

BHB LED Specifications

Garage - Ceiling - Commercial - Industrial - Indoor



The NEW Visionaire BOW High Bay LED Luminaire is designed to efficiently light any large interior space such as Factories, Aircraft Hangars, Warehouses, Distribution Centers, and many other large indoor spaces with mounting heights of up to 70'. It combines the innovative design of individual heat sinks with cutting edge LED technology; and makes an ideal replacement for conventional HID and fluorescent high bay systems. This series offers higher efficacy than others in the past and can be combined with options such as wireless controls and motion sensors for even increased energy savings and virtually no maintenance costs.

The 32 LED Light engines are die-cast aluminum with external heat radiating fins for maximum heat dissipation. This innovative design uses 2,4,6, or 8 light engines (64 to 256 LEDs) operating with 350, 530, 700 or 1050 mA drivers. The externally mounted IP-67 Drivers operate cooler for long life and increased output. Improved thermal management of the Light Bars, allows for up to 65°C ambient temperature ratings and -40°C minimum operating temperature; and over 100,000 hours of life at L70.

Our sealed LED optics offer very uniform light distribution and are available in eight distribution patterns of Aisle Wide, Aisle Diffused, Symmetrical Narrow, Symmetrical Narrow Diffused, Symmetrical Medium, Symmetrical Medium Diffused, Symmetrical Wide and Symmetrical Wide Diffused. Choose from 3000, 4000, or 5000 Kelvin temperature of the LEDs.

Mounting options include chain or cable ready as standard; 1/2" threaded rod, and 3/4" conduit. Other options include Motion Sensors, Emergency battery pack and 10' & 15' cords.

A full five year limited warranty is included on the entire system, including the polyester powder coat finish. The NEW Bow High Bay Series makes an excellent choice for many different market applications.

Project Name:

Catalog Number:

Type:

Date:

Location:

MODEL	OPTICS		LEDs	CURRENT	CCT
BHB-2	AW Aisle Wide	SM Symmetrical Medium 90°	64LD	3 350mA	27K7 27K8 27K9 2700K 70, 80, & 90 CRI
BHB-4	AD Aisle Diffused <small>*700mA or Lower</small>	SMD Symmetrical Medium Diffused 90° <small>*700mA or Lower</small>	128LD	5 530mA 7 700mA	30K7 30K8 30K9 3000K 70, 80, & 90 CRI
BHB-6	SN Symmetrical Narrow 40°	SW Symmetrical Wide 120°	192LD	10 1050mA 12 1200mA	35K7 35K8 35K9 3500K 70, 80, & 90 CRI
BHB-8	SND Symmetrical Narrow Diffused 40° <small>*700mA or Lower</small>	SWD Symmetrical Wide Diffused 120° <small>*700mA or Lower</small>	256LD		40K7 40K8 40K9 4000K 70, 80, & 90 CRI 50K7 50K8 50K9 5000K 70, 80, & 90 CRI

VOLTAGE	MOUNTING	FINISH	CONTROL OPTIONS	OPTIONS	MOUNTING ACCESORIES
UNV 120-277V 8 347V 5 480V	CBM Cable Mount <small>*Cable Ordered Separately Hardware Not Included</small> CPM 1/2" Mount <small>*Threaded Rod and Nuts Not Included</small> CDM 3/4" Conduit Mount <small>*Conduit Not Included</small>	WH White GY Grey ZFP Zinc-Free Primer Coat CC Custom Color	DIM 0-10v Dimming Driver DTO Dim to Off Driver WSP6-L2 WSP6-L3 WSP6-L7 8' Mounting Height 9-20' Mounting Height 21-40' Mounting Height WSC-8 WSC-20 WSC-40 8' Mounting Height 9-20' Mounting Height 21-40' Mounting Height <small>*The WSC option will require (1) FSIR 100 remote for programming</small> Z10 or Z18 Zhaga 4 Pin Receptacle VWC Visionaire Wireless Control EBPL Emergency Battery Pack	WG Wire Guard 10CD 10' Cord 15CD 15' Cord BBG Bird Spikes BAA Buy America(n) Act Compliant	YH5 Y-Cable With Hook 5' Height YH10 Y-Cable With Hook 10' Height YH15 Y-Cable With Hook 15' Height <small>*To be ordered with CBM Mounting</small> HK Hook <small>*To be ordered with 3/4" CDM Mount</small>

Housing

The LED light engines are constructed of heavy-duty, die-cast aluminum, with external heat radiating fins.

