

BIONIQ ROUND ADJUSTABLE RECESSED

A35242-

base number

Color

Finishes

Reflector

Temperature

(Diamond)

Options

- 1.To build a product code in our configurator select the specify button on the base model # product page
2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq

Subseries: Bioniq Round Adjustable

Brand: Prolicht

Division: Architectural

Mounting Type: Recessed

Mounting Location: Ceiling

Subcategory: Downlight

PHYSICAL

Shape: Round

Diameter (mm): 139

Diameter (in): 5 1/2

Height (mm): 137

Height (in): 5 3/8

Ceiling Thickness (mm): 10 / 12.5 / 15

Ceiling Thickness (in): 3/8 or 1/2 or 9/16

Min. Recessing Depth (mm): 150

Min. Recessing Depth (in): 5 7/8

Light Distribution: Adjustable / Downlight

Weight (kg): 0.853

Weight (lbs): 1.88

Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR

Fixture Material: Aluminum Die Cast

Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)

Input Wattage (W): 28.6

Total Output Wattage (W): 26.4

Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)

Driver Included: No

Driver Location: Recessed Housing

Driver Type: Constant Current - Universal

Driver Class: Class 2

Housing: See components

Input Voltage (V): 120 - 277

Constant Current (MA): 700

LED

Number of LEDs: 1

Color Temperature (°K): 2700 / 3000 / 3500 / 4000

Max. Delivered Lumen (lm): 1180 / 1930 / 2029 / 2070

Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530

CRI: >90 CRI

Lamp Life (hrs): 50000

OPTICAL

Reflector°: 10 / 18 / 36

Adjustability: Rotational 355°; Tilt 30°

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards

IP rating: IP54

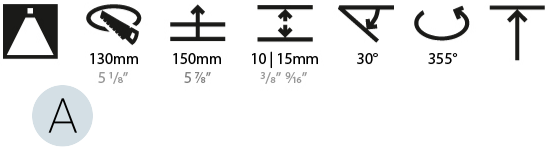
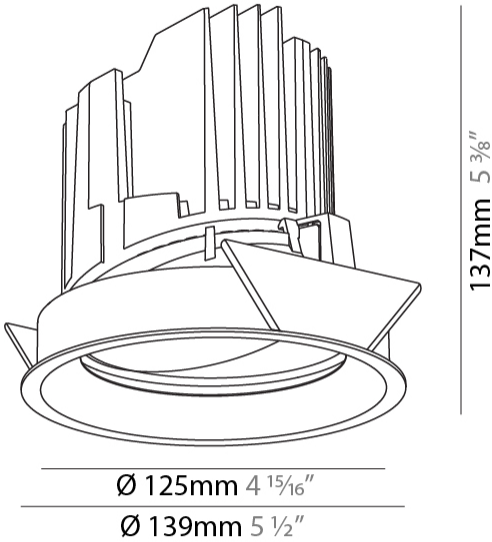
PROJECT

TYPE

SPECIFIER

QUANTITY

DATE



BIONIQ ROUND ADJUSTABLE RECESSED

A35242-

PROJECT	
TYPE	
SPECIFIER	
QUANTITY	
DATE	



BIONIQ ROUND DEEP RECESSED

A35275- - -
base number Color Finishes Reflector
Temperature (Diamond) Options

- 1.To build a product code in our configurator select the specify button on the base model # product page
- 2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq
Subseries: Bioniq Round Deep
Brand: Prolicht
Division: Architectural
Mounting Type: Recessed
Mounting Location: Ceiling
Subcategory: Downlight

PHYSICAL

Shape: Round
Diameter (mm): 139
Diameter (in): 5 1/2
Height (mm): 151
Height (in): 5 15/16
Ceiling Thickness (mm): 10 / 12.5 / 15
Ceiling Thickness (in): 3/8 or 1/2 or 9/16
Min. Recessing Depth (mm): 170
Min. Recessing Depth (in): 6 11/16
Light Distribution: Downlight
Weight (kg): 0.926
Weight (lbs): 2.04
Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR
Fixture Material: Aluminum Die Cast
Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)
Input Wattage (W): 28.6
Total Output Wattage (W): 26.4
Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)
Driver Included: No
Driver Location: Recessed Housing
Driver Type: Constant Current - Universal
Driver Class: Class 2
Housing: See components
Input Voltage (V): 120 - 277
Constant Current (MA): 700

