


Laser Blade InOut is a collection of recessed downlights for architectural applications. It is the continuity of the Laser Blade family designed for wet or damp applications. The luminaires are equipped with high performance Opti Beam optics system for low luminance downlights (UGR < 10). Laser Blade InOut is available in 4 aperture sizes, trim or flush mount, 3 distributions, generous outputs of up to 2400 lumens and excellent chromatic performance.

Luminaire characteristic:	Power input system: 5.7W to 12.4W Power input source: 4W to 29W Lumens system for 3000K, 90CRI: 352 to 2438lm Luminaire efficacy for 3000K, 90CRI: Up to 88lm/W
Source:	White LED module (LM-80) 2700K: 95CRI, 3000K: 90CRI, 3500K: 95CRI, 4000K: 95CRI.
Lumen maintenance:	90% of initial lumens at 100 000 hours (L90 B10) T77° (25°) 90% of initial lumens at 100 000 hours (L90 B10) T104° (40°)
Optics:	Low luminance: Spot, flood or wide flood optics with Opti Beam technology.
Material:	Body and heat sink: Die-cast aluminum Frame: Aluminum alloy Glass: 3mm thick tempered soda-lime glass, transparent with black screen-printing on the edge. Reflector and baffle: Thermoplastic Housing: Galvanized steel
Mounting:	Remodel suitable for insulated ceiling. New construction plaster frame suitable for insulated ceiling. New construction housing or Chicago Plenum rated housing, both suitable for insulated ceiling.
Electrical:	High efficiency LED driver, rated at 50 000 hours. See remote LED driver options on page 3.
Finish:	Trim: Black, gray (RAL9007), rust brown and white (RAL9016) Baffle: black, glossy sand, glossy copper, glossy urban bronze and glossy lead.
Weight:	ILBIO02: 0.33lb (0.15kg) ILBIO05: 1.76lb (0.80kg) ILBIO10: 2.43lb (1.1kg) ILBIO15: 4.10lb (1.86kg)
Warranty:	5 year limited warranty.
Ratings:	IK06, IP65
Certification:	 cULus listed for wet location.

ORDERING INFO



PRODUCT CODE			INSTALLATION CODE			
MODEL	MOUNTING	INSTALLATION TYPE	LED	OPTIC	VOLTAGE	FINISH (TRIM / BAFFLE)
ILBIO02 Two cells	TR Trim	RF ¹ Remodel	927 2700K, 95CRI	SP ^{3,4} Spot 12°	REM Remote	01 White / black
ILBIO05 Five cells	FM Flush mounted	NC ¹ New construction plaster frame	930 3000K, 90CRI	FL ⁵ Flood 30°		T4 White / Glossy lead
ILBIO10 Ten cells		IC ² New construction insulated ceiling	935 3500K, 95CRI	WF ³ Wide flood 48°		T3 White / Glossy sand
ILBIO15 Fifteen cells		CP New construction Chicago Plenum	940 4000K, 95CRI			T2 White / Glossy copper
						T1 White / Glossy urban bronze
						02 Black / Black
						T0 Black / Glossy lead
						S9 Black / Glossy sand
						S8 Black / Glossy copper
						S7 Black / Glossy urban bronze
						15 Gray / Black
						T8 Gray / Glossy lead
						T7 Gray / Glossy sand
						T6 Gray / Glossy copper
						T5 Gray / Glossy urban bronze
						I5 Rust brown / Black
						U2 Rust brown / Glossy lead
						U1 Rust brown / Glossy sand
						U0 Rust brown / Glossy copper
						T9 Rust brown / Glossy urban bronze

¹ Not available for the ten cells (**ILBIO10**) and fifteen cells (**ILBIO15**) models.

² Not available for the two cells (**ILBIO02**) and five cells (**ILBIO05**) models.

³ Not available for two cells (**ILBIO02**) model.

⁴ Not available with **940** LED.