The exposed driver(s) allow for easy access and allow for cooler operation and longer life.

Thermal Management

The BOW High Bay Series provides excellent overall thermal management by maximizing the fixture's heat sink capabilities. This enables the BOW High Bay Series to withstand higher ambient temperatures and drive currents without degrading LED life. The BOW High Bay Series has a low thermal resistance rating. The heat radiating fins create superior thermal management results.

The L70 test determines the point in an LEDs life when it reaches 70 percent of its initial output. The BOW High Bay Series LEDs have been determined to last a minimum of 100,000 hours in 25 °C environments when driven at 350 mA. See LED Data Chart for additional test results.

Optical System

The highest lumen output LEDs are utilized in the BHB Series. Distribution Types include Aisle Wide, Aisle Diffused, Symmetrical Narrow 40°, Symmetrical Narrow Diffused 40°, Symmetrical Medium 90°, Symmetrical Medium Diffused 90°, Symmetrical Wide 120° and Symmetrical Wide Diffused 120°. LED light assemblies come in multiples of 32 LEDs.

CRI values are 70.

Quali-Guard® Finish

• The finish is a Quali-Guard® textured, chemically pretreated through a multiple-stage washer, electrostatically applied, thermoset polyester powder coat finish, with a minimum of 3-5 mils thickness. Finish is oven-baked at 400° F to promote maximum adherence and finish hardness. All finishes are available in standard and custom colors.

• Finish is guaranteed for five (5) years.

Mounting

Available standard for:

- Cable Mount
- 1/2" Mount
- 3/4" Conduit

Electrical Assembly

The BOW High Bay Series is supplied with a choice of 350, 530, 700, 1050 or 1200mA high-performance LED drivers that accept 120v thru 480v, 50 Hz to 60 Hz, input. Power factor of 90%.

Rated for -40 °C to +65 °C temperature operations.

10 kV surge protector supplied as standard.

5' Cord as standard.

• 0-10v Dimming Driver is standard.

Warranty

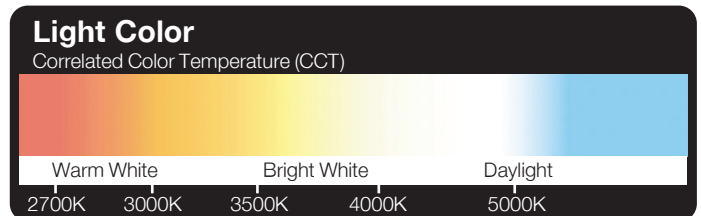
• Five (5) year Limited Warranty on electrical components, Five (5) year on finish. For full warranty information, please visit visionairelighting.com.

Options

- Wattstopper Plus
- Motion Sensor/Control Watt Stopper FSP-211
- Motion Sensor (On/Off)
- Wireless Control
- Emergency Battery Pack
- Wire Guard
- Cord 10' / 15'
- Dimming Leads

Listings

- UL/cUL listed UL 1598 Suitable for damp locations
- UL 8750 LED equipment in Lighting Products
- Powder Coated Tough™



Photometric Optical Summary

AW	AD	SN	SND	SM	SMD	SW	SWD
							

Dimensions

Width:	BHB-2	40"
	BHB-4	40"
	BHB-6	40"
	BHB-8	40"
Depth:	BHB-2	6"
	BHB-4	11"
	BHB-6	15.5"
	BHB-8	20"
Height:	BHB-2	19"
	BHB-4	19"
	BHB-6	19"
	BHB-8	19"