LED

Number of LEDs: 1
Color Temperature (°K): 2700 / 3000 / 3500 / 4000
Max. Delivered Lumen (lm): 2030 / 2080 / 2186 / 2230
Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530
CRI: >90 CRI
Efficiency (%): 0.631
Lamp Life (hrs): 50000

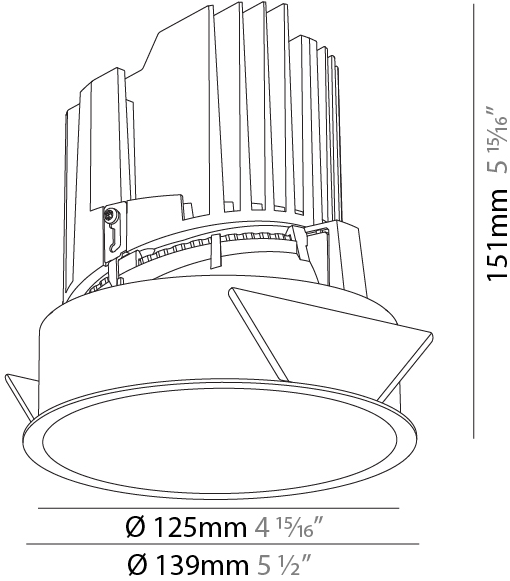
OPTICAL

Reflector: 20 / 25 / 40

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards
IP rating: IP20

PROJECT _____
TYPE _____
SPECIFIER _____
QUANTITY _____
DATE _____



130mm
5 1/8"

170mm
6 11/16"

10 | 15mm
3/8" 9/16"



BIONIQ ROUND DEEP RECESSED

A35275-

PROJECT
TYPE
SPECIFIER
QUANTITY
DATE



BIONIQ ROUND DEEP RECESSED

A35284-

base number

Color

Finishes

Reflector

Temperature

(Diamond)

Options

- 1.To build a product code in our configurator select the specify button on the base model # product page
2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq

Subseries: Bioniq Round Deep

Brand: Prolicht

Division: Architectural

Mounting Type: Recessed

Mounting Location: Ceiling

Subcategory: Downlight

PHYSICAL

Shape: Round

Diameter (mm): 139

Diameter (in): 5 1/2

Height (mm): 151

Height (in): 5 15/16

Ceiling Thickness (mm): 10 / 12.5 / 15

Ceiling Thickness (in): 3/8 or 1/2 or 9/16

Min. Recessing Depth (mm): 170

Min. Recessing Depth (in): 6 11/16

Light Distribution: Downlight

Weight (kg): 0.951

Weight (lbs): 2.1

Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR

Fixture Material: Aluminum Die Cast

Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)

Input Wattage (W): 28.6

Total Output Wattage (W): 26.4

Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)

