



# BOLB

Beyond Safe

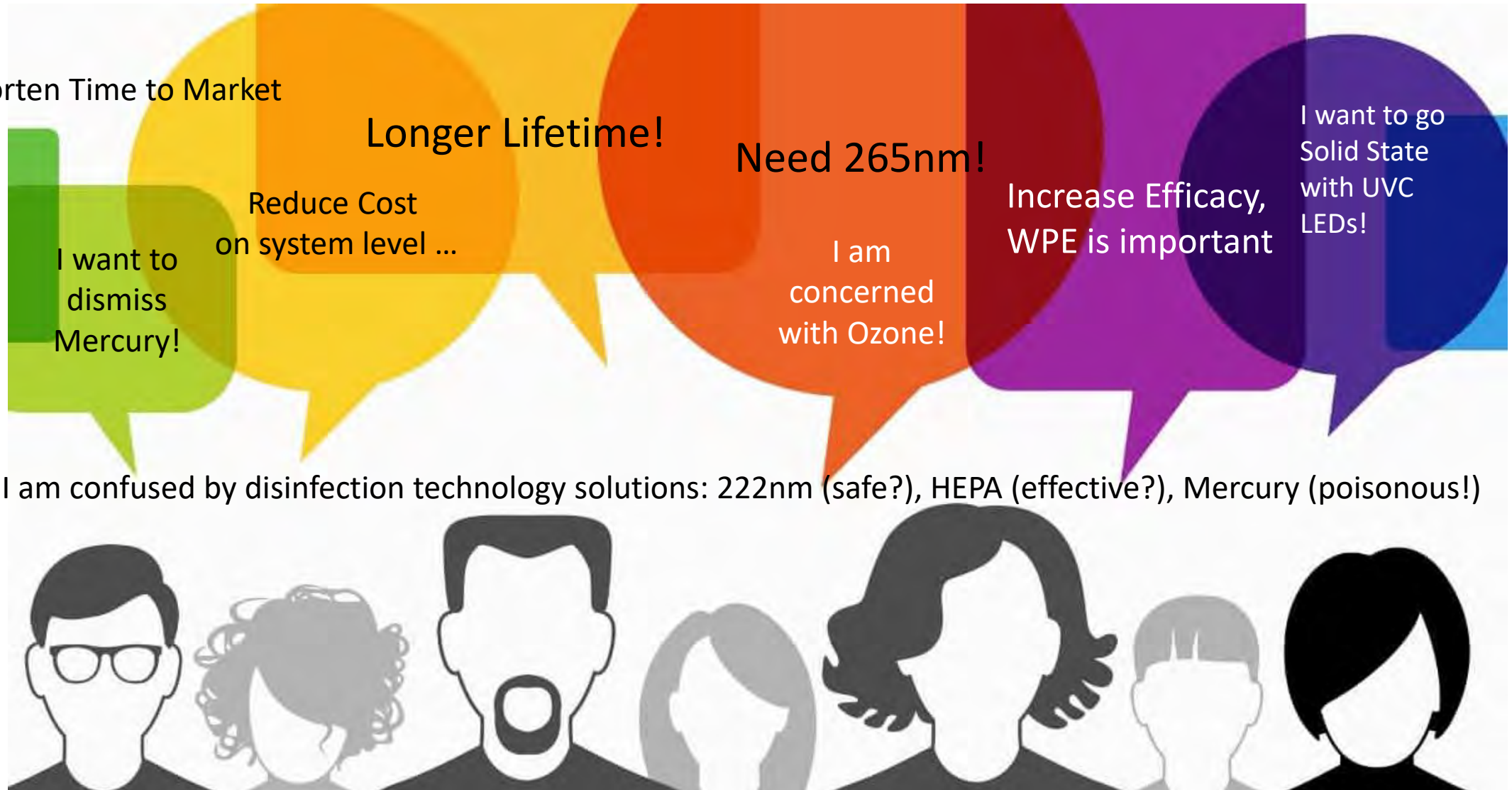
UVC LED S6060 265nm Release May 2022

Designed and Manufactured in Silicon Valley

