only
- 80 CRI only
- For both 80 and 90 CRI

\*Lumen values are based upon a white finish, lumen values may vary for custom finishes

## Ordering Guide

ZESQWDI		LIGHT ENGINE		NOMINAL LUMENS/FT	CRI	COLOR TEMP.	SHIELDING	SHIELDING FINISH (OPTIONAL)
<b>PRODUCT ID</b>	Zen Square Wall Direct/Indirect	<b>SL 75/25</b>	surroundlite 75%up/25%down	# #	<b>80</b> 80 CRI	<b>27</b> 2700 K	<b>SO</b> spotless lens	<b>W</b> white - standard
		<b>SL 50/50</b>	surroundlite 50%up/50%down		<b>90</b> 90 CRI	<b>30</b> 3000 K	<b>MSO</b> microgroove spotless lens	<b>C</b> custom
		<b>SL 25/75</b>	surroundlite 25%up/75%down			<b>35</b> 3500 K	<b>MAL</b> microgroove aluminum *	
				See table above for lumen selection Applies to both UP & DOWN. Consult factory for other lumen packages	Applies to both UP & DOWN.	Applies to both UP & DOWN.	* Standard white	Shielding finish option is for MAL option only.

FIXTURE LENGTH	FINISH	VOLTAGE	DRIVER	CIRCUITS
<b>2</b> 2'	<b>AP</b> aluminum paint <b>W</b> white <b>BLK</b> black <b>C</b> custom	<b>UNV</b> universal	<b>MD</b> integral mini driver 0-10V dimming 2%	<b>1</b> 1 circuit <b>+E(#)</b> emergency section
<b>3</b> 3'				
<b>4</b> 4'				
<b>5</b> 5'				
<b>6</b> 6'				
<b>7</b> 7'				
<b>8</b> 8'				
<b>12</b> 12'				
<b>S#</b> system run				
All lengths in 1' increments		Consult factory for 347 V	Only integral 0-10V mini driver available	

BATTERY (OPTIONAL)	END CAP (OPTIONAL)	REMOTE CONTROLS (OPTIONAL)	CUSTOM
<b>B#</b> remote battery pack	<b>SE</b> slotted end cap	<b>DS#</b> daylight sensor <b>DOS#</b> daylight & occupancy sensor	<b>C</b> custom
Please consult factory	Comes with regular end cap. as standard; See page 2 for more details.	Applies to both UP & DOWN. Remote only.	Please specify



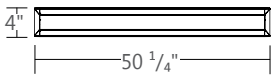
### ● LIGHT GUIDE

High precision light guide made of PMMA material, allows distribution of controlled light in all 3-dimensions to put light on both vertical and horizontal planes within the space. Patented lightguide design featuring molecular optics and precision-coupled optic components yield a high efficiency luminaire. In-plane mixing maximizes color uniformity while light emitting area is uniform and diffuse without 'head lighting' from the LED's.

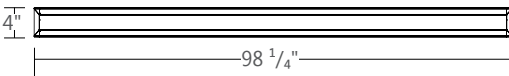
### ● LENGTHS

2' to 12' in 1 foot increments

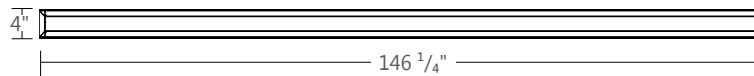
#### H 4ft



#### H 8ft



#### H 12ft



### ● SYSTEMS (S#)

Runs of H that are greater than 12ft in length are designated as systems (S#). This means that the run is comprised of a combination 4ft and/or 8ft sections to be assembled on site using our joining system.

### ● WEIGHT

- H 4 ft** 9 lbs / 4.1 kg
- H 8 ft** 18 lbs / 8.2 kg
- H 12 ft** 27 lbs / 12.3 kg

### ● FINISH

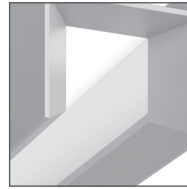
White, black, aluminum paint, powder coated and custom finishes are also available.

