

Project: \_\_\_\_\_

Fixture Type: \_\_\_\_\_

Location: \_\_\_\_\_

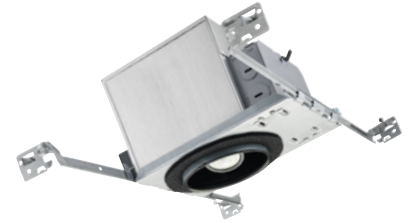
Contact/Phone: \_\_\_\_\_

# 4" IC AND TC 1000 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT NEW CONSTRUCTION

IC4AL, TC4AL (10LM) RECESSED HOUSING



SLOPE CEILING TRIMS



## PRODUCT DESCRIPTION

Patent pending dedicated LED, Air-Loc® sealed new construction housing with integral internally adjustable light engine • Double wall, shallow housing construction • IC4AL series can be completely covered with insulation and installs in 2 x 6 construction • TC4AL series for use in non-insulated areas (If installed where insulation is present, the insulation must be pulled back 3" from all sides of the TC housing) • Fully sealed housing stops infiltration and exfiltration of air, reducing heating and cooling costs without the use of additional gaskets • LED housing is designed to provide 50,000 hours of life • 5 year limited warranty on LED components.

## ENVIRONMENTALLY FRIENDLY, ENERGY EFFICIENT

- No harmful ultraviolet or infrared wavelengths
- No lead or mercury, RoHS compliant
- Comparable light output to 75W incandescent

## PRODUCT SPECIFICATIONS

**LED Light Engine** LED array attached to cast aluminum sliding heatsink integrated directly with housing provides superior heat transfer to ensure long life of the LED • Replaceable light engine mounts directly to inner housing assembly and incorporates the latest generation, high lumen output LED array • LEDs are binned within a 3-step MacAdam Ellipse exceeding ENERGY STAR® requirements for superior fixture to fixture color uniformity • 2700K, 3000K, 3500K, or 4000K color temperatures available • 90 CRI minimum.

**Optics** Three field interchangeable, TIR optics available in 18°, 30° and 40° beam angles • Module can accommodate one 2-inch diameter beam control lens or filter • Adjustable light engine module provides up to 35° vertical adjustment and 360° rotation.

**Aesthetic Trim Selections** Aluminum angle-cut reflector in clear, black, pewter, white, haze and wheat haze • Shadow free, knife edge design blends seamlessly into ceiling.

**LED Driver** Choice of dedicated 120 volt (120) driver or universal voltage (MVOLT) driver that accommodates input voltages from 120-277 volts AC at 50/60Hz • Power factor > 0.9 at 120V input • 120 volt only driver is dimmable with the use of most incandescent, magnetic low voltage and electronic low voltage wall box dimmers • Universal voltage driver is dimmable with the use of most 0-10V wall box dimmers • For a list of compatible dimmers, see [JUNOICLED-DIM](#).

**Life** Rated for 50,000 hours at 70% lumen maintenance.

**Labels** IC4AL is ENERGY STAR® certified • IC4AL is certified to the high efficacy requirements of California T24 JA8-2016 • UL listed for U.S. and Canada for through-branch wiring, damp locations • Union made • UL and cUL.

**Testing** All reports are based on published industry procedures; field performance may differ from laboratory performance.

Specifications subject to change without notice.

## HOUSING FEATURES

**Housing** IC4AL designed for use in IC (insulated ceiling) or non-IC construction • TC4AL designed for use in non-IC construction • Aluminum housing sealed for Air-Loc® compliance • Housing is vertically adjustable to accommodate up to a 1 1/2" ceiling thickness.

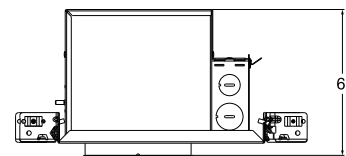
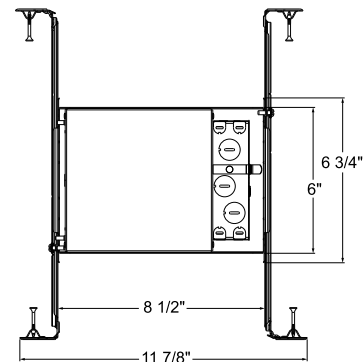
**Junction Box** Pre-wired junction box provided with (6) 1/2" and (1) 3/4" knockouts, (4) knockouts for 12/2 or 14/2 NM cable and ground wire • UL listed and cUL listed for through-branch wiring, maximum 4 #12 branch circuit conductors • Junction box provided with removable access plates • Knockouts equipped with pryout slots • Quick connect electrical connectors supplied as standard for fast, secure installation.