⁵ Only available for the two cells (**ILBIO02**) model.

REMOTE LED DRIVER OPTIONS (TO BE ORDERED SEPARATELY)

PRODUCT CODE (COMPLETE ON THE PREVIOUS PAGE)

Indoor rated drivers

Driver box model	Min-max units			
	ILBIO02 4W*	ILBIO05 9.8W*	ILBIO10 20W*	ILBIO15 29W*
4444-0700-011-UNV-ND	2			
4444-0700-022-120-LTE	2-4	1-2	1	
4445-0700-040-120-LTE	7-8	3		1
4443-0700-014-UNV-D2	3	1		
4443-0700-025-UNV-D2	4-5	2	1	
4443-0700-035-UNV-D2	6-7	3		1
4444-0700-007-UNV-D10	1			
4450-0700-030-UNV-ED10	1-6	1-2	1	
4450-0700-038-UNV-ED10	1-8	1-3	1	1
4450-0700-030-UNV-SD10	1-6	1-2	1	
4448-0700-100-UNV-SD10 (4 led output)	1-20 5 max per led output	1-8 2 max per led output	1-4 1 max per led output	1-3 1 max per led output

Outdoor rated drivers

Driver box model	Min-max units			
	ILBIO02 4W*	ILBIO05 9.8W*	ILBIO10 20W*	ILBIO15 29W*
4548-0700-011-UNV-ND	2			
4548-0700-022-120-LTE	2-4	1-2	1	
4548-0700-040-120-LTE	7-8	3		1
4548-0700-014-UNV-D2	3	1		
4548-0700-025-UNV-D2	4-5	2	1	
4548-0700-035-UNV-D2	6-7	3		1
4548-0700-007-UNV-D10	1			
4549-0700-030-UNV-ED10	1-6	1-2	1	
4549-0700-038-UNV-ED10	1-8	1-3	1	1
4549-0700-030-UNV-SD10	1-6	1-2	1	
4549-0700-100-UNV-SD10 (4 led output)	1-20 5 max per led output	1-8 2 max per led output	1-4 1 max per led output	1-3 1 max per led output

* Wattage requirement for one (1) fixture (remote fixture only).

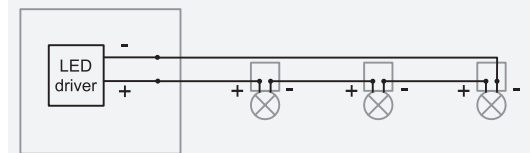
DRIVER BOX MODEL DESCRIPTION

MODEL	CONSTANT CURRENT	WATTAGE	VOLTAGE	DIMMING PROTOCOL
4443 5" x 4" x 3" (127 x 102 x 76mm)	0700 700mA	007 to 100 7W to 100W	120 120V UNV 120-277V	ND No dimming Max distance: 9m (30ft) ¹
4444 6" x 4" x 3" (152 x 102 x 76mm)				D10 0-10V Max distance: 9m (30ft) ¹ (down to 10%)
4445 6" x 6" x 3" (152 x 152 x 76mm)				D2 Lutron Hi Lume® 1% EcoSystem™ (Soft-on, Fade to Black) Max distance: 9m (30ft) ¹ (down to 1%)
4448 10" x 8" x 4" (254 x 203 x 102mm)				ED10 0-10V ELDOLED ECOdrive Max distance: 36m (118ft) ¹ (down to 1%)
4450 8" x 8" x 4" (203 x 203 x 102mm)				SD10 ² 0-10V ELDOLED SOLOdrive Max distance: 36m (118ft) ¹ (down to 0.1%)
4548 6" x 4.5" x 3" (152 x 114 x 76mm)	0700 700mA	007 to 100 7W to 100W	120 120V UNV 120-277V	LTE Leading edge and trailing edge (ELV and TRIAC) Max distance: 9m (30ft) ¹ (down to 15%)
4549 14.5" x 5" x 3.5" (368 x 127 x 89mm)				