### ● APPROVALS

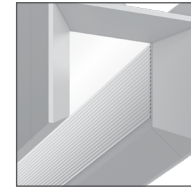
Certified to UL and CUL standards  
Suitable for damp locations.



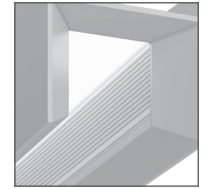
### ● OPTICS



SO spotless lens



MSO microgroove spotless lens

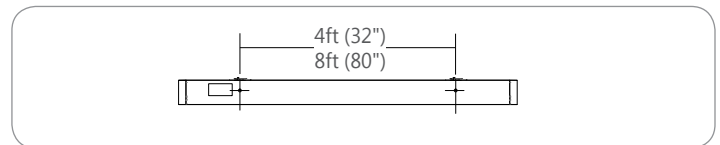
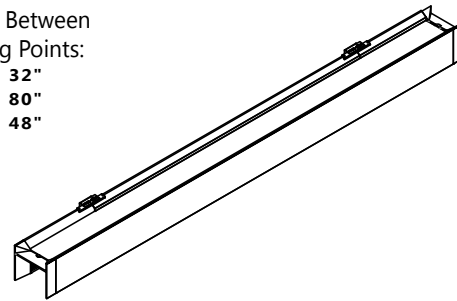


MAL microgroove aluminum

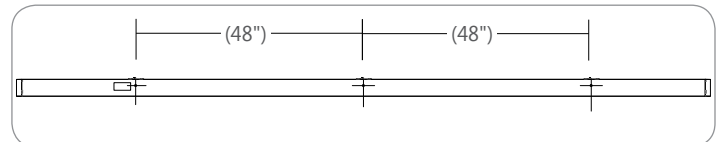
### ● MOUNTING SPACING

Distance Between Mounting Points:

- H 4ft** 32"
- H 8ft** 80"
- H 12ft** 48"

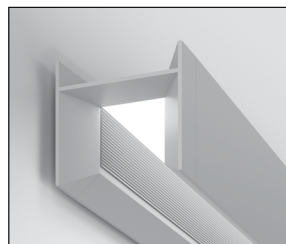


For 4' to 8' luminaires.

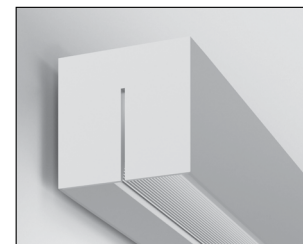


For 9' to 12' luminaires.

### ● END CAP OPTIONS



**Regular end cap**  
Standard

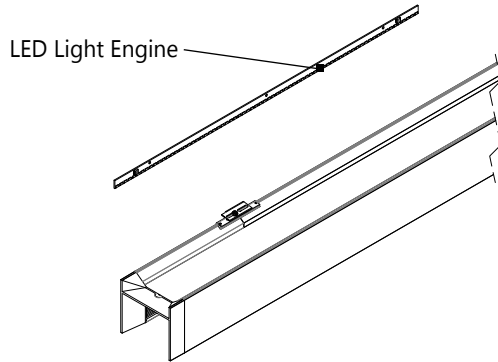


**Slotted end cap**  
Optional



### ● LED UPGRADE / REPLACEMENT

All LED light engines used are field replaceable and upgradable to ensure the lighting system will last for years. Future-proof design comes with easy access to LED light engines from above using quick connectors (included in luminaire) and a screwdriver.



### ● CONSTRUCTION

<b>Housing</b>	Extruded aluminum (0.06" nominal)
<b>End Cap</b>	Die cast aluminum (0.10" nominal)
<b>Joiners</b>	Die cast aluminum (0.10" nominal)
<b>Interior Bracket</b>	Die formed zintec (20 gauge)
<b>Lens</b>	Uniform frosted acrylic lens
<b>Microgroove Lens</b>	Uniform frosted acrylic lens
<b>Microgroove Aluminum</b>	White painted aluminum material
<b>Mounting Brackets</b>	Cold rolled sheet painted (16 gauge)

### ● ELECTRICAL

**Emergency** Remote emergency battery pack or emergency circuit optional.

**Input Voltage** UNV (120-277 V)

**i** Incorporating these components may have limitations or affect the length of the luminaire. Please contact factory for more details.