**Mounting Frame** 22-gauge die-formed galvanized steel mounting frame • Rough-in section (junction box, mounting frame, housing and bar hangers) fully assembled for ease of installation.

**Real Nail 3 Bar Hangers** Patented (US Patent D552,969)

Real Nail® 3 bar hangers: telescoping system permits quick placement of housing anywhere within 24" O.C. joists or suspended ceilings • Includes removable nail for repositioning of fixture in wood joist construction • Integral T-bar notch and clip for suspended ceilings.

## DIMENSIONS



4 1/2" CEILING CUTOUT

## ELECTRICAL DATA

### Dedicated 120V Only Driver Option (120) 120V

Input Power	16.4W (+/-5%)	
Input Current	0.15A	
Frequency	50/60Hz	
EMI/RFI	FCC Title 47 CFR, Part 15, Class B (Residential)	
Minimum starting temp	-25°C (-13°F)	

### Universal Voltage Driver (MVOLT ZT)

	120V	277V
Input Power	16.0W (+/-5%)	16.0W (+/-5%)
Input Current	0.15A	0.06A
Frequency	50/60Hz	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class A (Commercial)	FCC Title 47 CFR, Part 15, Class A (Commercial)
Minimum starting temp	-20°C (-4°F)	

### Lutron Hi-Lume® LED Driver (MVOLT ECOS3)

	120V	277V
Input Power	16.4W (+/-5%)	16.6W (+/-5%)
Input Current	0.15A	0.07A
Frequency	50/60Hz	50/60Hz
EMI/RFI	FCC Title 47 CFR, Part 15, Class A (Commercial)	FCC Title 47 CFR, Part 15, Class A (Commercial)
Minimum starting temp	0°C (32°F)	

# 4" IC AND TC 1000 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT NEW CONSTRUCTION

IC4AL, TC4AL (10LM) RECESSED HOUSING

## SLOPE CEILING TRIMS

**ORDERING INFORMATION** Housing and trim can be ordered together or separate, but will always ship separately.

Example: IC4AL 10LM 27K 90CRI FL 120 FRPC

Series	Lumens	Color Temperature	CRI	Distribution	Voltage	Driver
IC4AL 4" LED Internally Adjustable New Const. IC Downlight	10LM 1000 Nominal Lumens	27K 2700K	90CRI 90+ CRI	FL Flood	120 120V MVOLT Multi-Volt (120-277V)	FRPC Forward/Reverse Phase Cut
		30K 3000K		NFL Narrow Flood		ZT 0 - 10V Dimming Driver
		35K 3500K		SP Spot		
		40K 4000K				

Notes: 120 must be ordered with FRPC. MVOLT must be ordered with ZT

Example: TC4AL 10LM 27K 90CRI FL MVOLT ECOS3

Series	Lumens	Color Temperature	CRI	Distribution	Voltage	Driver
TC4AL 4" LED Internally Adjustable New Const. Non IC Downlight	10LM 1000 Nominal Lumens	27K 2700K	90CRI 90+ CRI	FL Flood	MVOLT Multi-Volt	ECOS3 Lumen Hi - Lume A Series, 3-wire fluorescent controls & Lutron Ecosystem
		30K 3000K		NFL Narrow Flood		
		35K 3500K		SP Spot		
		40K 4000K				

TC4AL is not ENERGY STAR® or T24 compliant

### Trim/Description



#### Standard Slope 9° to 24°

- 46L BWH 4" Angle Cut Cone - Standard Slope 9° to 24° - Black Alzak® Cone, White Trim Ring  
 46L CWH 4" Angle Cut Cone - Standard Slope 9° to 24° - Clear Alzak® Cone, White Trim Ring  
 46L HZWH 4" Angle Cut Cone - Standard Slope 9° to 24° - Haze Cone, White Trim Ring  
 46L PTSC 4" Angle Cut Cone - Standard Slope 9° to 24° - Pewter Alzak® Cone, Satin Chrome Trim Ring  
 46L WHZABZ 4" Angle Cut Cone - Standard Slope 9° to 24° - Wheat Haze Cone, Classic Aged Bronze Trim Ring  
 46L WHZWH 4" Angle Cut Cone - Standard Slope 9° to 24° - Wheat Haze Cone, White Trim Ring  
 46L WWH 4" Angle Cut Cone - Standard Slope 9° to 24° - Gloss White Cone, White Trim Ring