Driver Included: No

Driver Location: Recessed Housing

Driver Type: Constant Current - Universal

Driver Class: Class 2

Input Voltage (V): 120 - 277

Constant Current (MA): 700

LED

Number of LEDs: 1

Color Temperature (°K): 2700 / 3000 / 3500 / 4000

Max. Delivered Lumen (lm): 1890 / 1940 / 2038 / 2080

Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530

CRI: >90 CRI

Efficiency (%): 0.631

Lamp Life (hrs): 50000

OPTICAL

Reflector°: 20 / 25 / 40

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards

IP rating: IP54

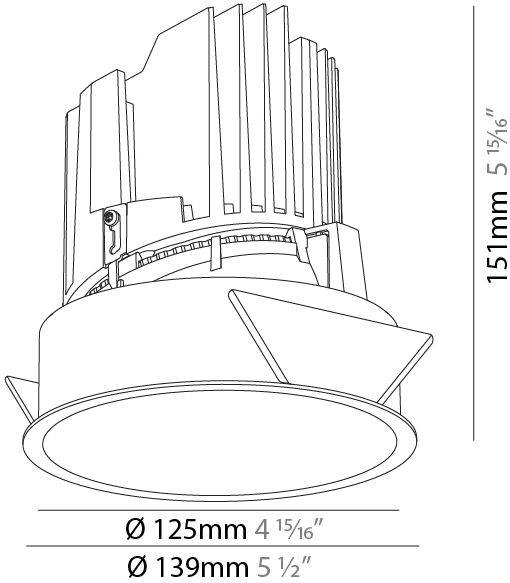
PROJECT

TYPE

SPECIFIER

QUANTITY

DATE



BIONIQ ROUND DEEP RECESSED

A35284-

PROJECT	
TYPE	
SPECIFIER	
QUANTITY	
DATE	



BIONIQ ROUND SEMI ADJUSTABLE RECESSED

A35296- - -
base number Color Temperature Finishes (Diamond) Reflector Options

1. To build a product code in our configurator select the specify button on the base model # product page
2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq
Subseries: Bioniq Round Semi Adjustable
Brand: Prolicht
Division: Architectural
Mounting Type: Recessed
Mounting Location: Ceiling
Subcategory: Downlight

PHYSICAL

Shape: Round
Diameter (mm): 139
Diameter (in): 5 1/2
Height (mm): 137
Height (in): 5 3/8
Ceiling Thickness (mm): 10 / 12.5 / 15
Ceiling Thickness (in): 3/8 or 1/2 or 9/16
Min. Recessing Depth (mm): 150
Min. Recessing Depth (in): 5 7/8
Light Distribution: Adjustable / Downlight
Weight (kg): 0.856
Weight (lbs): 1.89
Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR
Fixture Material: Aluminum Die Cast
Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)
Input Wattage (W): 28.6
Total Output Wattage (W): 26
Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)
Driver Included: No
Driver Location: Recessed Housing
Driver Type: Constant Current - Universal
Driver Class: Class 2
Housing: See components
Input Voltage (V): 120 - 277
Constant Current (MA): 700

LED

Number of LEDs: 1
Color Temperature (°K): 2700 / 3000 / 3500 / 4000
Max. Delivered Lumen (lm): 2030 / 2080 / 2185 / 2230
Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530
CRI: >90 CRI
Efficiency (%): 0.631
Lamp Life (hrs): 50000

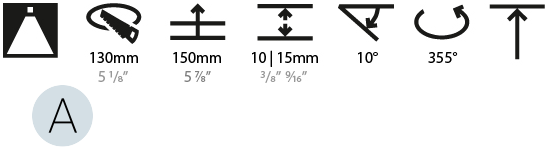
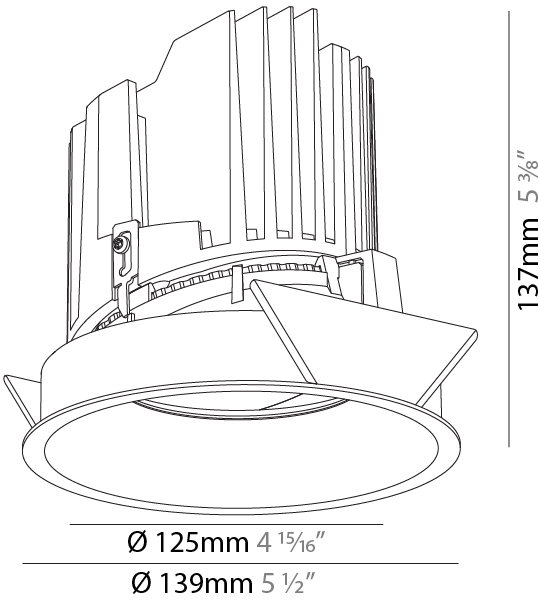
OPTICAL