### ● LED SYSTEM

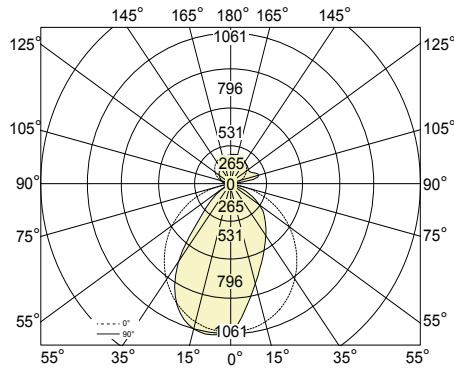
<b>CRI</b>	Minimum 80 or 90 color rendering index
<b>CCT</b>	Choice of 3000K, 3500K and 4000K color temperature with a great color consistency (within 3-step MacAdam ellipse). Both within fixture and fixture to fixture.
<b>LED life</b>	Minimum 50,000h with 85% of lumen maintenance in 25°C ambient temperature, in compliance with IES LM-80 testing measurements.
<b>Thermal Management</b>	Aluminum housing acting as the heat sink to maximize life.
<b>Environment</b>	Dry and damp rated in operating ambient temperatures of 0-40°C (32-104F)



### Microgroove Aluminium (MAL)

**HWDI-SL-25-75-600-80-35-MAL-4.IES**  
25% up / 75% down at 600 lm/ft

#### PHOTOMETRIC CURVE



**Lumens up: 607 lm**  
**Lumens down: 1821 lm**  
**Total lumens: 2428 lm (for 4ft)**  
**Input Watts: 32.06 W (8.0 W/ft)**  
**Efficacy: 76 lm/W**

CRI: 80 shown  
TESTED ACCORDING TO IES LM-79-2008

#### CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angles				
	0	22.5	45	67.5	90
0	980	980	980	980	980
5	982	916	870	848	842
15	944	798	695	640	625
25	875	669	536	470	450
35	776	535	392	322	301
45	652	401	260	191	176
55	505	269	148	116	107
65	346	147	79	56	51
75	182	57	29	13	8
85	38	8	5	2	2
90	2	3	2	1	1
95	10	16	3	2	2
105	52	51	71	137	179
115	99	87	102	144	174
125	139	122	133	151	163
135	168	158	158	171	178
145	189	185	181	183	187
155	202	203	201	199	199
165	210	212	212	212	211
175	213	214	215	215	215
180	212	212	212	212	212

#### ZONAL LUMENS

Zone	Lumens
0	
0-10	91
10-20	245
20-30	341
30-40	365
40-50	308
50-60	215
60-70	130
70-80	54
80-90	11
90	0
90-100	10
100-110	70
110-120	97
120-130	110
130-140	114
140-150	105
150-160	85
160-170	57
170-180	20
180	

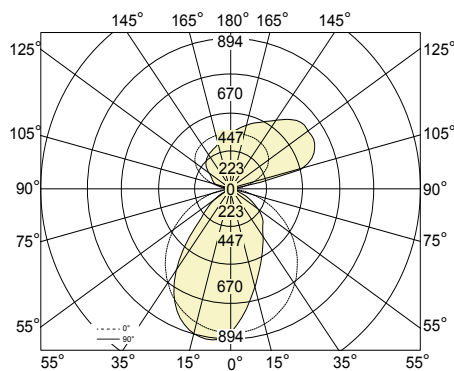
#### LUMINANCE DATA (cd/m<sup>2</sup>)

