




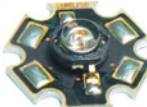



# Portable Lighting

DESIGNER'S GUIDE




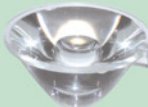
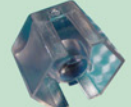




# PORTABLE LIGHTING

## LUXEON® LEDs

		SMT		Emitter		Star		SMT Emitter	
		LUXEON® PWT	LUXEON® I	LUXEON® III	LUXEON® I	LUXEON® III	LUXEON® K2	LUXEON® K2	
									
Typical Flux	(lm)	26	45	65	45	65	51	100	
Drive Current	(mA)	350	350	700	350	1000	350	1000	
Max Junction Temperature	(°C)	135	135	135	135	135	150	150	
Thermal Resistance	(°C/W)	10	15	13	15	13	9	9	
Efficacy	(lm/W)	22	38	25	38	25	43	27	
Size	(mm)	2.04 x 1.6 x 0.7	14.5 x 8.0 x 5.9	14.5 x 8.0 x 5.9	19.9 x 19.0 x 7.4	19.9 x 19.0 x 7.4	11.7 x 7.3 x 5.8	11.7 x 7.3 x 5.8	
Part #		LXCL-PWT1	LXHL-PW01	LXHL-PW09	LXHL-MW1D	LXHL-LW3C	LXK2-PW12	LXK2-PW14	

## Optics

	Compact Polymer Optics	Low Profile		Cardo	Supa-Hex Polymer Optics	Standard Fraen	Reflectors IMS	
		Polymer Optics	Fraen					
								
Full Angle (°)	40	12, 50	10, 30, 45	12, 30, 50	12, 50	10, 30, 45	10	
Diameter (mm)	8.8	15	19	20	25	30	17, 20, 27	
Nomenclature	137	12x/y	FLP-HxB3-y-z	10003/x	15x	FHS-HxB1-y-z	S0yXA	
Nomenclature [ x ]	—	[0] = Narrow Beam (12°) [4] = Wide Beam (50°)	[N] = Narrow Beam (10°) [M] = Medium Beam (30°) [W] = Wide Beam (45°)	[ ] = Narrow Beam (12°) [15] = Medium Beam (30°) [25] = Narrow Beam (50°)	[2] = Narrow Beam (12°) [3] = Wide Beam (50°)	[N] = Narrow Beam (10°) [M] = Medium Beam (30°) [W] = Wide Beam (45°)	—	
Options								
[ y ]	—	[121] = LUXEON® I & LUXEON® III Emitter [128] = LUXEON® III Star [151] = LUXEON® K2	[LB01] = Batwing [LL01] = Lambertian	—	—	[LB01] = Batwing [LL01] = Lambertian	[17] = Small (17mm) [20] = Medium (20mm) [27] = Large (27mm)	
[ z ]	—	—	H: with holder	—	—	H: with holder	—	
Remarks	—	—	—	black, clear, white holders available	the holder is part of lens	—	—	
Line	LUXEON® PWT	LUXEON® I, LUXEON® III, LUXEON® K2	LUXEON® I, LUXEON® III	LUXEON® I, LUXEON® III, LUXEON® K2	LUXEON® I, LUXEON® III, LUXEON® K2	LUXEON® I, LUXEON® III	LUXEON® I, LUXEON® III, LUXEON® K2	

Note: the above optics work with both Lambertian and Batwing radiation patterns

## Power Management

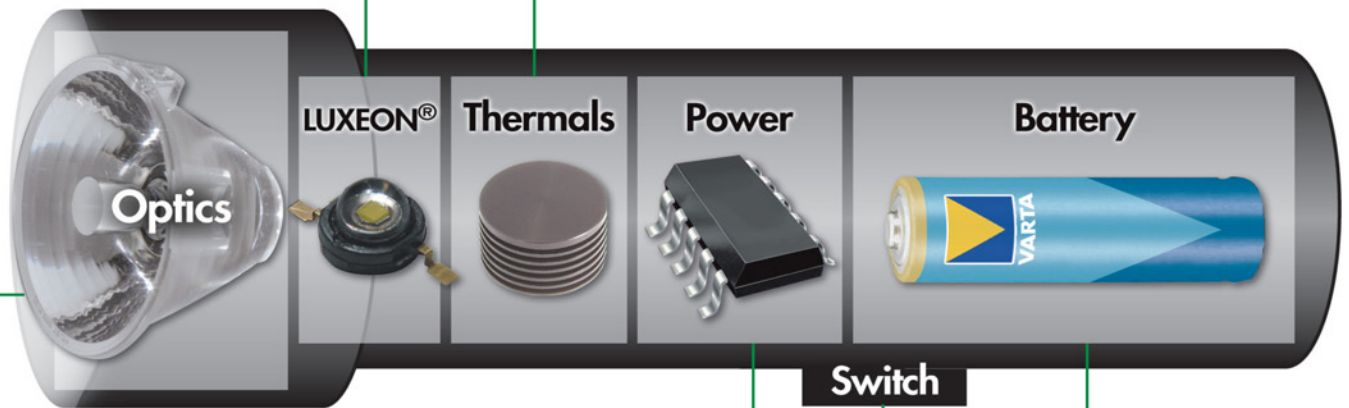
	Buck (4-cell)		Boost (2-cell)			Buck-Boost (3-cell)	
	Sipex	STMicroelectronics	Sipex	STMicroelectronics	National Semiconductor	ON Semiconductor	STMicroelectronics
I <sub>out</sub> (max) (A)	500	800	500	500	1000	500	600
V <sub>in</sub> (min) (V)	2.7	2.2	0.5	0.6	0.8	2.7	2.7
V <sub>in</sub> (max) (V)	5.5	5.5	4.5	5.5	14	5.5	5.5
V <sub>out</sub> (max) (V)	5.5	5.5	5.2	5.2	14	5.5	6.0
Part #	SP6655	L6926	SP6641B	L6920	LM2623A	NCP5030	STCF02
Remarks	high efficiency	high efficiency	low cost	high efficiency	high output current	input voltage flexibility	input voltage flexibility
Reference Design	available	available	available	available	available	available	available
Line	LUXEON® PWT, LUXEON® I, LUXEON® K2	LUXEON® PWT, LUXEON® I, LUXEON® III, LUXEON® K2	LUXEON® PWT, LUXEON® I, LUXEON® K2	LUXEON® PWT, LUXEON® I, LUXEON® K2	LUXEON® PWT, LUXEON® I, LUXEON® III, LUXEON® K2	LUXEON® PWT, LUXEON® I, LUXEON® K2	LUXEON® PWT, LUXEON® I, LUXEON® III, LUXEON® K2