#### Super Slope 20° to 35°

- 48L BWH 4" Angle Cut Cone - Super Slope 20° to 35° - Black Alzak® Cone, White Trim Ring  
 48L CWH 4" Angle Cut Cone - Super Slope 20° to 35° - Clear Alzak® Cone, White Trim Ring  
 48L HZWH 4" Angle Cut Cone - Super Slope 20° to 35° - Haze Cone, White Trim Ring  
 48L PTSC 4" Angle Cut Cone - Super Slope 20° to 35° - Pewter Alzak® Cone, Satin Chrome Trim Ring  
 48L WHZABZ 4" Angle Cut Cone - Super Slope 20° to 35° - Wheat Haze Cone, Classic Aged Bronze Trim Ring  
 48L WHZWH 4" Angle Cut Cone - Super Slope 20° to 35° - Wheat Haze Cone, White Trim Ring  
 48L WWH 4" Angle Cut Cone - Super Slope 20° to 35° - Gloss White Cone, White Trim Ring

Trim Size: 5" O.D.

Alzak is a registered trademark of Alcoa Corp.

Note: In Canada when insulation is present, Type IC fixtures must be used.

### Accessories (ordered separately)

Catalog Number	Description
CGF 200 MPINK	Color Glass Filter - 2" Diameter - Medium Pink
CGF 200 WRED	Color Glass Filter - 2" Diameter - Warm Red
CGF 200 DLTBLUE	Color Glass Filter - 2" Diameter - Daylight Blue
CGF 200 MBLU	Color Glass Filter - 2" Diameter - Medium Blue
CGF 200 MAMB	Color Glass Filter - 2" Diameter - Medium Amber
CGF 200 MGRN	Color Glass Filter - 2" Diameter - Medium Green
DGF 200 DRED	Dichroic Glass Filter - 2" Diameter Red
DGF 200 MGRN	Dichroic Glass Filter - 2" Diameter Medium Green
DGF 200 MBLU	Dichroic Glass Filter - 2" Diameter Medium Blue
DGF 200 DYEL	Dichroic Glass Filter - 2" Diameter Yellow (Dichroic)
DGF 200 MAGEN	Dichroic Glass Filter - 2" Diameter Magenta
DGF 200 CYAN	Dichroic Glass Filter - 2" Diameter Cyan
DCCF 200 HL4250	Dichroic Color Correction Filter - 2" Diameter - Halogen - to - Daylight
DIFF 200	Diffusion Glass Lens - 2" Diameter
UVF 200	UV Filter Lens - 2" Diameter
HCLBL 200	Hexagonal Cell Louver - Black - 2" Diameter
LSPREAD 200	Linear Spread Glass Lens - 2" Diameter
PRISM 200	Prismatic Glass Lens - 2" Diameter
TIR2 SPT	TIR Optic - Spot
TIR2 NFLD	TIR Optic - Narrow Flood
TIR2 FLD	TIR Optic - Flood

# 4" IC AND TC 1000 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT NEW CONSTRUCTION

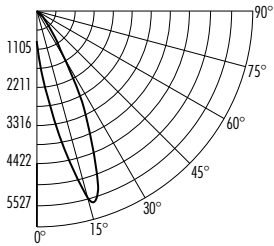
## IC4AL, TC4AL (10LM) RECESSED HOUSING

### SLOPE CEILING TRIMS

#### PHOTOMETRICS

##### PHOTOMETRIC REPORT

Test Report#: PTO21162301R  
Catalog No: IC4AL 10LM 35K 90CRI SP 120  
FRPC with 46L HZWH, Standard Slope Haze  
Finish Trim and Spot Optic  
Luminaire Spacing Criteria: 1.40  
Luminaire LPW: 62



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	954
5	1727
10	3497
15	5527
20	5305
25	3206
30	1542
35	841
40	469
45	274
50	160
55	49
60	22
65	7
70	2
75	0
80	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES Multiple Units (Square Array, 60'x60' room)

Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	71	62	54
5.0'	45	40	35
6.0'	32	28	24
7.0'	26	22	20
8.0'	20	18	15
9.0'	15	14	12
10.0'	11	10	9

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	785	N/A	76.7
0-40°	940	N/A	91.9
0-60°	1021	N/A	99.8
0-90°	1024	N/A	100.0

For 2700K fixtures, use 0.93 multiplier; for 3000K fixtures, use 0.96 multiplier;  
for 3500K fixtures, use 1.00 multiplier; for 4000K fixtures, use 1.03 multiplier.