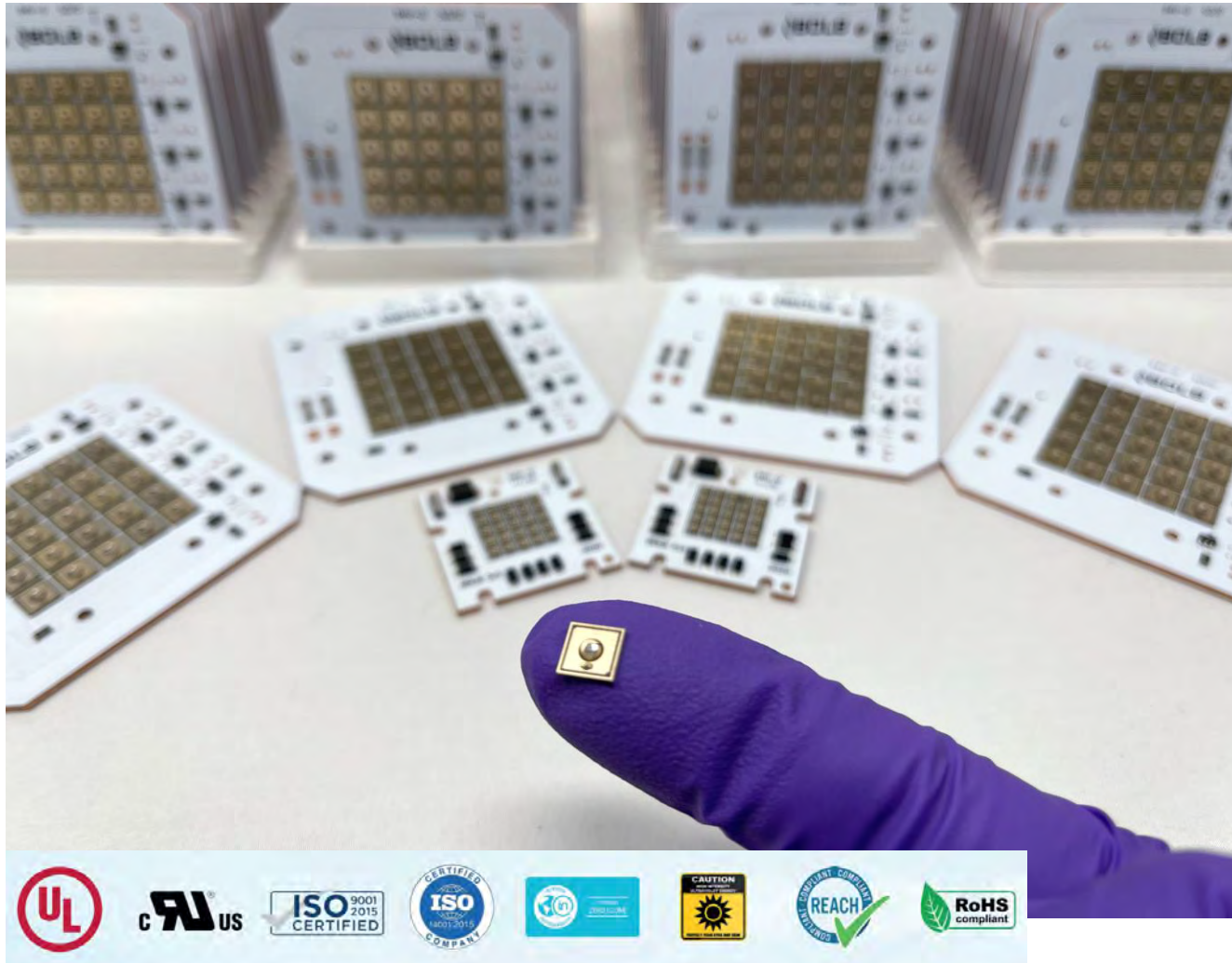
April 2022

CONFIDENTIAL – No Redistribution or Reproduction Permitted. ©2022 Bolb, Inc.