Note: alternate power solutions (with reference designs) available upon request

# DESIGNERS GUIDE

## Thermal Management

Ask us about our off-the-shelf thermal solutions, as well as our enabling relationships with Certified Solutions Partners.



## Switches, Batteries & Off-the-shelf LED Drivers

	Switch		Battery Holder		Batteries		LED Drivers
	ITT Cannon	ITT Cannon	Keystone	Keystone	Varta	Rayovac	LED Dynamics
Description	2-position slide	3-position slide	2-cell AA	4-cell AA	AA	AA	Vin < 3
Part #	OS102011MS2QN1	OS103011MS8QP1	2463	2478	4106210501	815-BULK	Micropuck-2009
Remarks	rocker switches also available	rocker switches also available	other form factors available	other form factors available	other low cost batteries available	other low cost batteries available	ideal for prototyping



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### Asia

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lumileds.asia@FutureElectronics.com

## Typical Applications

- Flashlights
- Mining Lamps
- Head Lamps
- Bicycle Lights
- Diving Lights
- Lanterns
- Medical Lamps
- Weapon Lights
- Spot Lights



## Rugged, Solid State, Vibration Proof

Unlike bulbs, there are no fragile components to break, even when misused. LUXEON® LEDs are solid state devices that contain no moving parts, no toxic gases, and no filament. Your product can be sealed for life when you use LUXEON® LEDs – the need to replace a bulb is eliminated.

## ABCs of Light

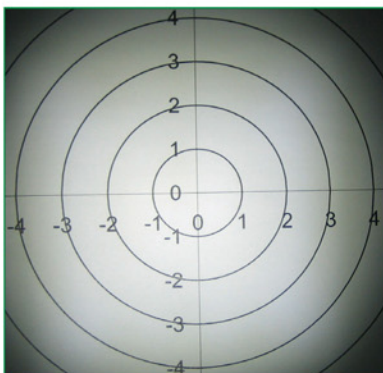
### Appearance

Lumileds' patented Conformal Coating Process ensures highly uniform white color, unlike other high power LEDs.

Conventional phosphor coating method	Lumileds conformal phosphor deposition process
Large color shift	Highly uniform white color

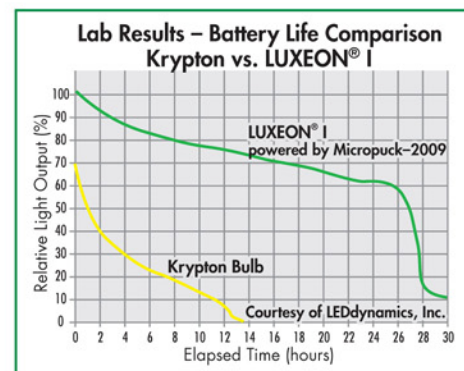
### Brightness / Beam Size

Nearly 100% of the light emitted from high power LUXEON® LEDs is directed, resulting in more efficient use of light when coupled to an optic than a krypton bulb, incandescent bulb or 5mm LED array.



### Consumption

LUXEON® LEDs are five times more efficient than incandescent light sources, significantly prolonging battery life.



LIGHT BY  
**LUXEON®**

**FRAEN Srl**  
Maximizing Light



**carclo plc**

**IMS**

**Sipex**

**ON**

**National Semiconductor**  
The Sight & Sound of Information

**ST**

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INTEGRATING LED TECHNOLOGY INTO SOLUTIONS THAT WORK

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