Reflector: 20 / 40 / 60
Adjustability: Rotational 355°; Tilt 10°

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards
IP rating: IP20

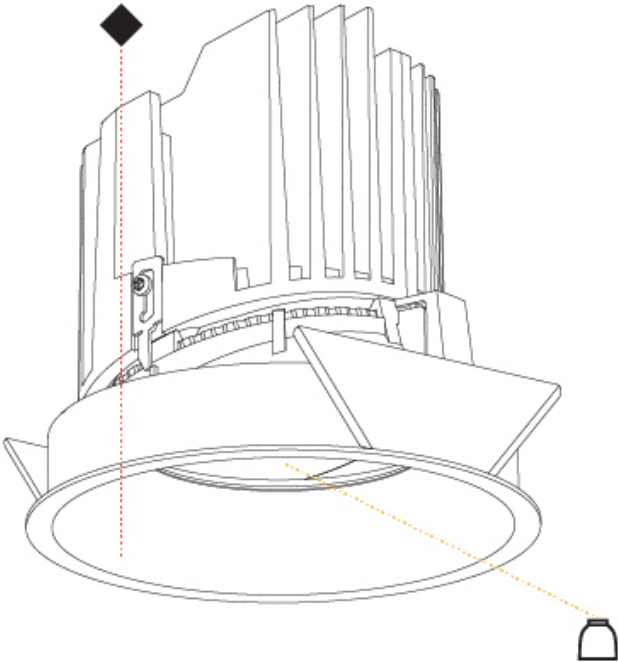
PROJECT
TYPE
SPECIFIER
QUANTITY
DATE



BIONIQ ROUND SEMI ADJUSTABLE RECESSED

A35296-

PROJECT
TYPE
SPECIFIER
QUANTITY
DATE



BIONIQ ROUND SEMI ADJUSTABLE RECESSED

A35308- - -
base number Color Finishes Reflector
Temperature (Diamond) Options

1. To build a product code in our configurator select the specify button on the base model # product page
2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq
Subseries: Bioniq Round Semi Adjustable
Brand: Prolicht
Division: Architectural
Mounting Type: Recessed
Mounting Location: Ceiling
Subcategory: Downlight

PHYSICAL

Shape: Round
Diameter (mm): 139
Diameter (in): 5 1/2
Height (mm): 137
Height (in): 5 3/8
Ceiling Thickness (mm): 10 / 12.5 / 15
Ceiling Thickness (in): 3/8 or 1/2 or 9/16
Min. Recessing Depth (mm): 150
Min. Recessing Depth (in): 5 7/8
Light Distribution: Adjustable / Downlight
Weight (kg): 0.856
Weight (lbs): 1.89
Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR
Fixture Material: Aluminum Die Cast
Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)
Input Wattage (W): 28.6
Total Output Wattage (W): 26
Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)
Driver Included: No
Driver Location: Recessed Housing
Driver Type: Constant Current - Universal
Driver Class: Class 2
Housing: See components
Input Voltage (V): 120 - 277
Constant Current (MA): 700

LED

Number of LEDs: 1
Color Temperature (°K): 2700 / 3000 / 3500 / 4000
Max. Delivered Lumen (lm): 1890 / 1930 / 2028 / 2070
Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530
CRI: >90 CRI
Efficiency (%): 0.631
Lamp Life (hrs): 50000

OPTICAL

Reflector: 20 / 25 / 40
Adjustability: Rotational 355°; Tilt 10°

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards
IP rating: IP54

PROJECT
TYPE
SPECIFIER
QUANTITY
DATE



BIONIQ ROUND SEMI ADJUSTABLE RECESSED

A35308-

PROJECT	
TYPE	
SPECIFIER	
QUANTITY	
DATE	



BIONIQ ROUND WALLWASH RECESSED

A35341-

base number

Color

Finishes

Reflector

Temperature

(Diamond)

Options

- 1.To build a product code in our configurator select the specify button on the base model # product page
2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq

Subseries: Bioniq Round Wallwash

Brand: Prolicht

Division: Architectural

Mounting Type: Recessed

Mounting Location: Ceiling

Subcategory: Wallwash

PHYSICAL

Shape: Round

Diameter (mm): 139

Diameter (in): 5 1/2

Height (mm): 126

Height (in): 4 15/16

Ceiling Thickness (mm): 10 / 12.5 / 15

Ceiling Thickness (in): 3/8 or 1/2 or 9/16

Min. Recessing Depth (mm): 140

Min. Recessing Depth (in): 5 1/2

Light Distribution: Adjustable / Asymmetric

Weight (kg): 0.816

Weight (lbs): 1.8

Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR

Fixture Material: Aluminum Die Cast

Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)