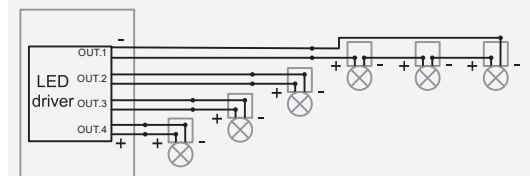
¹ Max distance cable calculated for 16AWG cable. Contact customer service for longer remote distance

WIRING DIAGRAMS

Multiple luminaires must be connected in series (home run or fixture chain)



² Luminaires must be connected on separate led output (1-4). Multiple luminaires can be connected in series on a led output (home run or fixture chain). Do not exceed the wattage and voltage range on each led output.



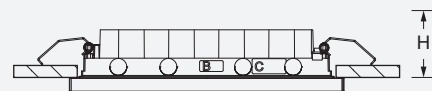
INSTALLATION

Remodel (RF)

Versatile fixture for new or existing ceiling structure. Suitable for insulated or non-insulated ceiling assemblies, like sheetrock, or paneling. Fixture is ready for remodeling installation. Flush mount frame and fixture can be shipped separately.

Ceiling thickness:

Trim: 1/8" - 3/4" (3 - 20mm)
Flush mounted: 1/2" - 5/8" (12.7 - 15mm)



Model		Flush mount frame*	Cut-out dimensions	Clearance (H)
ILBIO02	TR		1 3/8" x 2 1/2" (35 x 64mm)	3 1/4" (83mm)
	FM	TK-LBIO02-FM-RF	2 3/16" x 3 1/2" (55 x 88mm)	
ILBIO05	TR		1 1/2" x 5 3/16" (37 x 141mm)	
	FM	TK-LBIO05-FM-RF	2 3/16" x 6 1/2" (55 x 165mm)	

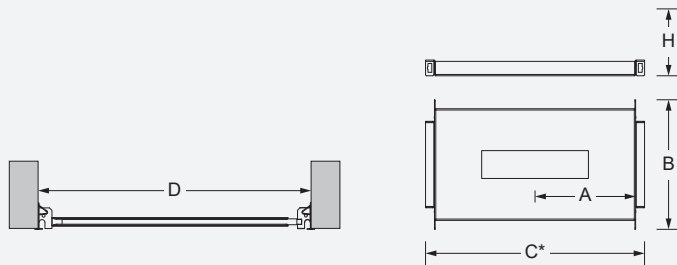
*Can be installed from below the ceiling.

New construction with plaster frame (NC)

Plaster frame with hanger bars system to be installed during rough-in phase. Suitable for insulated or non-insulated ceiling assemblies, like sheetrock, or paneling. Plaster frame can be shipped separately.

Ceiling thickness:

Trim: 1/8" - 3/4" (3 - 20mm)
Flush mounted: 1/2" - 5/8" (12.7 - 15mm)



*Provide a minimum of 1 1/8" (46mm) on each side for the hanger bar fixations

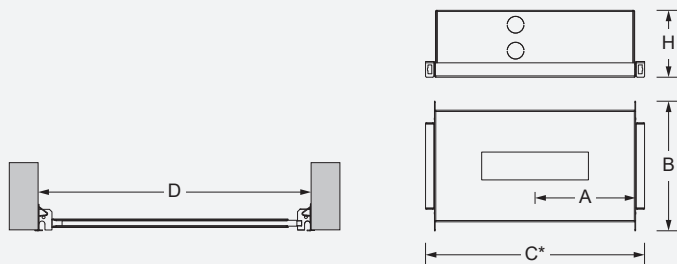
Model	Plaster frame	Cut-out dimensions	Cut-out positions (A)	Overall dimensions (BxC)	Hanger bars range (D)	Clearance (H)
ILBIO02	BN-LBIO02-TR-NC	1 3/8" x 2 1/2" (35 x 64mm)	3" (76mm)	5 15/16" x 6 15/16" (150 x 176mm)	9" to 15 1/2" (229 to 387mm)	3 1/4" (83mm)
	BN-LBIO02-FM-NC	2 3/16" x 3 1/2" (55 x 88mm)				
ILBIO05	BN-LBIO05-TR-NC	1 1/2" x 5 3/16" (37 x 141mm)	5 1/4" (133mm)	6 3/4" x 11 1/16" (172 x 290mm)		
	BN-LBIO05-FM-NC	2 3/16" x 6 1/2" (55 x 165mm)				