BHB-2 W/EBPL



16LBS

BHB-4 W/Motion Sensor



30LBS

BHB-6



46LBS

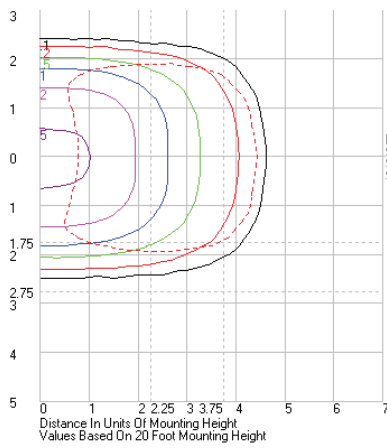
BHB-8



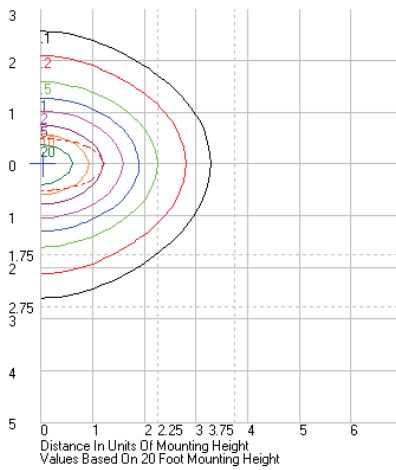
59LBS

Photometrics/ISO Line

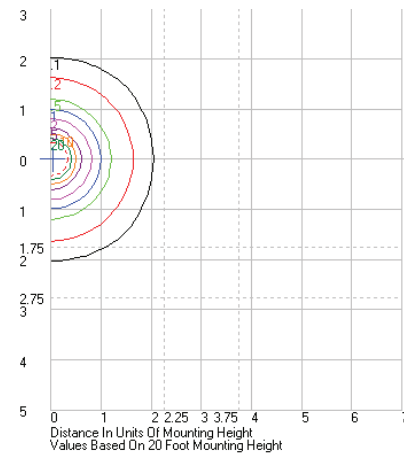
Aisle Wide



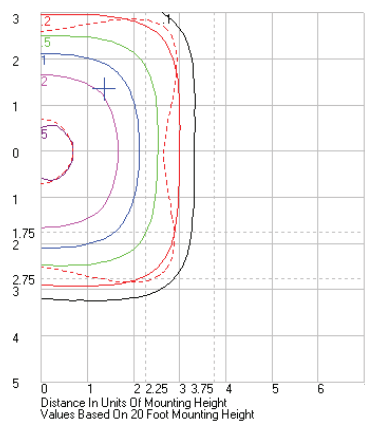
Aisle Diffused



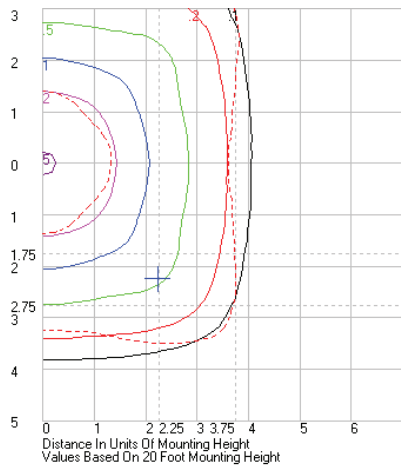
Symmetrical Narrow 40°



Symmetrical Medium 90°






Symmetrical Wide 120°





The BOW High Bay series optical lens system enables LEDs to provide precise illumination where needed. Lenses are designed for commercial & industrial applications where mounting height, fixture spacing & light levels help determine lens selection. The following table outlines lens options and suggested application.

