

## Product Change Notice

**Issue Date: 5 August 2008**

### **Change Type:**

MAJOR CHANGE

Please be advised that Avago Technologies is making the following product change on the effective date noted for the products listed below:

1. Assembly Related Change: Change to different contract manufacturer.
2. Assembly Related Change: Lead plating material.
3. Mark and Pack Related Change: Storage temperature.

### **Parts Affected:**

The categories of products affected by the change are:

AllInGaP LED Lamps  
AllInGaP II LED Lamps  
Extra High Brightness AllInGaP LED Lamps  
Extra High Brightness InGaN LED Lamps

Please refer to Addendum for detailed part numbers affected by this change.

### **Description and Extent of Change:**




1. Change manufacturing site from Malaysia to China and Thailand.
2. Products built in China and Thailand will have Tin (Sn) terminal finish while products built in Malaysia have SnAgCu terminal finish.
3. AllInGaP Through Hole Lamps storage temperature range specification will be changed from -40°C to 120°C to -40°C to 100°C.

### **Reasons for Change:**

1. To ensure consistency of supply and on-time delivery to customer.
2. To change to industry standard terminal finish.
3. To standardize storage temperature requirement for Avago LEDs.

**Effect of Change on Fit, Form, Function, Quality, or Reliability:**

There is no change on fit and function. There will be a change in form due to the change of terminal finish to Sn plated leads. The surface appearance difference of the Sn plated leads and SnAgCu plated leads are as shown below.

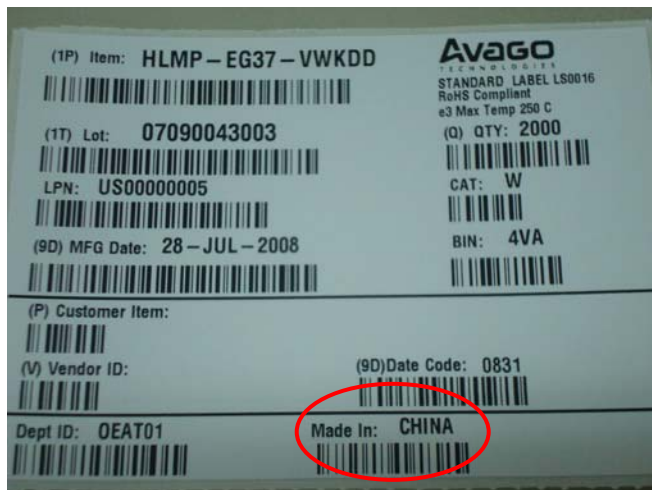
Existing	China	Thailand
		
SnAgCu terminal finish	Sn terminal finish	Sn terminal finish

**Effective Date of Change:**

Effective from 1<sup>st</sup> October 2008, shipments will be from the new manufacturing sites. During this period, Avago will continue to ship lamps from Malaysia site. There may be mixed shipments between current site and new sites.

Parts identification:

(i) Parts manufactured in China will state "Made In: China" as indicated below.



(ii) Parts manufactured in Thailand will state "Made In: Thailand" as indicated below.



**Qualification Data:**

**1. Thailand Site Qualification Summary**

HLMP - AG62, HLMP - AL06, HLMP - CB34, HLMP – EL15, HLMP – EL35, HLMP - ED31

Environmental Test	Reference	Stress Profile	Units Tested	Units Failed
Temperature Cycle	Avago Std.	-40/100°C 30/5min Dwell/Transfer, 100 cyc	500 x 6	0
Solder Heat Resistance	JESD22 (B106)	260°C for 10s, 2x	50 x 6	0
Solderability Test	JESD22(B102D)	Steam age for 8hrs, then solder dip at 245°C for 5 sec	30 x 2	0
Salt Spray	JESD22 (A107)	35°C, 5% Salt Concentration, 48 hrs	30 x 2	0

Note: Solderability Test & Salt Spray tests were conducted on 2 representative packages : HLMP-AG62 & HLMP-ED31

HLMP - AG62, HLMP - AL06, HLMP - CB34, HLMP – EL15, HLMP - EL35, HLMP-ED31

Operating Life Test	Reference	Stress Profile	Units Tested	Units Failed
High Humidity High Temperature Storage Life	JESD22 (A101)	85°C, 85% RH, 500 hrs	56 x 6	0
High Humidity High Temperature Operating Life	JESD22 (A101)	85°C, 85% RH, Max derated Current, 500 hrs	56 x 6	0
High Temperature Operating Life	JESD22 (A108)	55°C, Max derated Current, 500 hrs	56 x 6	0

Summary: All the qualification vehicles submitted to reliability tests passed Avago's stringent reliability tests requirements. There were no functional defects observed in the tests run above.