New construction with housing suitable for insulated ceiling (IC) or chicago plenum (CP)

Housing with hanger bars system for new construction installations. Suitable for insulated ceiling or chicago plenum applications. Housing can be shipped separately.

Ceiling thickness:

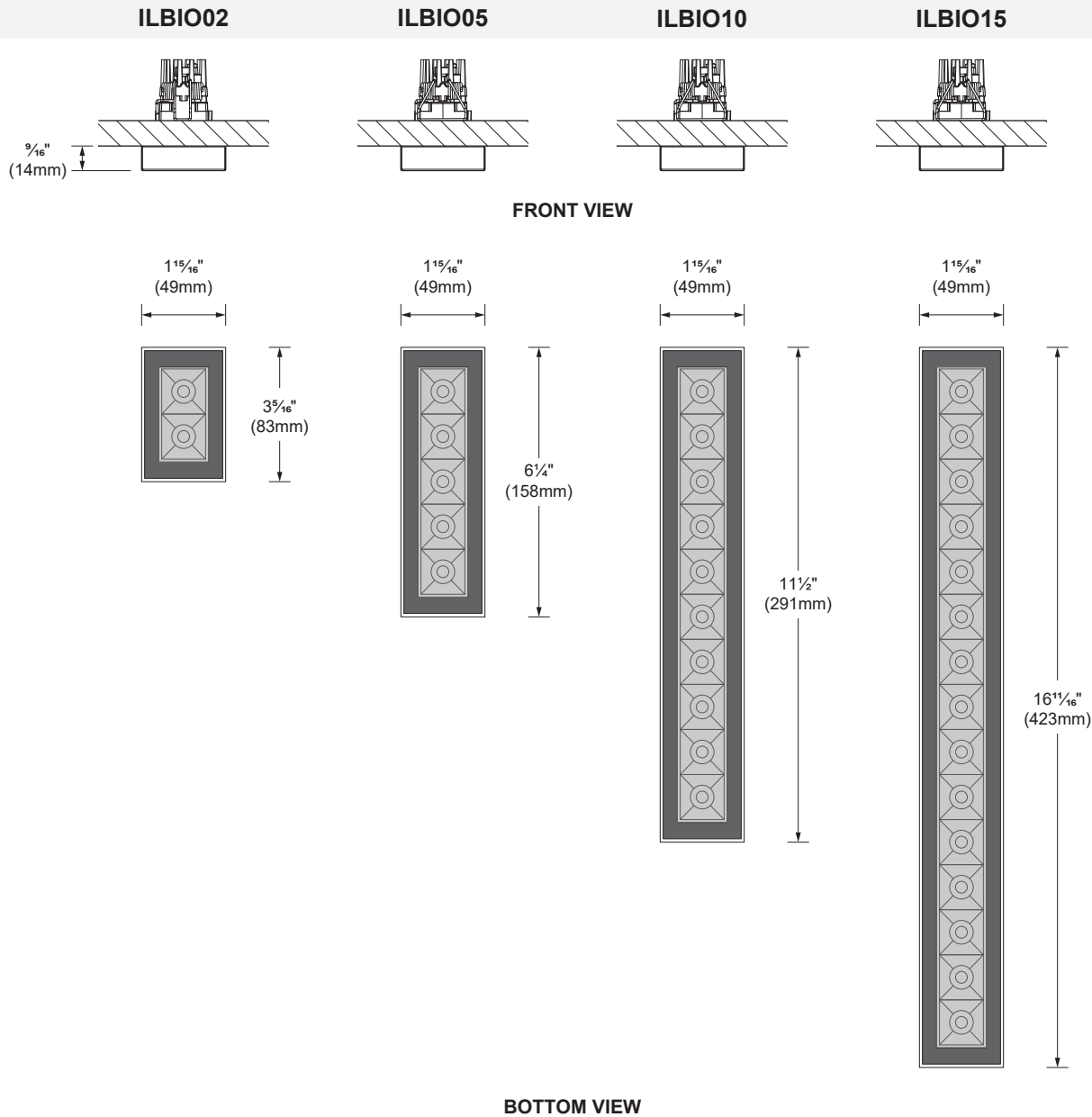
Trim: 1/8" - 3/4" (3 - 20mm)
Flush mounted: 1/2" - 5/8" (12.7 - 15mm)