Optic Application Guide		
	Mounting Height	Space Type
Aisle Wide	15-25'	Isle with storage racks
Aisle Diffused	26+	Isle with storage racks
Symmetrical Narrow 40°	41'+	Open Floor Space
Symmetrical Medium 90°	26'-40	Open Floor Space
Symmetrical Wide 120°	15-25'	Open Floor Space

Mounting Options

<p>Cable Mount</p> 	<p>Cable Mount</p> <p>Available on with Bow High Bay configurations Y Cable / Hook to be ordered as a mounting accessory</p>
<p>1/2" Mount</p> 	<p>1/2" Mount</p> <p>Available on all Bow High Bay size configurations Attaches to 1/2" threaded rod (Rod and hardware not included)</p>
<p>3/4" Conduit Mount</p> 	<p>3/4" Conduit Mount</p> <p>Available on Bow High Bay configurations Attaches to 3/4" threaded conduit or hook (Conduit and hardware not included)</p>

Mounting Accesories

<p>Y-Cable / Hook</p> 	<p>Y-Cable / Hook</p> <p>Available on with Bow Highbay configurations Must order with Cable Mount option Available in 5', 10' and 15'</p>
<p>Hook</p>  <p>Image as reference</p>	<p>Hook</p> <p>Available on Bow Highbay configurations Must order 3/4" Conduit Mount with the Hook for a Mounting Accessory</p>

WATTSTOPPER PLUS

FSP-600 Series

The FSP-600 series by Wattstopper PLUS is an integrated luminaire level lighting controller and sensor for indoor/outdoor lighting applications that require networked wireless control. The FSP-600 is designed to integrate directly into exterior, high bay, parking garage, and general site lighting solutions. It is a passive infrared (PIR) sensor and closed loop photosensor.

The FSP-600 series design intends to reduce installer labor time and make on-site start up easy for technicians.

Once commissioned and paired to a Wattstopper PLUS network, the devices can measure both motion and daylight contribution in order to automatically switch or dim lighting. It also provides the ability to communicate to other fixtures in the space without any front-end devices.

The Wattstopper PLUS FSP-600 series is available in a few different options including: internal, external straight nipple, and external drop nipple. Sensor lens options sold separately and should be ordered based on designed mounting height and desired finish.

FSP-621



FSP-200 Series

The FSP-200 series sensors provide multi-level control based on motion and/or daylight contribution. They control 0-10 VDC LED drivers or dimming ballasts, as well as non-dimming ballasts and, with an FSP-Lx Lens, are rated for wet and cold locations. All control parameters are adjustable via a wireless configuration tool capable of storing and transmitting sensor profiles. The FSP-200 series is available in two different voltage configurations adding flexibility to your fixture design or project.

Typically, the sensor ramps lighting On to the selected High mode level when motion is detected and the ambient light level is below the hold off setpoint. After the sensor stops detecting movement and the time delay elapses, lights fade to the Low mode level. If there is no motion during the subsequent cut off time delay, the lights will turn Off. For dusk to dawn control, the integral photocell can switch the lights On and Off based on the ambient light level so that lighting remains on overnight even without motion detection.

Initial setup and subsequent sensor adjustments are made using a Wireless Handheld Configuration Tool (FSIR-100). This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cut off and more. The FSIR-100 is also used to initiate automatic calibration of the FSP-2x1B ambient light level setpoint. The setpoint is used to hold the controlled lighting off or at a low level when there is sufficient daylight. The wireless tool stores up to six sensor parameter profiles to speed configuration of multiple sensors.

FSP-211



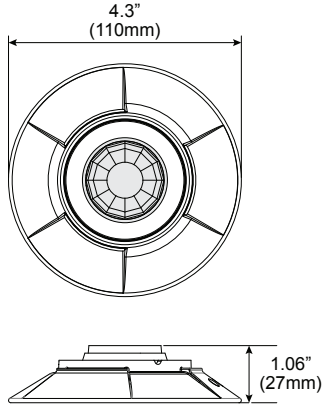
FSP-221



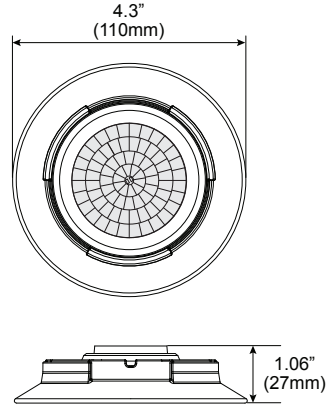
Lens with Shroud Dimensions

The FSP-Lx-S models include a shroud, which blocks high-angle light coming from the fixture, to improve photocell performance. With the shroud attached, the dimensions for all three lenses are identical