# Bolb Voice of the Customer – We Listen – We Act !



# Bolb Release of UVC LED S6060 in 265nm

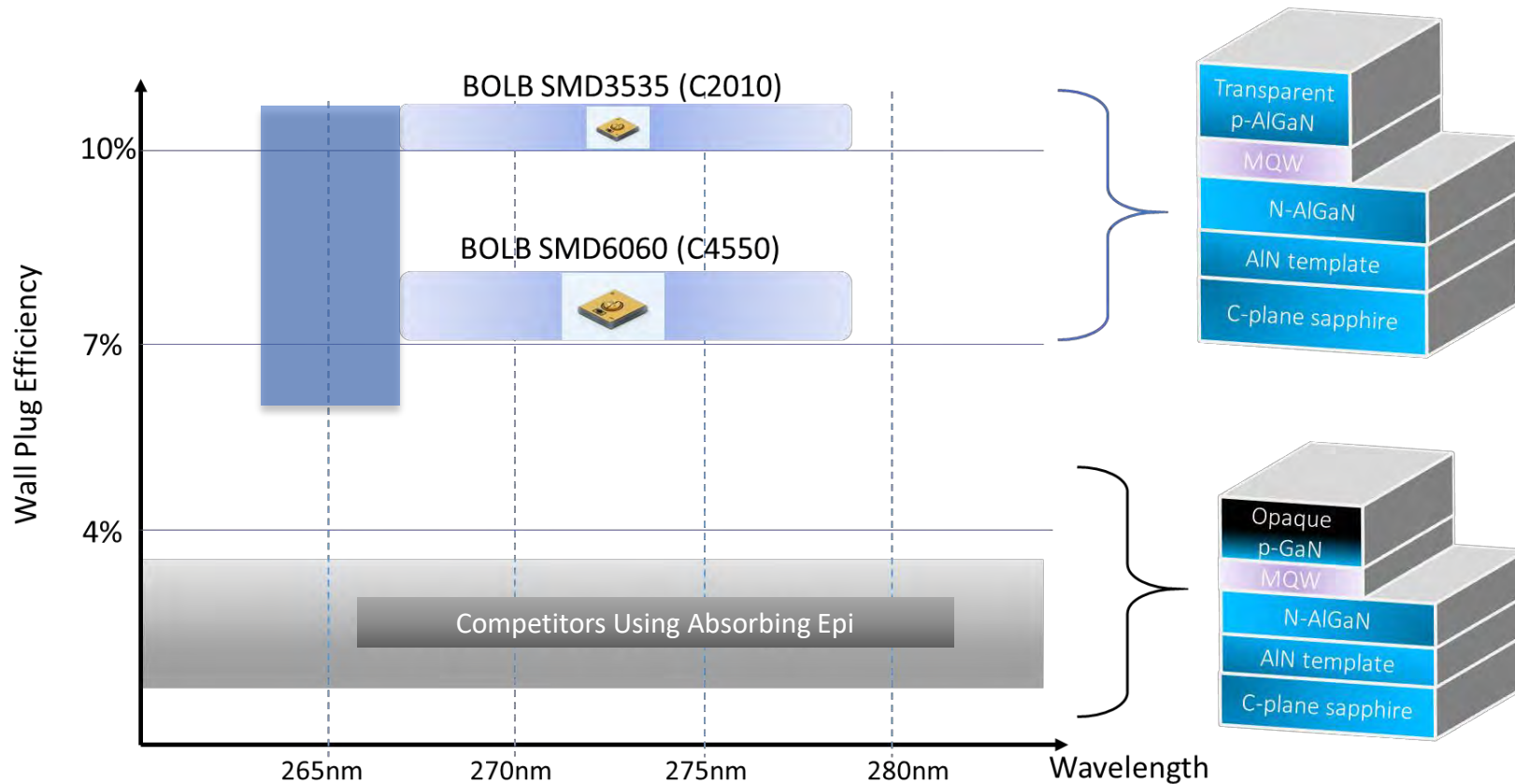


- S6060 industry standard package
- Up to 10% Wall Plug Efficiency\*
- Worlds Highest Performance UVC LED
- New 265nm typ. wavelength
- Min., typ. 100mW at 250mA
- Improved L70 Lifetime of up to 10,000 hrs.\*\*
- Zero Ozone certified
- UL listed
- ROHS and REACH certified
- Mass Production Availability
- Industry Leading \$/mW
- Standard Lead times 4-6 weeks (10...100k pcs.)
- 8-10 weeks (1M pcs.)
- Global Inventory

\*in S3535 package

\*\*L70 performance depends on usage conditions

# Bolb Technology Superiority – Foundation for Customer Success



- Emission-transparent epi unlocks the potential of >3.5x efficiency gain from 3% traditional UVC LEDs → 10%+ WPE
- Even at shorter wavelength such as 265nm
- Maintaining low and stable Forward Voltage
- New improved Chip and Package Designs enabling now L70 data of up to 10,000 hrs.