*Provide a minimum of 1 1/8" (46mm) on each side for the hanger bar fixations

Model	Housing	Cut-out dimensions	Cut-out positions (A)	Overall dimensions (BxC)	Hanger bars range (D)	Clearance (H)
ILBIO02	BI-LBIO02-TR-CP	1 3/8" x 2 1/2" (35 x 64mm)	5 1/4" (133mm)	6 3/4" x 11 1/16" (172 x 290mm)	9" to 15 1/2" (229 to 387mm)	3 1/2" (89mm)
	BI-LBIO02-FM-CP	2 3/16" x 3 1/2" (55 x 88mm)				
ILBIO05	BI-LBIO05-TR-CP	1 1/2" x 5 3/16" (37 x 141mm)				
	BI-LBIO05-FM-CP	2 3/16" x 6 1/2" (55 x 165mm)				
ILBIO10	BI-LBIO10-TR-IC/CP	1 1/2" x 10 13/16" (37 x 274mm)	8 3/16" (217mm)	6 3/4" x 18" (172 x 458mm)	14 1/4" to 26" (362 to 660mm)	
	BI-LBIO10-FM-IC/CP	2 3/16" x 11 3/4" (55 x 297mm)				
ILBIO15	BI-LBIO15-TR-IC/CP	1 1/2" x 16" (37 x 406mm)	11 15/16" (303mm)	9 7/16" x 24 15/16" (240 x 633mm)		
	BI-LBIO15-FM-IC/CP	2 3/16" x 16 3/16" (55 x 429mm)				