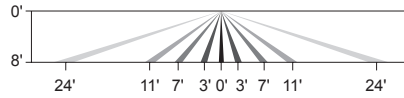
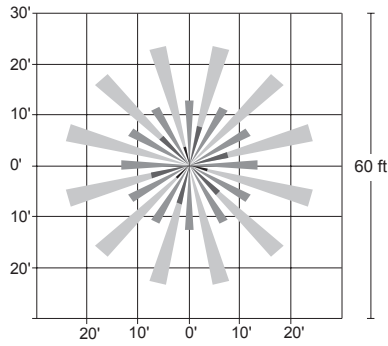
FSP-L2-S and FSP-L3-S



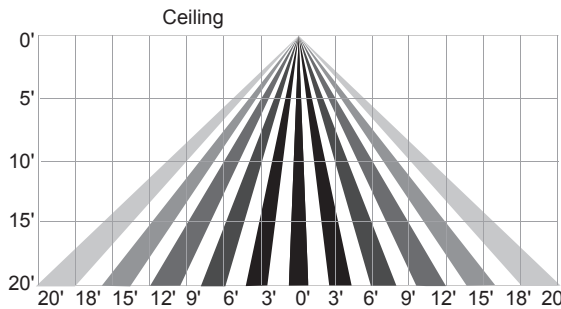
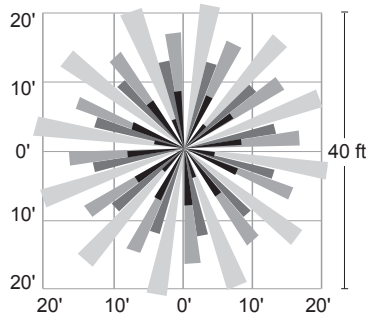
FSP-L7-S



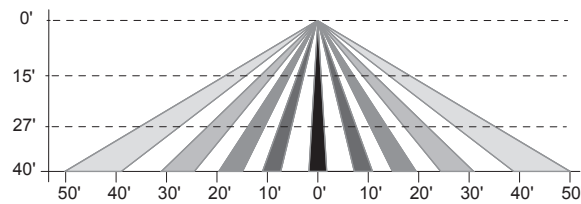
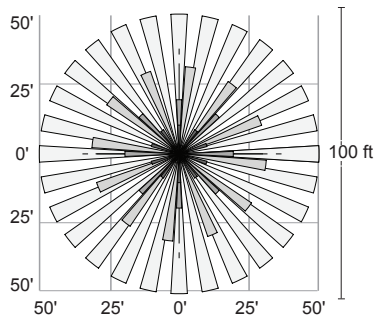
COVERAGE



FSP-L2 top and side coverage patterns



FSP-L3 top and side coverage patterns



FSP-L7 top and side coverage patterns

BHB - ELECTRICAL LOAD (A)							
Ordering Nomenclature	System Watts	120	208	240	277	347	480
BHB-2-SW-64LD-3	66	0.55	0.32	0.27	0.24	0.19	0.14
BHB-2-SW-64LD-5	101	0.84	0.49	0.42	0.37	0.29	0.21
BHB-2-SW-64LD-7	136	1.13	0.65	0.57	0.49	0.39	0.28
BHB-2-SW-64LD-10	210	1.75	1.01	0.87	0.76	0.60	0.44
BHB-2-SW-64LD-12	241	2.01	1.16	1.01	0.87	0.70	0.50
BHB-4-SW-128LD-3	131	1.10	0.63	0.55	0.47	0.38	0.27
BHB-4-SW-128LD-5	203	1.69	0.97	0.84	0.73	0.58	0.42
BHB-4-SW-128LD-7	272	2.26	1.31	1.13	0.98	0.78	0.57
BHB-4-SW-128LD-10	419	3.49	2.02	1.75	1.51	1.21	0.87
BHB-4-SW-128LD-12	483	4.02	2.32	2.01	1.74	1.39	1.01
BHB-6-SW-192LD-3	197	1.64	0.95	0.82	0.71	0.57	0.41
BHB-6-SW-192LD-5	304	2.53	1.46	1.27	1.10	0.88	0.63
BHB-6-SW-192LD-7	408	3.40	1.96	1.70	1.47	1.17	0.85
BHB-6-SW-192LD-10	629	5.24	3.02	2.62	2.27	1.81	1.31
BHB-6-SW-192LD-12	724	6.04	3.48	3.02	2.62	2.09	1.51
BHB-8-SW-256LD-3	263	2.19	1.26	1.10	0.95	0.76	0.55
BHB-8-SW-256LD-5	406	3.38	1.95	1.69	1.46	1.17	0.84
BHB-8-SW-256LD-7	544	4.53	2.61	2.26	1.96	1.57	1.13
BHB-8-SW-256LD-10	838	6.99	4.03	3.49	3.03	2.42	1.75
BHB-8-SW-256LD-12	966	8.05	4.64	4.02	3.49	2.78	2.01