Input Wattage (W): 28.6

Total Output Wattage (W): 26

Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)

Driver Included: No

Driver Location: Recessed Housing

Driver Type: Constant Current - Universal

Driver Class: Class 2

Housing: See components

Input Voltage (V): 120 - 277

Constant Current (MA): 700

LED

Number of LEDs: 1

Color Temperature (°K): 2700 / 3000 / 3500 / 4000

Max. Delivered Lumen (lm): 2320 / 2380 / 2499 / 2550

Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530

CRI: >90 CRI

Lamp Life (hrs): 50000

OPTICAL

Reflector°: 20 / 25 / 40

Adjustability: Fixed

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards

IP rating: IP20

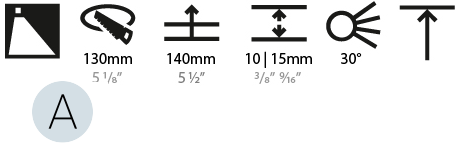
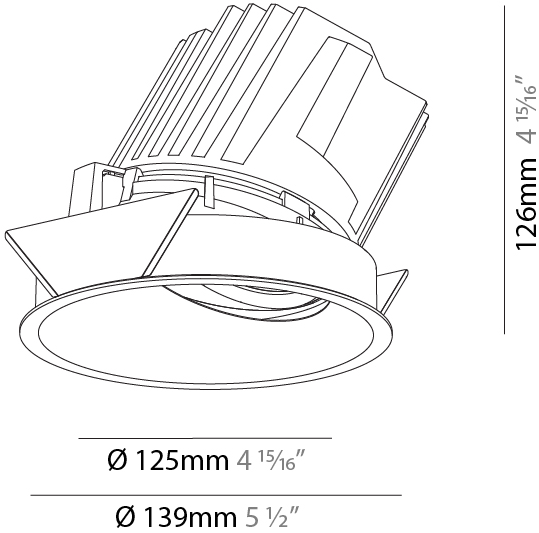
PROJECT

TYPE

SPECIFIER

QUANTITY

DATE



BIONIQ ROUND WALLWASH RECESSED

A35341-

PROJECT
TYPE
SPECIFIER
QUANTITY
DATE



BIONIQ ROUND WALLWASH RECESSED

A37858-

base number

Color

Finishes

Reflector

Temperature

(Diamond)

Options

- 1.To build a product code in our configurator select the specify button on the base model # product page
2. To build a manual product code on this datasheet choose from the options listed below in blue font and add the suffix to the base model #

GENERAL

Series: Bioniq

Subseries: Bioniq Round Wallwash

Brand: Prolicht

Division: Architectural

Mounting Type: Recessed

Mounting Location: Ceiling

Subcategory: Downlight

PHYSICAL

Shape: Round

Diameter (mm): 139

Diameter (in): 5 1/2

Height (mm): 137

Height (in): 5 3/8

Ceiling Thickness (mm): 10 / 12.5 / 15 / 25

Ceiling Thickness (in): 3/8 or 1/2 or 9/16

Min. Recessing Depth (mm): 150

Min. Recessing Depth (in): 5 7/8

Light Distribution: Adjustable / Asymmetric

Weight (kg): 0.865

Weight (lbs): 1.9

Fixture Finish: SSR / BKV / CWI / CRY / HAB / LAG / UFT / ITA / RUA / RUR / MIC / FTG / MYG / TWT / LOD / PUS / FRO / FUP / KIA / POP / BLS / SPG / MEY / GOH / GUM / CHC / COM / ABZ / JAG / OBR / MOS / ROR

Fixture Material: Aluminum Die Cast

Cut-out Measurements: 130mm / 5 1/8"

ELECTRICAL

Lamp Type: LED (Zhaga Standard)

Input Wattage (W): 28.6

Total Output Wattage (W): 26

Dimming: Tri-Mode (Non-Dimming and Phase Dimming (120Vac only) and 0-10V Dimming)