# Bolb UVC LED Portfolio and Services

## Surface Mount Devices (SMDs)

SMD6060, SMD6060-TL  
 100mW typical @ 250mA, 6.7% WPE  
 SMD3535, SMD2020



SMD 6060



SMD 3535



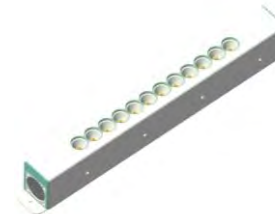
SMD 6060-TL

## SMD Modules

5x5 S6060 2500mW LOP  
 1x12 S6060 1200mW LOP  
 2x2 S6060 400mW LOP



BOLB 2P2S



BOLB iUVC™ 1x12 Module



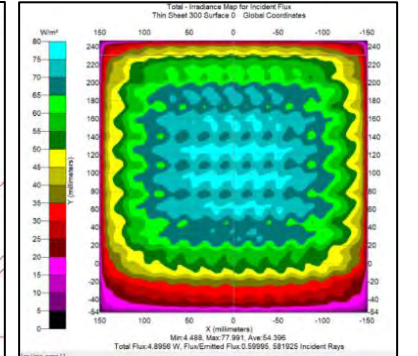
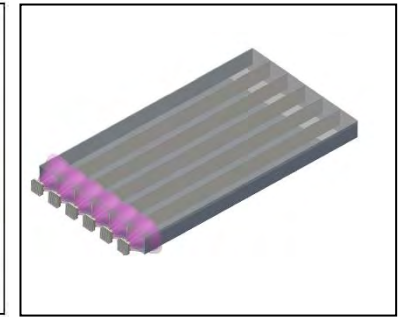
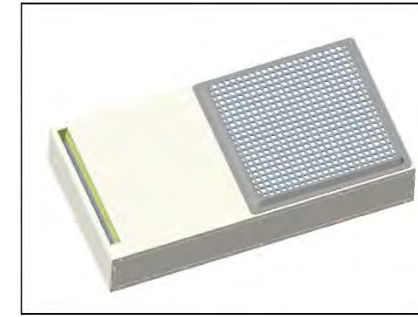
BOLB 4P3S