LUMENS 2700K 70CRI																			
MODEL	# LEDs	Current (mA)	AW	LPW	AD	LPW	SN	LPW	SND	LPW	SM	LPW	SMD	LPW	SW	LPW	SWD	LPW	WATTS
BHB-2	64LD	350	9315	142	9200	140	10044	153	9481	144	10045	153	8894	135	9212	140	8094	123	67
		530	13880	137	13710	135	14968	148	14129	139	14969	148	13254	131	13727	135	12061	119	101
		700	18068	133	17846	131	19483	143	18391	135	19485	143	17252	127	17988	131	15699	116	140
		1050	25711	123			27725	132			27727	132			25427	121			210
		1200	28316	117			30534	126			30537	126			28004	116			242
BHB-4	128LD	350	18592	141	18364	140	20049	153	18925	144	20050	153	17753	135	18387	140	16155	123	132
		530	27705	137	27366	135	29876	147	28201	139	29878	147	26455	130	27400	135	24073	119	203
		700	36063	133	35621	131	38889	143	36708	135	38891	143	34435	127	35665	131	31336	115	272
		1050	51318	122			55339	132			55343	132			50753	121			419
		1200	56518	117			60947	126			60951	126			55895	116			483
BHB-6	192LD	350	27832	141	27491	139	30013	152	28331	144	30015	152	26576	135	27526	140	24184	123	197
		530	41475	136	40967	135	44725	147	42217	139	44728	147	39603	130	41018	135	36038	118	304
		700	53987	132	53325	131	58217	143	54953	135	58221	143	51550	126	53391	131	46910	115	408
		1050	76824	122			82843	132			82849	132			75977	121			629
		1200	84608	117			91238	126			91244	126			83676	116			725
BHB-8	256LD	350	37036	141	36582	139	39938	152	37699	143	39940	152	35364	134	36627	139	32181	122	263
		530	55190	136	54513	134	59514	147	56177	139	59518	147	52699	130	54581	135	47955	118	406
		700	71838	132	70958	131	77467	143	73124	135	77473	143	68596	126	71046	131	62421	115	544
		1050	102227	122			110237	131			110245	131			101100	121			838
		1200	112586	117			121408	126			121416	126			111345	115			966

