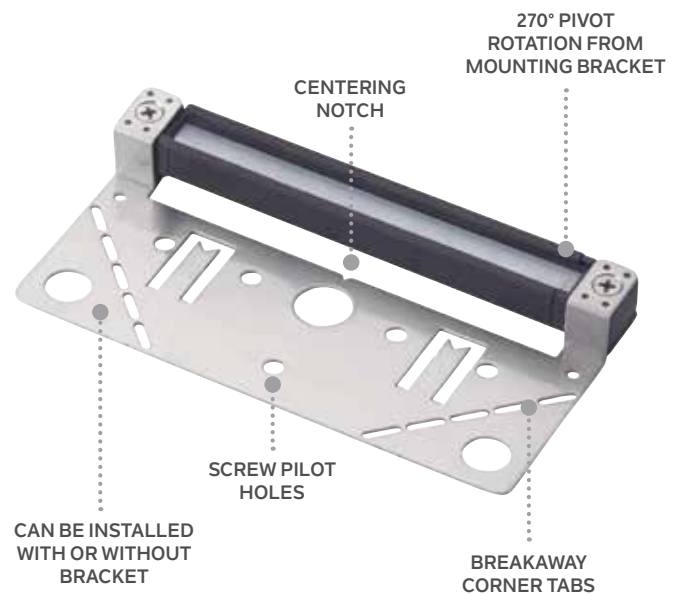# 12V Integrated LED Hardscape

Delivering rotation flexibility exactly where you need it.

Our new design offers pivot rotation, enhanced optical lens for uniform light and expanded versatile installation for more creative layout options. The 12V Integrated LED Hardscape is ideal for illuminating retaining walls and adding safety to outdoor areas such as outdoor kitchens and steps.

270° PIVOT ROTATION FROM MOUNTING BRACKET

CENTERING NOTCH

SCREW PILOT HOLES

CAN BE INSTALLED WITH OR WITHOUT BRACKET

BREAKAWAY CORNER TABS

12V Integrated LED Hardscape Lights offer versatile installation options for new and retrofit applications.

Sealed and fully encapsulated to safeguard from water ingression and the outdoor elements – helping to extend the life of the product.

Versatile IP67 rated design provides a dust-tight housing that can protected against temporary water submersion.

Adjustable fixture can pivot 180° for direct to surface install and pivot 270° when installed with mounting bracket. Usable range is installation dependent.
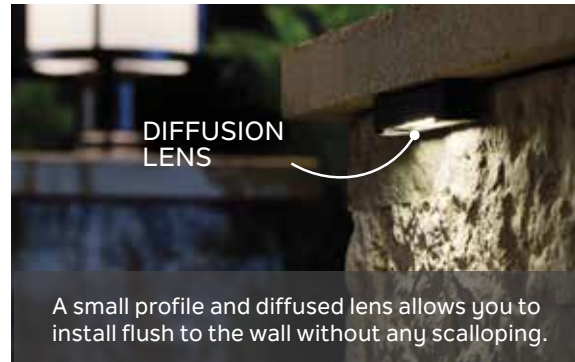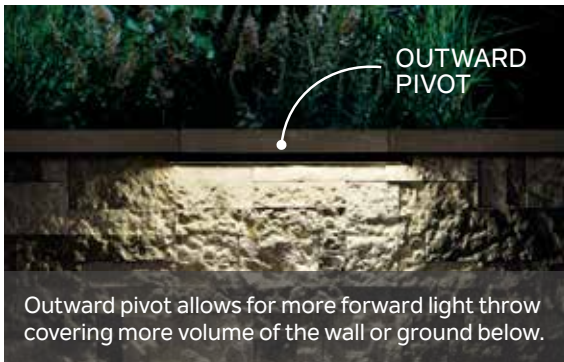
2,000-volt fixture surge protection protects against power surges and irregularities.

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PRODUCT ORDERING GUIDE

Ordering Guide (product number breakdown)	**1** Item Number for Fixture Size:	**2** Product Finish:	**3** Color Temperature:
	16100 = 3.5" Hardscape **16101** = 6" Hardscape **16102** = 12" Hardscape **16103** = 18" Hardscape	**AZT** = Textured Architectural Bronze **BKT** = Textured Black **CBR** = Centennial Brass **GRY** = Textured Gray **SD** = Textured Sand	**27** = 2700K, Warm White **30** = 3000K, Pure White
Example: 16101 CBR 30	1 6 1 0 1	C B R	3 0

OUTWARD PIVOT

Outward pivot allows for more forward light throw covering more volume of the wall or ground below.