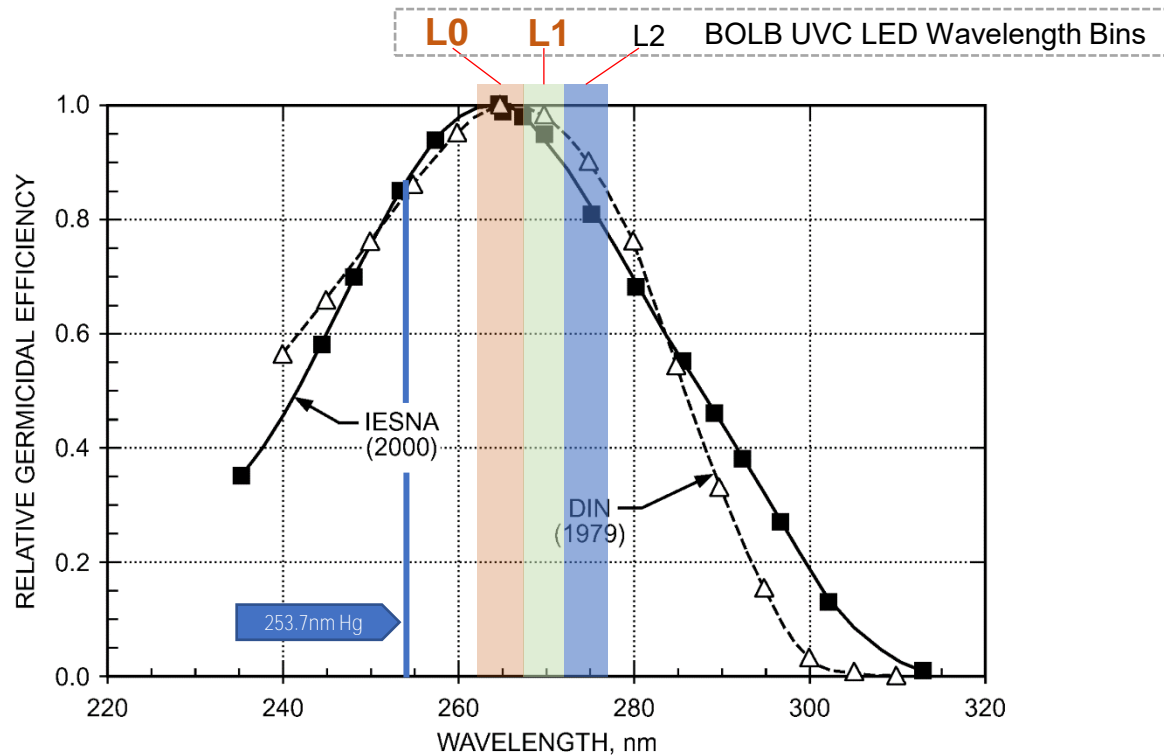
BOLB 5P5S

## Reference Designs

Turn-key solutions  
 Microbiology Tests, ODM Solutions



# Bolb Enhanced Germicidal Efficacy with 265nm UVC LEDs

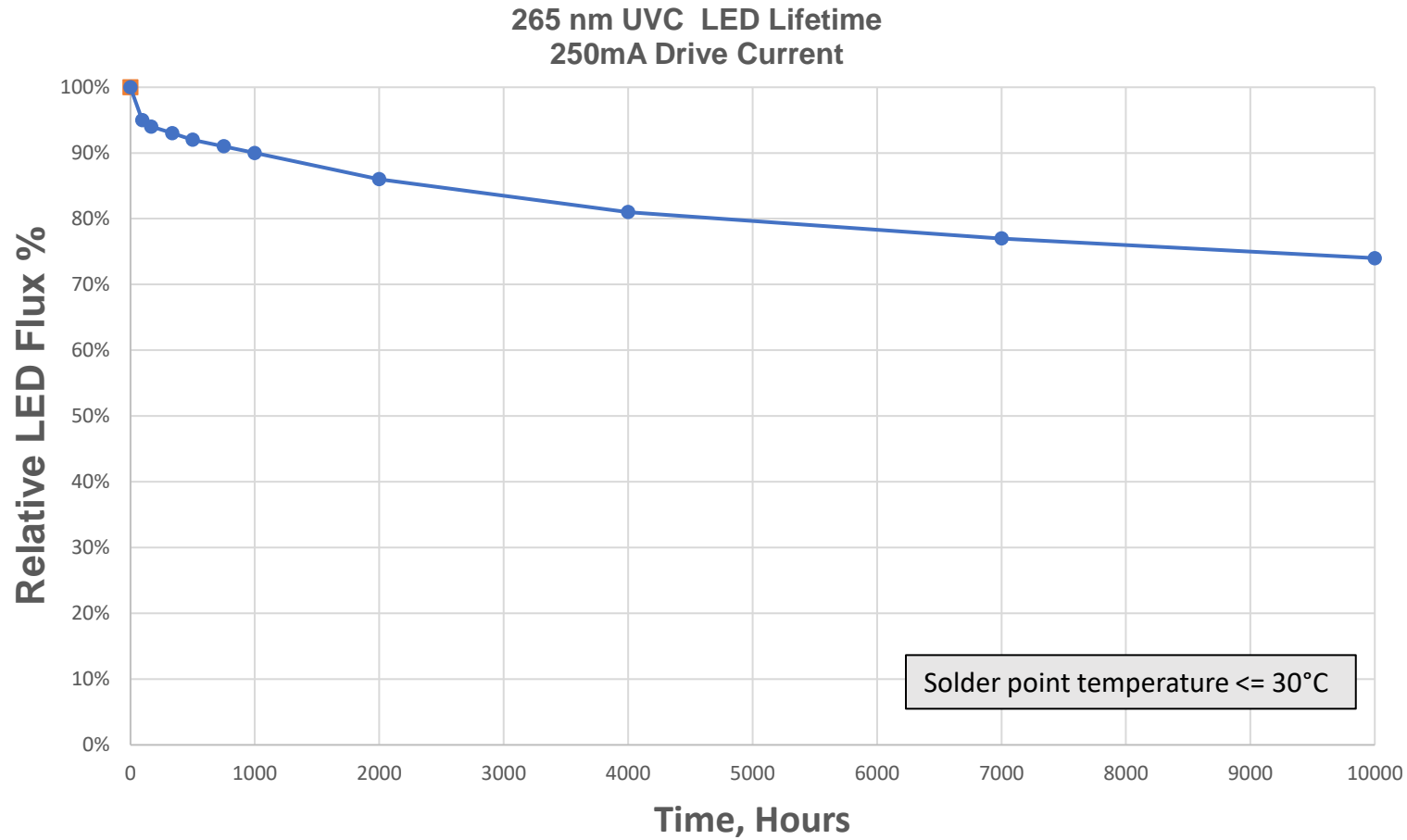


## Relative UV-C Germicidal Efficiency

Reference: ASHRAE HVAC Handbook Chapter 17 page 1

- The emission wavelength of Bolb's **new 265nm LEDs** corresponds to the photon absorption peak by the DNA and RNA of pathogens for highest UVC disinfection efficacy
- At the same irradiance levels, **265nm LEDs offer up to 20% higher inactivation rate** against pathogens compared to both mercury lamps (253.7nm) and longer wavelength LEDs
- Bolb's new 265nm S6060 UVC LEDs offered in 2 wavelengths selection bins\*
  - **L0: 263 – 268 nm**
  - **L1: 268 – 273 nm**
  - \*varying population in distribution, full distribution sale
  - L2: 273 – 278 nm (may become obsolete over time)

# Bolb Enhanced L70 capabilities



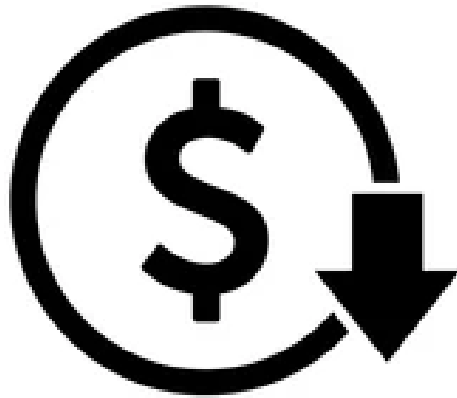
- $T_a=25^{\circ}\text{C}$
- $T_s$  Solder point temperature  $30^{\circ}\text{C}$