Vertical Angle	Horizontal Angles		
	0	45	90
45	14565	3630	2146
55	13705	2178	1338
65	12439	1258	675
75	10104	522	121
85	5078	105	29

### Microgroove Aluminium (MAL)

**HWDI-SL-50-50-700-80-35-MAL-4.IES**  
50% up / 50% down at 700 lm/ft

#### PHOTOMETRIC CURVE



**Lumens up: 1432 lm**  
**Lumens down: 1432 lm**  
**Total lumens: 2864 lm (for 4ft)**  
**Input Watts: 32.06 W (8.0 W/ft)**  
**Efficacy: 89 lm/W**

CRI: 80 shown  
TESTED ACCORDING TO IES LM-79-2008

#### CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angles				
	0	22.5	45	67.5	90
0	859	859	859	859	859
5	862	831	805	786	768
15	832	740	657	600	562
25	773	624	500	425	389
35	685	498	355	279	251
45	574	367	228	172	160
55	444	239	136	111	102
65	304	127	76	57	52
75	159	52	29	21	17
85	33	8	4	2	2
90	2	3	2	1	1
95	25	28	6	2	2
105	112	123	184	356	413
115	200	232	290	467	563
125	260	306	380	491	557
135	291	339	404	481	514
145	307	346	393	436	450
155	315	341	371	395	400
165	319	334	349	360	362
175	321	325	329	332	333
180	322	322	322	322	322

#### ZONAL LUMENS

Zone	Lumens
0	
0-10	79
10-20	210
20-30	286
30-40	296
40-50	245
50-60	177
60-70	107
70-80	46
80-90	9
90	0
90-100	21
100-110	157
110-120	238
120-130	265
130-140	249
140-150	205
150-160	151
160-170	92
170-180	31
180	

#### LUMINANCE DATA (cd/m<sup>2</sup>)

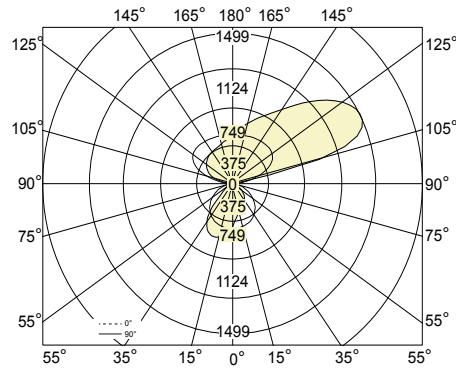
Vertical Angle	Horizontal Angles		
	0	45	90
45	12827	3180	1956
55	12052	1999	1276
65	10924	1209	688
75	8841	538	251
85	4378	86	31



### Microgroove Aluminium (MAL)

**HWDI-SL-75-25-900-80-35-MAL-4.IES**  
75% up / 25% down at 900 lm/ft

#### PHOTOMETRIC CURVE



**Lumens up: 2655 lm**  
**Lumens down: 886 lm**  
**Total lumens: 3541 lm (for 4ft)**  
**Input Watts: 32 W (8.0 W/ft)**  
**Efficacy: 111 lm/W**

CRI: 80 shown  
TESTED ACCORDING TO IES LM-79-2008

#### CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angles				
	0	22.5	45	67.5	90
0	396	396	396	396	396
5	393	366	347	335	333
15	383	314	268	243	237
25	363	263	207	181	175
35	330	212	158	135	129
45	282	162	114	93	85
55	222	112	71	57	53
65	153	66	39	29	26
75	80	27	15	9	7
85	17	4	2	1	1
90	2	2	2	1	1
95	54	51	10	5	5
105	238	404	636	933	1024
115	390	594	863	1272	1499
125	457	647	903	1191	1337
135	469	612	817	1009	1091
145	463	559	691	803	844
155	456	515	590	647	667
165	450	481	515	539	549
175	446	454	464	468	471
180	444	444	444	444	444