LUMENS 3000K 70CRI																			
MODEL	# LEDs	Current (mA)	AW	LPW	AD	LPW	SN	LPW	SND	LPW	SM	LPW	SMD	LPW	SW	LPW	SWD	LPW	WATTS
BHB-2	64LD	350	9702	148	9583	146	10462	159	9875	150	10463	159	9264	141	9595	146	8430	128	67
		530	14457	143	14280	141	15590	154	14716	145	15591	154	13805	136	14298	141	12562	124	101
		700	18819	138	18588	137	20293	149	19155	141	20294	149	17969	132	18611	137	16352	120	140
		1050	26779	128			28877	138			28879	138			26484	126			210
		1200	29493	122			31804	132			31806	132			29168	121			242
BHB-4	128LD	350	19365	147	19127	145	20882	159	19711	150	20884	159	18491	141	19151	146	16826	128	132
		530	28857	142	28503	141	31118	153	29373	145	31120	153	27555	136	28539	141	25074	124	203
		700	37562	138	37102	137	40505	149	38234	141	40508	149	35867	132	37148	137	32638	120	272
		1050	53451	128			57640	138			57644	138			52862	126			419
		1200	58868	122			63480	131			63485	131			58219	121			483
BHB-6	192LD	350	28989	147	28634	145	31261	159	29508	150	31263	159	27681	140	28670	145	25189	128	197
		530	43199	142	42670	140	46584	153	43972	145	46587	153	41249	136	42723	140	37536	123	304
		700	56231	138	55541	136	60636	149	57237	140	60641	149	53693	132	55611	136	48859	120	408
		1050	80017	127			86287	137			86293	137			79135	126			629
		1200	88125	122			95030	131			95037	131			87154	120			725
BHB-8	256LD	350	38575	147	38102	145	41598	158	39266	149	41601	158	36834	140	38150	145	33518	127	263
		530	57484	142	56779	140	61988	153	58513	144	61992	153	54889	135	56850	140	49948	123	406
		700	74824	138	73907	136	80687	148	76164	140	80693	148	71447	131	73999	136	65016	120	544
		1050	106477	127			114820	137			114828	137			105303	126			838
		1200	117266	121			126454	131			126463	131			115973	120			966

LUMENS 3500K 70CRI																				
MODEL	# LEDs	Current (mA)	AW	LPW	AD	LPW	SN	LPW	SND	LPW	SM	LPW	SMD	LPW	SW	LPW	SWD	LPW	WATTS	
BHB-2	64LD	350	9702	148	9583	146	10462	159	9875	150	10463	159	9264	141	9595	146	8430	128	67	
		530	14457	143	14280	141	15590	154	14716	145	15591	154	13805	136	14298	141	12562	124	101	
		700	18819	138	18588	137	20293	149	19155	141	20294	149	17969	132	18611	137	16352	120	140	
		1050	26779	128			28877	138			28879	138				26484	126			210
		1200	29493	122			31804	132			31806	132				29168	121			242
BHB-4	128LD	350	19365	147	19127	145	20882	159	19711	150	20884	159	18491	141	19151	146	16826	128	132	
		530	28857	142	28503	141	31118	153	29373	145	31120	153	27555	136	28539	141	25074	124	203	
		700	37562	138	37102	137	40505	149	38234	141	40508	149	35867	132	37148	137	32638	120	272	
		1050	53451	128			57640	138			57644	138				52862	126			419
		1200	58868	122			63480	131			63485	131				58219	121			483
BHB-6	192LD	350	28989	147	28634	145	31261	159	29508	150	31263	159	27681	140	28670	145	25189	128	197	
		530	43199	142	42670	140	46584	153	43972	145	46587	153	41249	136	42723	140	37536	123	304	
		700	56231	138	55541	136	60636	149	57237	140	60641	149	53693	132	55611	136	48859	120	408	
		1050	80017	127			86287	137			86293	137				79135	126			629
		1200	88125	122			95030	131			95037	131				87154	120			725
BHB-8	256LD	350	38575	147	38102	145	41598	158	39266	149	41601	158	36834	140	38150	145	33518	127	263	
		530	57484	142	56779	140	61988	153	58513	144	61992	153	54889	135	56850	140	49948	123	406	
		700	74824	138	73907	136	80687	148	76164	140	80693	148	71447	131	73999	136	65016	120	544	
		1050	106477	127			114820	137			114828	137				105303	126			838
		1200	117266	121			126454	131			126463	131				115973	120			966