##### INITIAL FOOTCANDLES (One Unit, 16.4W, 17.6° Beam)

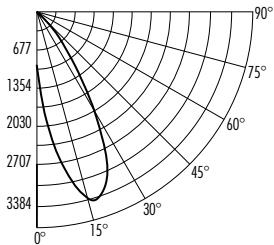
Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	361.1	1.2
6	160.5	1.9
8	90.3	2.5
10	57.8	3.1

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

Degrees	Average 0° Luminance
45	72671
55	15912
65	3168
75	73
85	0

##### PHOTOMETRIC REPORT

Test Report#: PTO1162002R  
Catalog No: IC4AL 10LM 35K 90CRI NFL 120  
FRPC with 46L HZWH, Standard Slope Haze  
Finish Trim and Narrow Flood Optic  
Luminaire Spacing Criteria: 1.50  
Luminaire LPW: 65



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	1025
5	1988
10	2909
15	3553
20	3384
25	3004
30	2196
35	1231
40	583
45	328
50	212
55	65
60	36
65	10
70	3
75	0
80	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES Multiple Units (Square Array, 60'x60' room)

Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	73	64	56
5.0'	47	41	36
6.0'	33	28	25
7.0'	26	23	20
8.0'	21	18	16
9.0'	16	14	12
10.0'	12	10	9

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	773	N/A	73.0
0-40°	962	N/A	90.8
0-60°	1056	N/A	99.7
0-90°	1059	N/A	100.0

For 2700K fixtures, use 0.93 multiplier; for 3000K fixtures, use 0.96 multiplier;  
for 3500K fixtures, use 1.00 multiplier; for 4000K fixtures, use 1.03 multiplier.

##### INITIAL FOOTCANDLES (One Unit, 16.4W, 28.9° Beam)

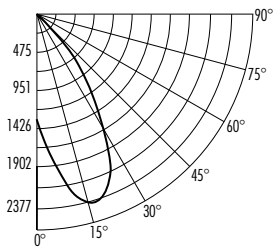
Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	213.7	2.1
6	95.0	3.1
8	53.4	4.1
10	34.2	5.2

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

Degrees	Average 0° Luminance
45	87125
55	21173
65	4373
75	73
85	0

##### PHOTOMETRIC REPORT

Test Report#: PTO21162302R  
Catalog No: IC4AL 10LM 35K 90CRI FL 120  
FRPC with 46L HZWH, Standard Slope Haze  
Finish Trim and Flood Optic  
Luminaire Spacing Criteria: 1.42  
Luminaire LPW: 66



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	1310
5	1784
10	2160
15	2377
20	2357
25	2137
30	1742
35	1203
40	735
45	381
50	170
55	69
60	26
65	10
70	1
75	0
80	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES Multiple Units (Square Array, 60'x60' room)

Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	75	65	56
5.0'	48	41	36
6.0'	33	29	25
7.0'	27	23	20
8.0'	21	18	16
9.0'	16	14	12
10.0'	12	10	9

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	764	N/A	71.0
0-40°	976	N/A	90.8
0-60°	1073	N/A	99.8
0-90°	1075	N/A	100.0

For 2700K fixtures, use 0.93 multiplier; for 3000K fixtures, use 0.96 multiplier;  
for 3500K fixtures, use 1.00 multiplier; for 4000K fixtures, use 1.03 multiplier.

##### INITIAL FOOTCANDLES (One Unit, 16.4W, 36.5° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	149.4	2.6
6	66.4	4.0
8	37.3	5.3
10	23.9	6.6

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

Degrees	Average 0° Luminance
45	101233
55	22586
65	4328
75	73
85	0

# 4" IC AND TC 1000 LUMEN INTERNALLY ADJUSTABLE LED DOWNLIGHT NEW CONSTRUCTION

## IC4AL, TC4AL (10LM) RECESSED HOUSING

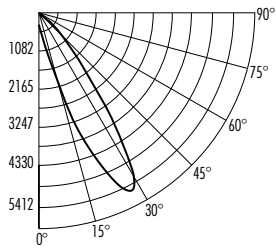
### SLOPE CEILING TRIMS

#### PHOTOMETRICS

##### PHOTOMETRIC REPORT

Test Report#: PTO2162303R  
Catalog No: IC4AL 10LM 35K 90CRI SP 120  
FRPC with 48L HZWH, Super Slope Haze Finish  
Trim and Spot Optic