#### ZONAL LUMENS

Zone	Lumens
0	
0-10	37
10-20	101
20-30	146
30-40	161
40-50	137
50-60	96
60-70	58
70-80	24
80-90	5
90	0
90-100	51
100-110	405
110-120	585
120-130	554
130-140	450
140-150	332
150-160	226
160-170	131
170-180	43
180	

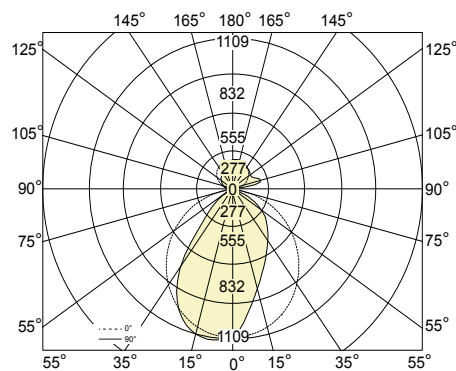
#### LUMINANCE DATA (cd/m<sup>2</sup>)

Vertical Angle	Horizontal Angles		
	0	45	90
45	6310	1590	1032
55	6017	1035	662
65	5487	629	349
75	4470	266	100
85	2247	53	15

### Microgroove Spotless Lens (MSO)

**HWDI-SL-25-75-700-80-35-MSO-4.IES**  
25% up / 75% down at 700 lm/ft

#### PHOTOMETRIC CURVE



**Lumens up: 715 lm**  
**Lumens down: 2184 lm**  
**Total lumens: 2899 lm (for 4ft)**  
**Input Watts: 32.03 W (8.0 W/ft)**  
**Efficacy: 91 lm/W**

CRI: 80 shown  
TESTED ACCORDING TO IES LM-79-2008

#### CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angles				
	0	22.5	45	67.5	90
0	1076	1076	1076	1076	1076
5	1074	1015	975	980	974
15	1039	891	791	760	744
25	966	754	636	599	586
35	858	615	510	480	472
45	720	480	400	383	378
55	560	357	301	292	285
65	388	244	196	168	160
75	205	137	79	55	48
85	45	27	11	4	3
90	2	8	4	1	1
95	10	17	3	2	2
105	53	54	78	166	218
115	103	94	108	161	202
125	144	134	140	160	174
135	175	172	169	180	185
145	196	199	196	195	197
155	209	216	215	213	213
165	215	222	224	224	224
175	218	221	223	223	223
180	218	218	218	218	218

#### ZONAL LUMENS

Zone	Lumens
0	
0-10	99
10-20	271
20-30	389
30-40	433
40-50	390
50-60	306
60-70	200
70-80	90
80-90	20
90	0
90-100	11
100-110	77
110-120	103
120-130	115
130-140	118
140-150	109
150-160	88
160-170	59
170-180	21
180	

#### LUMINANCE DATA (cd/m<sup>2</sup>)

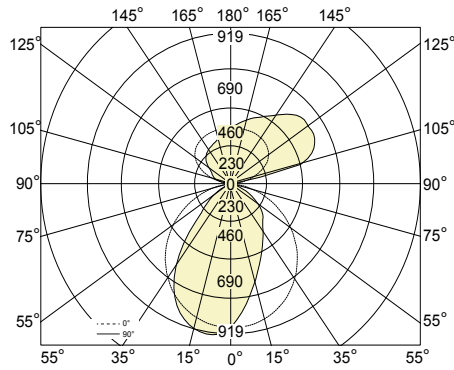
Vertical Angle	Horizontal Angles		
	0	45	90
45	16087	5575	4609
55	15206	4417	3566
65	13937	3135	2112
75	11429	1435	701
85	5937	234	55



### Microgroove Spotless Lens (MSO)

**HWDI-SL-50-50-800-80-35-MSO-4.IES**  
50% up / 50% down at 800 lm/ft

#### PHOTOMETRIC CURVE



**Lumens up: 1655 lm**  
**Lumens down: 1655 lm**  
**Total lumens: 3311 lm (for 4ft)**  
**Input Watts: 32 W (8.0 W/ft)**  
**Efficacy: 103 lm/W**