LUMENS 4000K 70CRI																				
MODEL	# LEDs	Current (mA)	AW	LPW	AD	LPW	SN	LPW	SND	LPW	SM	LPW	SMD	LPW	SW	LPW	SWD	LPW	WATTS	
BHB-2	64LD	350	9650	147	9532	145	10406	158	9823	149	10407	158	9215	140	9544	145	8385	128	67	
		530	14380	142	14204	140	15507	153	14638	144	15508	153	13731	135	14222	140	12495	123	101	
		700	18718	138	18489	136	20185	149	19053	140	20187	149	17874	132	18512	136	16265	120	140	
		1050	26637	127			28724	137			28726	137				26343	126			210
		1200	29336	121			31634	131			31637	131				29012	120			242
BHB-4	128LD	350	19262	147	19026	145	20771	158	19607	149	20773	158	18392	140	19049	145	16737	127	132	
		530	28703	142	28352	140	30952	153	29217	144	30955	153	27408	135	28387	140	24941	123	203	
		700	37362	137	36904	136	40290	148	38031	140	40293	148	35676	131	36950	136	32464	119	272	
		1050	53167	127			57333	137			57337	137				52581	125			419
		1200	58555	121			63143	131			63147	131				57909	120			483
BHB-6	192LD	350	28835	146	28482	144	31094	158	29351	149	31097	158	27534	140	28517	145	25055	127	197	
		530	42969	141	42443	140	46336	152	43738	144	46339	152	41030	135	42495	140	37336	123	304	
		700	55931	137	55246	136	60314	148	56933	140	60318	148	53407	131	55315	136	48599	119	408	
		1050	79592	127			85828	136			85834	137				78714	125			629
		1200	87656	121			94525	130			94531	130				86690	120			725
BHB-8	256LD	350	38370	146	37900	144	41376	157	39057	149	41379	157	36638	139	37947	144	33340	127	263	
		530	57178	141	56477	139	61658	152	58201	144	61662	152	54597	135	56548	139	49683	123	406	
		700	74426	137	73514	135	80258	148	75759	139	80264	148	71067	131	73606	135	64670	119	544	
		1050	105910	126			114209	136			114217	136				104743	125			838
		1200	116642	121			125781	130			125790	130				115356	119			966

LUMENS 5000K 70CRI																			
MODEL	# LEDs	Current (mA)	AW	LPW	AD	LPW	SN	LPW	SND	LPW	SM	LPW	SMD	LPW	SW	LPW	SWD	LPW	WATTS
BHB-2	64LD	350	10125	154	10000	152	10918	166	10306	157	10919	166	9668	147	10013	152	8797	134	67
		530	15087	149	14902	147	16270	160	15357	151	16271	160	14406	142	14921	147	13110	129	101
		700	19639	145	19398	143	21177	156	19990	147	21179	156	18752	138	19422	143	17064	126	140
		1050	27946	133			30136	144			30138	144			27638	132			210
		1200	30778	127			33190	137			33192	137			30439	126			242
BHB-4	128LD	350	20209	154	19961	152	21792	166	20570	156	21794	166	19297	147	19986	152	17560	134	132
		530	30114	149	29745	147	32474	160	30653	151	32476	160	28755	142	29782	147	26167	129	203
		700	39199	144	38719	142	42270	156	39901	147	42273	156	37430	138	38767	143	34060	125	272
		1050	55781	133			60152	143			60156	144			55166	132			419
		1200	61433	127			66247	137			66251	137			60756	126			483
BHB-6	192LD	350	30253	153	29882	152	32623	165	30794	156	32625	165	28887	146	29919	152	26287	133	197
		530	45082	148	44529	146	48614	160	45888	151	48617	160	43047	142	44595	147	39172	129	304
		700	58681	144	57962	142	63279	155	59731	147	63283	155	56033	137	58034	142	50989	125	408
		1050	83504	133			90047	143			90054	143			82584	131			629
		1200	91966	127			99172	137			99179	137			90952	126			725
BHB-8	256LD	350	40256	153	39763	151	43410	165	40977	156	43414	165	38439	146	39812	151	34979	133	263
		530	59989	148	59254	146	64689	160	61062	151	64694	160	57281	141	59327	146	52125	129	406
		700	78085	144	77128	142	84203	155	79483	146	84209	155	74561	137	77224	142	67849	125	544
		1050	111117	133			119823	143			119832	143			109892	131			838
		1200	122376	127			131965	137			131974	137			121027	125			966