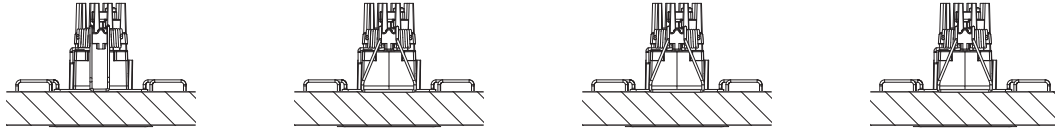
TRIM MODELS DIMENSIONS



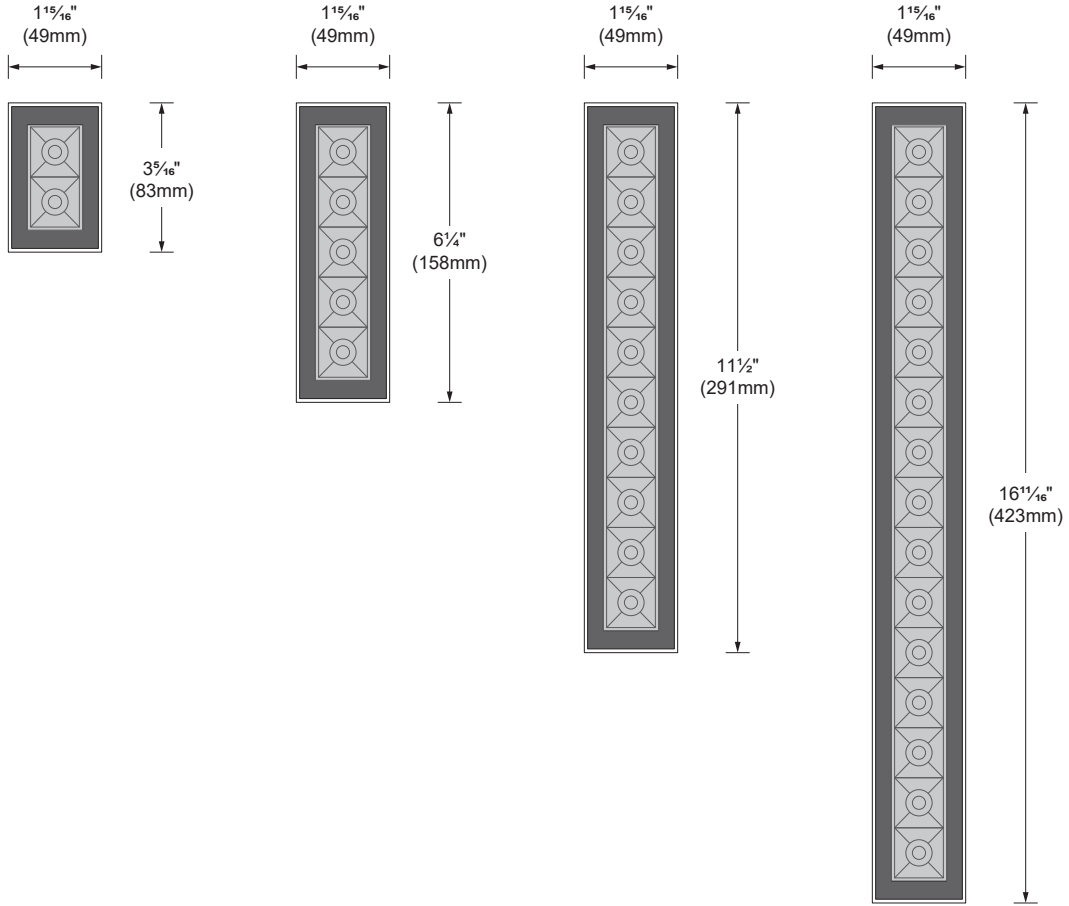
* See page 4 for installation option details

FLUSH MOUNTED MODELS DIMENSIONS

ILBIO02 ILBIO05 ILBIO10 ILBIO15



FRONT VIEW



BOTTOM VIEW

* See page 4 for installation option details

LED COLOR FIDELITY DATA

CRI	CCT	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	Rf	Rg	Melanopic ratio
90	3000K	90	94	97	91	90	92	93	81	53	85	91	78	91	97	86	92	98	0.538
95	2700K	99	99	99	98	99	96	96	93	86	99	95	92	98	98	98	96	101	0.514
	4000K	96	97	96	95	94	95	97	94	84	91	96	73	96	97	94	92	97	0.751

PHOTOMETRIC DATA

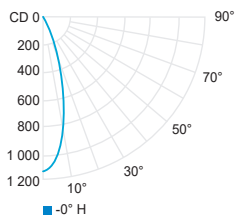
ILBIO02



CCT (K)	CRI	LOAD* (W)	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODEL
3000K	90	4W	Flood 32°	352	88	1 142	ILBIO02-930-FL

*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Flood 32° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	285
4ft	71.4
6ft	31.7
8ft	17.8
10ft	11.4
12ft	7.93

CCT options	2700K	3000K	3500K	4000K
CRI options	95CRI	90CRI	95CRI	95CRI
Multiplier	0.70	1	0.78	0.83