Driver Included: No

Driver Location: Recessed Housing

Driver Type: Constant Current - Universal

Housing: See components

Input Voltage (V): 120 - 277

Constant Current (MA): 700

LED

Number of LEDs: 1

Color Temperature (°K): 2700 / 3000 / 3500 / 4000

Max. Delivered Lumen (lm): 1890 / 1930 / 2028 / 2070

Nominal Lumen (lm): 3210 / 3290 / 3459 / 3530

CRI: >90 CRI

Lamp Life (hrs): 50000

OPTICAL

Reflector°: 20 / 25 / 40

Adjustability: Fixed

RATINGS AND CERTIFICATIONS

Certified By: Certified for North American Standards

IP rating: IP20

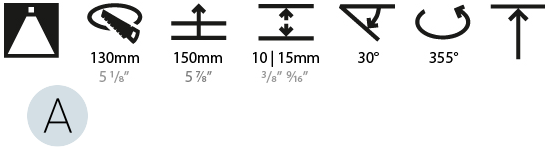
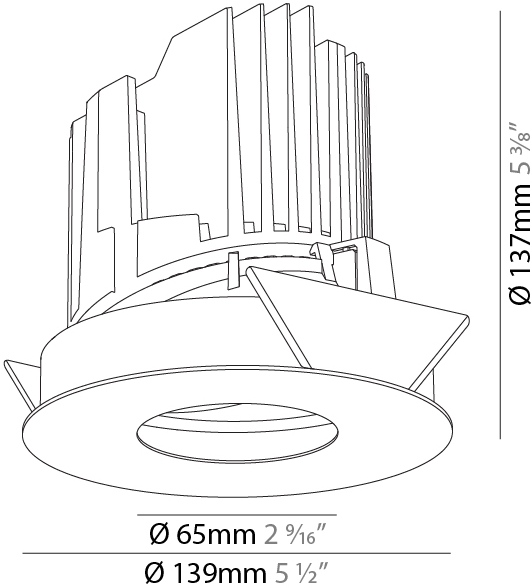
PROJECT

TYPE

SPECIFIER

QUANTITY

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BIONIQ ROUND WALLWASH RECESSED

A37858-

PROJECT
TYPE
SPECIFIER
QUANTITY
DATE



PROJECT

TYPE

SPECIFIER

QUANTITY

DATE

Fixture Finish

Sparkling Silver - 01 (SSR) 	Black Velvet - 02 (BKV) 	Crystal White - 03 (CWI) 	Creamy - 04 (CRY) 	Hampton Bay - 05 (HAB) 	Lagoon - 06 (LAG) 
Urban Forest - 07 (UFT) 	In the Army - 08 (ITA) 	Rusty Angel - 09 (RUA) 	Rusty Rush - 10 (RUR) 	Milk and Chocolate - 11 (MIC) 	Fade to Gray - 12 (FTG) 
Mysterious Gray - 13 (MYG) 	Twilight - 14 (TWT) 	Lost Dream - 15 (LOD) 	Purple Sky - 16 (PUS) 	Fresh Oh - 17 (FRO) 	Funky P. - 18 (FUP) 
Kissing Aphrodite - 19 (KIA) 	Poseidon's Paradise - 20 (POP) 	Blue Sky - 21 (BLS) 	Spring Green - 22 (SPG) 	Mellow Yellow - 23 (MEY) 	Golden Heart - 24 (GOH) 
Gun Metal - 25 (GUM) 	Champagne Cream - 26 (CHC) 	Copper Mine - 27 (COM) 	Ancient Bronze - 28 (ABZ) 	Jazz Gold - 29 (JAG) 	Olive Breeze - 30 (OBR) 
Moonlight Silver - 31 (MOS) 	Rosewood Red - 32 (ROR) 				

Digital: Not all screens are calibrated the same, and therefore, colors will appear differently between devices.
Physical: When texture is involved, there will be variations in color, character and tone within a product and between product families.

Gun Metal: No Gun Metal finish is alike. It combines a mixture of transparent and black color particles to ensure a highly individual effect and no luminaire being identical.
Champagne Cream, Copper Mine, Ancient Bronze + Jazz Gold: These finishes have slight fading from specific powder coating production. Each luminaire will slightly vary.