Note: The Qualification Vehicles picked:

- HLMP-AG62
- HLMP-AL06
- HLMP-CB34
- HLMP-EL35
- HLMP-EL15
- HLMP-ED31

## 2. China Site Qualification Summary

HLMP – CB34, HLMP – KL00, HLMP – FL05, HLMP – EL15, HLMP – EL25, HLMP – EL35

Environmental Test	Reference	Stress Profile	Units Tested	Units Failed
Temperature Cycle	Avago Std.	-40/100°C 30/5min Dwell/Transfer, 100 cyc	500 x 6	0
Solder Heat Resistance	JESD22 (B106)	260°C for 10s, 2x	30 x 6	0
Solderability Test	JESD22(B102D)	Steam age for 8hrs, then solder dip at 245°C for 5sec	30X 2	0
Salt Spray	JESD22 (A107)	35°C, 5% Salt Concentration, 48 hrs	30 x 2	0

Note: Solderability Test & Salt Spray tests were conducted on 2 representative packages : HLMP-CB34 & HLMP-EL35

HLMP – CB34, HLMP – KL00, HLMP – FL05, HLMP – EL15, HLMP – EL25, HLMP – EL35

Environmental Test	Reference	Stress Profile	Units Tested	Units Failed
High Humidity High Temperature Storage Life	JESD22 (A101)	85°C, 85% RH, 500 hrs	56 x 6	0
High Humidity High Temperature Operating Life	JESD22 (A101)	85°C, 85% RH, Max derated Current, 500 hrs	56 x 6	0
High Temperature Operating Life	JESD22 (A108)	55°C, Max derated Current, 500 hrs	56 x 6	0

Summary: All the qualification vehicles submitted to reliability tests passed Avago's stringent reliability tests requirements. There were no functional defects observed in the tests run above.

Note: Qualification Vehicles picked

HLMP-CB34  
 HLMP-KL00  
 HLMP-FL05  
 HLMP-EL15  
 HLMP-EL25  
 HLMP-EL35

Product technical datasheet and reliability datasheet will be updated by 1<sup>st</sup> Oct 2008.

These changes have been reviewed and approved by Avago Technologies engineers and managers per Avago Technologies procedure: Change Control and Customer Notification, A-5962-6052-80.

Please contact your Avago Technologies field sales engineer or Contact Center (<http://www.avagotech.com/contact/>) for any questions or support requirements. Please return any response as soon as possible, but not to exceed 30 days.