DIFFUSION LENS

A small profile and diffused lens allows you to install flush to the wall without any scalloping.

PHOTOMETRICS

16100 – 3.5" Hardscape

		Lateral distance from fixture				
	Mounting Height	0	1 ft.	2 ft.	3 ft.	4 ft.
Foot-candles	**6 in.**	17.96	0.44	0.01	0.00	0.00
	1 ft.	4.49	1.14	0.11	0.01	0.02
	2 ft.	1.12	0.76	0.28	0.09	0.03
	3 ft.	0.50	0.42	0.25	0.13	0.06

16101 – 6" Hardscape

		Lateral distance from fixture				
	Mounting Height	0	1 ft.	2 ft.	3 ft.	4 ft.
Foot-candles	**6 in.**	72.60	0.88	0.00	0.00	0.00
	1 ft.	18.15	3.78	0.22	0.01	0.03
	2 ft.	4.54	2.88	0.94	0.23	0.05
	3 ft.	2.02	1.65	0.93	0.42	0.16

16102 – 12" Hardscape

		Lateral distance from fixture				
	Mounting Height	0	1 ft.	2 ft.	3 ft.	4 ft.
Foot-candles	**6 in.**	143.2	2.68	0.02	0.00	0.00
	1 ft.	35.81	8.31	0.67	0.06	0.11
	2 ft.	8.95	5.86	2.08	0.58	0.17
	3 ft.	3.98	3.29	1.93	0.92	0.39

16103 – 18" Hardscape

		Lateral distance from fixture				
	Mounting Height	0	1 ft.	2 ft.	3 ft.	4 ft.
Foot-candles	**6 in.**	216.4	3.25	0.01	0.00	0.00
	1 ft.	54.10	12.28	0.81	0.05	0.13
	2 ft.	13.53	8.88	3.07	0.79	0.20
	3 ft.	6.01	4.99	2.90	1.36	0.56

Foot-candles 108° Beam Angle

GENERAL FIXTURE SPACING GUIDELINE

Item	16100 (3.5")	16101 (6")	16102 (12")	16103 (18")
Mounting Height	Recommended Spacing (center-to-center of fixtures)			
6"–18"	**3'-4'**	4'-5'	6'-8'	6'-8'
24"	3'-4'	**4'-5'**	6'-8'	6'-8'
36"	3'-4'	**4'-6'**	**6'-8'**	6'-8'
48"	3'-4'	4'-6'	**6'-8'**	**6'-8'**
60"	3'-4'	4'-6'	6'-8'	**6'-8'**

Highlighted values are optimal selections for mounting height application.

Tip: Use centering notch on mounting bracket to aid in spacing layout during installation.
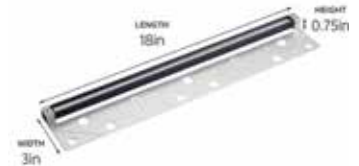
DIMENSIONS

16100

16101

16102

16103

FINISH OPTIONS

AZT - Textured Architectural Bronze

BKT - Textured Black

CBR - Centennial Brass

GRY - Textured Gray

SD - Textured Sand

PERFORMANCE

	16100	16101	16102	16103
Fixture Length	3.5"	6"	12"	18"
Lumen Output	10 lm	40 lm	85 lm	125 lm
Input Voltage	9V–15V	9V–15V	9V–15V	9V–15V
Power (VA) @ 15V AC	0.6VA	1.5VA	2.9VA	3.8VA
Power (W) @ 15V DC	0.3W	.9W	1.9W	2.7W
Efficacy (lm/W @ DC)	43 lm/W	45 lm/W	45 lm/W	46 lm/W

SPECIFICATIONS

Fixture

Light Source	Integrated LED
Color Temperature	2700K, 3000K
Color Rendering Index	80+
Beam Angle	108°
Binning	3 Step
Fixture can be used	UP or DOWN position

Input

Input Voltage Range	9-15V AC or DC with no loss in light output
Input Frequency	47-63Hz
Power Factor	.6 @ 12V