PHOTOMETRIC DATA

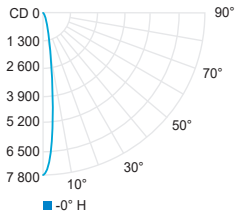
ILBIO05



CCT (K)	CRI	LOAD* (W)	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODELS
3000K	90	9.8W	Spot 12°	825	84	7 766	ILBIO05-930-SP
			Wide flood 48	825	84	1 464	ILBIO05-930-WF

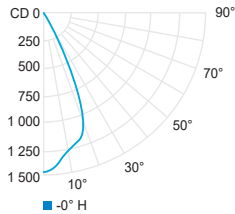
*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Spot 12° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	1 941 0.5
4ft	485 0.9
6ft	216 1.4
8ft	121 1.8
10ft	77.7 2.3
12ft	53.9 2.7

Wide flood 48° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	366 1.8
4ft	91.5 3.6
6ft	40.7 5.4
8ft	22.9 7.2
10ft	14.6 9.0
12ft	10.2 10.8

CCT options	2700K	3000K	3500K	4000K*
CRI options	95CRI	90CRI	95CRI	95CRI*
Multiplier	0.75	1	0.88	0.92*

*Available for wide flood (WF).

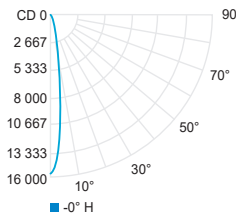
ILBIO10



CCT (K)	CRI	LOAD* (W)	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODELS
3000K	90	20W	Spot 12°	1 613	80	15 179	ILBIO10-930-SP
			Wide flood 48	1 613	80	2 861	ILBIO10-930-WF

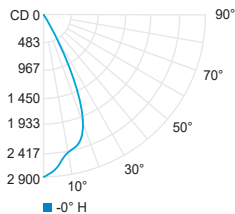
*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Spot 12° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	3 795 0.5
4ft	949 0.9
6ft	422 1.4
8ft	237 1.8
10ft	152 2.3
12ft	105 2.7

Wide flood 48° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	715 1.8
4ft	179 3.6
6ft	79.5 5.4
8ft	44.7 7.2
10ft	28.6 9.0
12ft	19.9 10.8

CCT options	2700K	3000K	3500K	4000K*
CRI options	95CRI	90CRI	95CRI	95CRI*
Multiplier	0.77	1	0.90	0.94*

*Available for wide flood (WF).

PHOTOMETRIC DATA

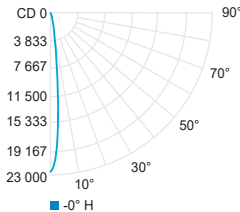
ILBIO15



CCT (K)	CRI	LOAD* (W)	OPTIC	LUMENS (lm)	EFFICACY (lm / W)	MAX CANDELA (cd)	MODELS
3000K	90	29W	Spot 12°	2 438	84	22 944	ILBIO15-930-SP
			Wide flood 48°	2 438	84	4 325	ILBIO15-930-WF

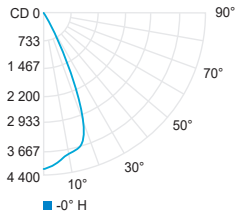
*For products that uses a remote led driver, total system wattage will varies according to the efficacy of the remote led driver selected. For this reason, the load and efficacy values given in the table above refers to the led source only and does not include the led driver consumption.

Spot 12° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	5 736 0.4
4ft	1 434 0.9
6ft	637 1.3
8ft	359 1.8
10ft	229 2.2
12ft	159 2.7

Wide flood 49° (3000K, 90CRI)



Center beam fc	Beam width ft
2ft	1 081 1.8
4ft	270 3.6
6ft	120 5.4
8ft	67.6 7.2
10ft	43.3 9.0
12ft	30.0 10.8

CCT options	2700K	3000K	3500K	4000K*
CRI options	95CRI	90CRI	95CRI	95CRI*
Multiplier	0.75	1	0.89	0.93*

*Available for wide flood (WF).