Luminaire Spacing Criteria: 2.28  
Luminaire LPW: 62



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	334
5	530
10	897
15	1658
20	3399
25	5412
30	5233
35	3190
40	1562
45	877
50	494
55	268
60	93
65	44
70	11
75	4
80	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES Multiple Units (Square Array, 60'x60' room)

Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	69	58	49
5.0'	44	37	31
6.0'	31	26	22
7.0'	25	21	18
8.0'	20	16	14
9.0'	15	13	11
10.0'	11	9	8

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	526	N/A	51.7
0-40°	820	N/A	80.6
0-60°	1006	N/A	98.9
0-90°	1017	N/A	100.0

For 2700K fixtures, use 0.93 multiplier; for 3000K fixtures, use 0.96 multiplier; for 3500K fixtures, use 1.00 multiplier; for 4000K fixtures, use 1.03 multiplier.

##### INITIAL FOOTCANDLES (One Unit, 16.4W, 18.0° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	355.7	1.3
6	158.1	1.9
8	88.9	2.5
10	56.9	3.2

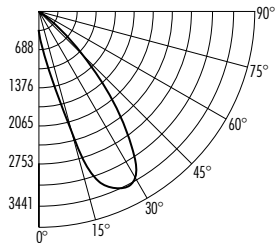
##### LUMINANCE (Average cd/m²)

Degrees	Average 0° Luminance
45	233049
55	87636
65	19432
75	2819
85	216

##### PHOTOMETRIC REPORT

Test Report#: PTO2162303R  
Catalog No: IC4AL 10LM 35K 90CRI NFL 120  
FRPC with 48L HZWH, Super Slope Haze Finish  
Trim and Narrow Flood Optic

Luminaire Spacing Criteria: 2.32  
Luminaire LPW: 65



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	342
5	564
10	1178
15	2195
20	3064
25	3441
30	3390
35	2939
40	2061
45	1105
50	534
55	307
60	99
65	50
70	14
75	4
80	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES Multiple Units (Square Array, 60'x60' room)

Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	73	61	51
5.0'	46	39	33
6.0'	32	27	23
7.0'	26	22	18
8.0'	21	17	15
9.0'	16	13	11
10.0'	12	10	8

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	529	N/A	49.7
0-40°	844	N/A	79.2
0-60°	1054	N/A	98.9
0-90°	1066	N/A	100.0

For 2700K fixtures, use 0.93 multiplier; for 3000K fixtures, use 0.96 multiplier; for 3500K fixtures, use 1.00 multiplier; for 4000K fixtures, use 1.03 multiplier.

##### INITIAL FOOTCANDLES (One Unit, 16.4W, 28.9° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	216.8	2.1
6	96.3	3.1
8	54.2	4.1
10	34.7	5.2

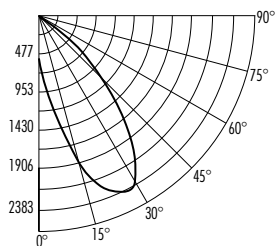
##### LUMINANCE (Average cd/m²)

Degrees	Average 0° Luminance
45	293447
55	100453
65	22044
75	2747
85	216

##### PHOTOMETRIC REPORT

Test Report#: PTO2162304R  
Catalog No: IC4AL 10LM 35K 90CRI FL 120  
FRPC with 48L HZWH, Super Slope Haze Finish  
Trim and Flood Optic

Luminaire Spacing Criteria: 2.22  
Luminaire LPW: 65



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	539
5	905
10	1366
15	1853
20	2208
25	2383
30	2347
35	2092
40	1671
45	1164
50	739
55	425
60	173
65	68
70	24
75	4
80	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES Multiple Units (Square Array, 60'x60' room)

Ceiling 80%, Wall 50%, Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	73	61	51
5.0'	46	39	32
6.0'	32	27	23
7.0'	26	22	18
8.0'	21	17	14
9.0'	16	13	11
10.0'	12	10	8

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixture
0-30°	519	N/A	48.7
0-40°	806	N/A	75.6
0-60°	1051	N/A	98.6
0-90°	1066	N/A	100.0

For 2700K fixtures, use 0.93 multiplier; for 3000K fixtures, use 0.96 multiplier; for 3500K fixtures, use 1.00 multiplier; for 4000K fixtures, use 1.03 multiplier.

##### INITIAL FOOTCANDLES (One Unit, 16.4W, 36.6° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	149.3	2.6
6	66.4	4.0
8	37.3	5.3
10	23.9	6.6

##### LUMINANCE (Average cd/m²)

Degrees	Average 0° Luminance
45	309294
55	139069
65	30100
75	3180
85	0