Environmental

Environmental Protection Rating	Wet, IP67
Operation Ambient Temperature	–25°C – +40°C
Expected Life Time (L70)	50K Hours

Mechanical & Housing Specification

16100	3.5" L x .78" W x .75" H (without bracket)
16101	6" L x .78" W x .75" H (without bracket)
16102	12" L x .78" W x .75" H (without bracket)
16103	18" L x .78" W x .75" H (without bracket)
Housing Material	Aluminum, Brass
Housing Color & Surface	AZT, BKT, CBR, GRY, SD
16100	0.4LBS (Aluminum), 0.55LBS (Brass)
16101	0.45LBS (Aluminum), 0.8LBS (Brass)
16102	0.9LBS (Aluminum), 1.3LBS (Brass)
16103	1.2LBS (Aluminum), 1.65LBS (Brass)

Body

Aluminum, Brass casting

Wire

18 AWG, SPT-1W, 105°C, 300V, 84" usable length.

Optics

Custom optics with a diffused lens provides smooth, uniform light distribution to eliminate glare and hotspots.

Included Accessories

304 Stainless Steel Masonry Bracket, Off-bracket Mounting Kit, and 2 Gel-Filled Wire Nuts.

LOAD CHART

Power (VA)	Wire Gauge / Length (ft/m) Load Chart			
	10 AWG	12 AWG	14 AWG	16 AWG
0-20 VA	1860'/567 m	1150'/351 m	730'/223 m	450'/137 m
40 VA	930'/283 m	580'/177 m	370'/113 m	230'/70 m
60 VA	620'/189 m	390'/119 m	240'/73 m	150'/46 m
80 VA	470'/143 m	290'/88 m	180'/55 m	110'/34 m
100 VA	370'/113 m	230'/70 m	140'/43 m	90'/27 m
>100 VA	**Consult Technical Support**			

TROUBLE SHOOTING

Fixture does not illuminate	Verify power connections. Review installation guide for installation problem. Ensure manual reset breaker has not been tripped.
Fixture turns off	Verify power connections. Review installation guide for installation problems. Ensure manual reset breaker has not been tripped. Check voltage drop at fixture.
Fixture trips breaker	Check installation for a possible short or overload state. Isolate the identified short and replace affected fixture or remove fixture(s) installed in overload.

LISTING

UL 1838 Listed. Low Voltage Landscape Lighting Systems.

CSA C22.2#250.7 Listed.

FCC Part 15, subpart B, Class B

LIMITED 15 YEAR WARRANTY

WARRANTY
Backed by our 15 year limited warranty.
Visit **Kichler.com/Warranty** for details.

DISCLOSURE

1. Chip binning ranges: (2700K 80+ CRI: 3 step), (3000K 80+ CRI: 3 step). LED chip data measured in accordance to IES LM-80.
2. Fixture has a 90% confidence luminous flux range to stated 3000K CCT target. Photometric (flux and color) data has been measured in accordance to IES LM- 79.
3. Actual efficacy value can be calculated as follows: Lumen value divided by average power consumption.
4. Do not extend beyond the recommended maximum run length.
5. Recommend product be installed with 10 or 12 gauge wire.
6. Recommend 80% load/20% overhead rule for fixture load planning in reference to the power source. Calculating fixture loading this way provides additional resource for fixture adjustment and loss due to voltage drop due to wire run lengths.
7. We reserve the right to modify and improve the design of our fixtures without prior notice. We cannot guarantee to match existing installed fixtures for subsequent orders or replacements in regards to product appearance, CCT, or lumen output.
8. Damage caused by misuse (including use for an unintended application) or improper or incorrect installation, maintenance or repair, including failure to follow the applicable care and cleaning instructions, is not covered by our warranty.

ADVANCED PRODUCT SOLUTIONS (APS) & LAYOUT TEAM

Have installation issues or a product and location inquiry? We have you covered. Our APS team can provide you with technical guidance and professionally designed landscape lighting layouts free of charge.

Visit **Kichler.com/APS**, reach out to us at **layouts@kichler.com**, or by phone Monday - Friday, 8:00 am to 6:30 pm EST, at **844-KICHLER (844-542-4537)** to get started.

Visit Kichler.com/Hardscape

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