- 40% RH Ambient Lifetime Test
- Average performance 90-110mW packaged @ 250mA
- $V_f$  change  $\leq +0.3\text{V}$  after 5,000 hrs.

- \*Lifetime projection based on 2,000-hour test data at  $T_s=30^{\circ}\text{C}$  and TM-21 projection
- Actual performance depends on usage condition and can not be guaranteed



## Cost

Lower System  
Solution Cost



Fewer LEDs, simpler Optics,  
Driver, Thermal Design and  
Packaging ...

## Reliability

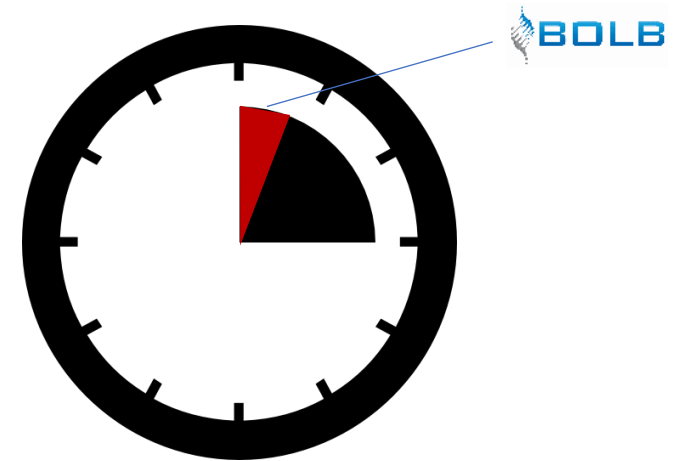
Highest System  
Reliability



Tested and Certified LED lifetime,  
Simpler Designs with Lesser Components,  
Robust Designs result into Improved  
System Reliability

## Performance

Shortest  
Disinfection Times



Bolb, Inc LEDs, Optimized System  
Efficiencies result into Reduced,  
and Certifiable Disinfection Times



# Bolb Where to Buy



**WPG North America**  
 WPG Americas  
 Rob Gray, Director, Lighting & Power Solutions  
 +1 704-749-4575  
[rob.gray@wpgamericas.com](mailto:rob.gray@wpgamericas.com)  
[www.wpgamericas.com](http://www.wpgamericas.com)