CRI: 80 shown  
TESTED ACCORDING TO IES LM-79-2008

### CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angles				
	0	22.5	45	67.5	90
0	861	861	861	861	861
5	864	811	783	784	776
15	838	724	644	609	596
25	783	616	512	467	455
35	699	502	398	360	350
45	590	389	300	282	284
55	458	280	228	212	203
65	313	181	138	109	100
75	162	95	44	25	20
85	32	11	6	2	2
90	2	4	2	1	0
95	28	26	4	3	3
105	126	139	215	378	456
115	223	274	332	494	583
125	287	351	439	540	599
135	319	381	462	546	583
145	334	387	440	486	506
155	339	379	415	437	445
165	339	365	385	397	401
175	338	349	355	357	358
180	339	339	339	339	339

### ZONAL LUMENS

Zone	Lumens
0	
0-10	80
10-20	221
20-30	317
30-40	354
40-50	324
50-60	254
60-70	162
70-80	68
80-90	13
90	0
90-100	22
100-110	169
110-120	258
120-130	289
130-140	272
140-150	220
150-160	160
160-170	97
170-180	32
180	

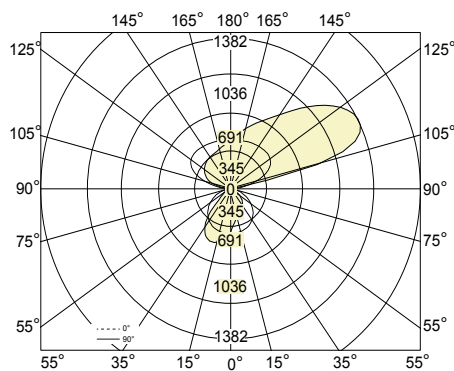
### LUMINANCE DATA (cd/m<sup>2</sup>)

Vertical Angle	Horizontal Angles		
	0	45	90
45	13185	4183	3462
55	12443	3347	2539
65	11244	2210	1323
75	8993	805	288
85	4230	128	27

### Microgroove Spotless Lens (MSO)

**HWDI-SL-75-25-900-80-35-MSO-4.IES**  
75% up / 25% down at 900 lm/ft

#### PHOTOMETRIC CURVE



**Lumens up: 2791 lm**  
**Lumens down: 930 lm**  
**Total lumens: 3722 lm (for 4ft)**  
**Input Watts: 32.07 W (8.0 W/ft)**  
**Efficacy: 116 lm/W**

CRI: 80 shown  
TESTED ACCORDING TO IES LM-79-2008

### CANDELA DISTRIBUTION

Vertical Angle	Horizontal Angles				
	0	22.5	45	67.5	90
0	401	401	401	401	401
5	408	361	342	338	335
15	402	315	275	260	254
25	386	272	231	219	216
35	356	231	198	193	192
45	309	189	167	165	163
55	245	147	130	119	114
65	170	103	79	61	55
75	89	55	26	13	10
85	19	7	3	1	1
90	2	3	2	1	1
95	55	58	10	6	6
105	243	405	603	815	868
115	399	589	848	1198	1376
125	469	651	887	1161	1295
135	481	632	805	982	1063
145	475	587	698	789	829
155	465	540	613	660	678
165	456	497	535	563	571
175	450	464	474	480	482
180	449	449	449	449	449

### ZONAL LUMENS

Zone	Lumens
0	
0-10	38
10-20	108
20-30	168
30-40	202
40-50	191
50-60	145
60-70	92
70-80	38
80-90	7
90	0
90-100	50
100-110	380
110-120	568
120-130	549
130-140	449
140-150	333
150-160	228
160-170	132
170-180	43
180	

### LUMINANCE DATA (cd/m<sup>2</sup>)

Vertical Angle	Horizontal Angles		
	0	45	90
45	6903	2334	1991
55	6657	1914	1422
65	6109	1269	734
75	4978	472	141
85	2491	74	12