Available for International specifications by adding 'INT' at the end of the existing Model #. For assistance on 'custom' specifications, contact zteam@zaneen.com.
In a constant effort to supply the best product, we reserve the right to change specifications or materials without notice. The most recent specification sheets are found at zaneen.com

LEGEND

	floor-mounted		pivotal		special LED (upon request) RGB, RGBW, tunable, gold+, meat+, art+, fashion+
	wall and ceiling: recessed and surface mounted		rotating		warm dim / natural dimming LED
	ceiling-mounted and wall-mounted		illuminate tilted		rechargeable battery powered
	wall-mounted		color of suspension cable		fixture with natural vivid LED (upon request)
	omni-directional light distribution		length of suspension cable		color rendering index
	direct light distribution		reflector degree selection		color temperature
	direct/indirect light distribution		super spot		lumen (luminous flux)
	indirect light distribution		lens		efficacy (lumens per watt)
	asymmetric light distribution		lens pack		Unified Glare Rating (UGR) range from 5-40
	aura light distribution		shine ring		marine grade (AISI 316 stainless steel)
	round wall or ceiling cut-out		integrated shine ring with diffuser		walk on
	square wall or ceiling cut-out		free individual colors 01-29		drive on
	the supplied jig specifies the cutout dimensions		individual colors: 00 (free of charge), 01-25 (extra charge)		Dark Sky Compliance
	minimum distance (meters) lamp - object		luminaire part to be colored (F1)		Americans with Disabilities Act (less than 4" off the wall located between 27"-84" from floor)
	recessed depth		luminaire part to be colored (F2)		lamp protected against explosion
	ceiling thickness in mm		luminaire part to be colored (F3)		blown glass using traditional methods by master glass blower
	ceiling thickness selection		luminaire part to be colored (F4)		acoustic material
	dimmable DP (phase), DV (0-10V), DD (dali), DS (step-dim)		luminaire part to be colored (F5)		protection class I, protection insulation
	included or excluded LED driver/transformer/control gear		color of 3-circuit adaptor		protection class II, protection insulation
	separately switchable		indirect diffuser		ETL Certified to UL and CSA Standards
	sensor		direct diffuser		UL Certified to UL and CSA Standards
	remote control		ball-proof (upon request)		CSA Certified to UL and CSA Standards
	available upon request		accessory		Certified for North American Standards

IP RATING

	protected against ingress of solid bodies greater than 12.5mm (finger)
	protected against ingress of solid bodies greater than 2.5mm protected against sprays of water up to 60 degrees from the vertical (rain)
	protected against ingress of solid bodies greater than 1mm (wire) no protection against the ingress of moisture
	protected against ingress of solid bodies greater than 1mm (wire) protected against sprays of water up to 60 degrees from the vertical (rain)
	protected against ingress of solid bodies greater than 1mm (wire) protected against water splashed from all directions
	protected against limited ingress of dust (wet rooms/covered outdoor areas) protected against water splashed from all directions
	protected against ingress of dust protected against jets of water
	protected against ingress of dust protected against powerful jets of water or heavy seas
	protected against ingress of dust protected against immersion of water between 15cm - 1m for 30 minutes
	protected against ingress of dust protected against immersion of water under pressure for long periods

IK RATING

	protected against 0.14 joules impact (equivalent to 0.25kg mass dropped from 56mm above the surface)
	protected against 0.2 joules impact (equivalent to 0.25kg mass dropped from 80mm above the surface)
	protected against 0.35 joules impact (equivalent to 0.25kg mass dropped from 140mm above the surface)
	protected against 0.5 joules impact (equivalent to 0.25kg mass dropped from 200mm above the surface)
	protected against 0.7 joules impact (equivalent to 0.25kg mass dropped from 280mm above the surface)
	protected against 1 joules impact (equivalent to 0.25kg mass dropped from 400mm above the surface)
	protected against 2 joules impact (equivalent to 0.5kg mass dropped from 400mm above the surface)
	protected against 5 joules impact (equivalent to 1.7kg mass dropped from 300mm above the surface)
	protected against 10 joules impact (equivalent to 5.0kg mass dropped from 200mm above the surface)
	protected against 20 joules impact (equivalent to 5.0kg mass dropped from 400mm above the surface)