**US West Coast**  
 Griot Group, Inc.  
 David Butts  
[dbutts@griotgroup.com](mailto:dbutts@griotgroup.com)  
[www.griotgroup.com](http://www.griotgroup.com)  
 +1 503 726-4445



Bolb, Inc.  
 Headquarters  
 California  
[www.bolb.co](http://www.bolb.co)  
[info@bolb.co](mailto:info@bolb.co)  
 +1 650 823 8593



**USA**  
 LASER COMPONENTS USA, Inc.  
 Nicholas Connelly  
 +1 518 380-1696  
[n.connolly@laser-components.com](mailto:n.connolly@laser-components.com)  
[www.laser-components.com](http://www.laser-components.com)

**Europe**  
 LASER COMPONENTS GmbH  
 Dr. Olga Stroh-Vasenev  
 +49 152 09093023  
[o.stroh-vasenev@lasercomponents.com](mailto:o.stroh-vasenev@lasercomponents.com)  
[www.lasercomponents.com](http://www.lasercomponents.com)



**Nordics / Baltic**  
 ELGOOD  
 Joonas Holviala  
 +358 44 569 3943  
[www.elgood.fi](http://www.elgood.fi)  
[joonas.holviala@elgood.fi](mailto:joonas.holviala@elgood.fi)



**UK**  
 ANGLIA  
 +44 1945 47 47 4  
[www.anglia.com](http://www.anglia.com)  
[info@anglia.com](mailto:info@anglia.com)



Bolb, Inc.  
 Europe Office  
 Munich, Germany  
[www.bolb.co](http://www.bolb.co)  
[p.blanc@bolb.co](mailto:p.blanc@bolb.co)  
 +49 1765 291 9621



**Germany/DACH/Benelux**  
 LUMITRONIX® LED-Technik GmbH  
 +49 7471 96014-10  
[www.lumitronix.com](http://www.lumitronix.com)  
[mail@lumitronix.com](mailto:mail@lumitronix.com)



**ISRAEL**  
 Bi-Pol Electro-Optics  
 David Poleg  
 +972 52 5877755  
[david@bi-pol.com](mailto:david@bi-pol.com)  
[www.Bi-Pol.com](http://www.Bi-Pol.com)



**ITALY**  
 Electronic Center SpA  
 Paolo Crippa  
 +39 342 61 33 874  
[p.crippa@electroniccenter.it](mailto:p.crippa@electroniccenter.it)  
<https://www.electroniccenter.it/>



**SPAIN/PORTUGAL**  
 Sutelco  
 Gonzalo Guerrero Prado  
 +34 91 355 86 03  
[gonzalo@sutelco.com](mailto:gonzalo@sutelco.com)  
[www.sutelco.com](http://www.sutelco.com)



**China**  
 ALLTEK  
 Mark Jia  
 +13316879395  
[markjia@alltek.com](mailto:markjia@alltek.com)  
[www.alltek.com](http://www.alltek.com)



**Taiwan**  
 Prohubs International Corp.  
 New Taipei City 221, Taiwan (R.O.C.)  
 Tel : 886-2-26988800  
 Fax : 886-2-26988801  
 email : [info@prohubs.com.tw](mailto:info@prohubs.com.tw)  
[https://www.prohubs.com.tw/english/about\\_location.htm](https://www.prohubs.com.tw/english/about_location.htm)



**UV-C tech**  
 South East Asia  
 Thang Nguyen  
 +84903774474  
[jack@congngheuvc.com](mailto:jack@congngheuvc.com)  
[www.congngheuvc.com](http://www.congngheuvc.com)



---

# Bolb Our Applications and Sales Team guides you to Success

---



**Frank Harder**  
CRO  
[f.harder@bolb.co](mailto:f.harder@bolb.co)



**Maria Topete**  
Applications Director  
[maria.topete@bolb.co](mailto:maria.topete@bolb.co)



**Paul Blanc**  
Sales Director Europe  
[p.blanc@bolb.co](mailto:p.blanc@bolb.co)



**Justin Nealis**  
Sales Director North America  
[justin@bolb.co](mailto:justin@bolb.co)

**Contact us Today!**



# BOLB

Beyond Safe

UVC LED S6060 265nm Release May 2022

Designed and Manufactured in Silicon Valley

April 2022

CONFIDENTIAL – No Redistribution or Reproduction Permitted. ©2022 Bolb, Inc.