## Addendum

### AllnGaP LED Lamps:

HLMA-EL20-H0000	HLMP-EG55-JK0DU	HLMP-EL15-UX200	HLMP-EL55-JKLDD
HLMA-KH00-J0000	HLMP-EH08-UX000	HLMP-EL15-UX2DD	HLMP-EL55-LP000
HLMA-KL00-I0000	HLMP-EH08-WZ000	HLMP-EL15-UX400	HLMP-EL56-GHKDD
HLMA-KL00-MQ000	HLMP-EH08-X1000	HLMP-EL15-UX4DD	HLMP-GG10-U0000
HLMA-KL05-I0000	HLMP-EH08-Y2000	HLMP-EL15-UXKDD	HLMP-GG15-R0000
HLMP-AG01-K00DD	HLMP-EH08-Y20DD	HLMP-EL15-VW000	HLMP-GH08-U0000
HLMP-AG01-M00DD	HLMP-EH10-UX000	HLMP-EL15-VW2DD	HLMP-GL15-S0000
HLMP-AL01-L00DD	HLMP-EH10-WZ000	HLMP-EL15-VW400	HLMP-GL32-P0002
HLMP-AL01-LP000	HLMP-EH10-X10DD	HLMP-EL15-VW4DD	HLMP-HG54-JK0DD
HLMP-AL01-N00DD	HLMP-EH10-Y2000	HLMP-EL15-VWKDD	HLMP-HG54-JK0DU
HLMP-AL01-NR000	HLMP-EH10-Y20DD	HLMP-EL15-VY000	HLMP-HG54-KL0DU
HLMP-AL01-PQKDD	HLMP-EH15-QT002	HLMP-EL15-VY0DD	HLMP-HL54-LMKDD
HLMP-AL11-NR000	HLMP-EH15-RU000	HLMP-EL15-VYK00	HLMP-HL54-LMKDU
HLMP-BG01-LM000	HLMP-EH15-RU0DD	HLMP-EL15-VYKDD	HLMP-HL54-MNKDU
HLMP-BG01-MN000	HLMP-EH15-TW000	HLMP-EL15-WZ000	HLMP-HL55-LMKDD
HLMP-BG01-MN0DD	HLMP-EH15-UX000	HLMP-EL15-WZKDD	HLMP-HL55-MQ000
HLMP-BJ11-M00DD	HLMP-EH17-SV0DD	HLMP-EL17-M0000	HLMP-LH11-KL0DD
HLMP-BL01-NR000	HLMP-EH17-TW000	HLMP-EL17-PS000	HLMP-LL11-KN000
HLMP-BL11-KN000	HLMP-EH17-UX000	HLMP-EL17-QTKDD	HLMP-LL11-KN0DD
HLMP-BL11-KN0DD	HLMP-EH24-PS000	HLMP-EL17-SV000	HLMP-LL11-MQ000
HLMP-BL11-KN0ZZ	HLMP-EH24-QT000	HLMP-EL17-TV4DD	HLMP-LL11-MQ0DD
HLMP-BL11-NR000	HLMP-EH24-RU000	HLMP-EL17-TW000	HLMP-LL11-NR0ZZ
HLMP-DL50	HLMP-EH24-RU0DD	HLMP-EL17-UX000	HLMP-LL41-N00DD
HLMP-DL50#002	HLMP-EH24-SV000	HLMP-EL17-VW400	HLMP-ML11-KL0DD
HLMP-DL50-VWPDD	HLMP-EH24-SV0DD	HLMP-EL17-VW4DD	HLMP-ML11-M0000
HLMP-DL51#002	HLMP-EH26-PS000	HLMP-EL17-VWKDD	HLMP-ML11-M00DD
HLMP-DL51#2DD	HLMP-EH26-PS002	HLMP-EL17-VWKZZ	HLMP-ML11-MNLDD
HLMP-DL51-VWPDD	HLMP-EH26-SV000	HLMP-EL17-VY000	HLMP-ML11-N00DD
HLMP-EG08-T0000	HLMP-EH30-MQ000	HLMP-EL17-VYK00	HLMP-ML11-NR0ZZ
HLMP-EG08-VY000	HLMP-EH30-NR0DD	HLMP-EL24-L0000	HLMP-RG10-JM000
HLMP-EG08-WZ000	HLMP-EH30-PS000	HLMP-EL24-MQ000	HLMP-RL10-LMLDD
HLMP-EG08-WZ0DD	HLMP-EH30-QT000	HLMP-EL24-NR000	HLMP-RL10-LP000
HLMP-EG08-X1000	HLMP-EH30-RU000	HLMP-EL24-PS000	HLMP-RL10-LP0DD
HLMP-EG08-X10DD	HLMP-EH32-MQ000	HLMP-EL24-PS0DD	HLMP-RL10-MP0DD
HLMP-EG08-Y2000	HLMP-EH32-NR0DD	HLMP-EL24-PSA00	HLMP-RL10-MQLDD
HLMP-EG08-Y20DD	HLMP-EH32-QT000	HLMP-EL24-PSKZZ	HLMP-SG10-JM000
HLMP-EG08-YZ000	HLMP-EH32-RU000	HLMP-EL24-QR000	HLMP-SG10-JM0DD
HLMP-EG08-YZ0DD	HLMP-EJ08-WZ000	HLMP-EL24-QRK00	HLMP-SL10-HL0DD
HLMP-EG08-Z2000	HLMP-EJ08-X1000	HLMP-EL24-QS400	HLMP-SL10-LM0DD
HLMP-EG08-Z20DD	HLMP-EJ08-Y2000	HLMP-EL24-QT000	HLMP-SL10-LMKDD
HLMP-EG10-T0000	HLMP-EJ10-X1000	HLMP-EL24-QT0DD	HLMP-SL10-LMLDD
HLMP-EG10-WZ000	HLMP-EJ10-XZ0DD	HLMP-EL24-QTK00	HLMP-SL10-LP000
HLMP-EG10-X1000	HLMP-EJ15-PS000	HLMP-EL24-QTKDD	HLMP-WG02
HLMP-EG10-X10DD	HLMP-EJ15-QT000	HLMP-EL24-RU000	HLMP-WL02
HLMP-EG10-Y2000	HLMP-EJ15-RU000	HLMP-EL24-RUK00	QLMA-DG96#2DD
HLMP-EG10-Y20DD	HLMP-EJ15-RU0DD	HLMP-EL24-STKDD	QLMA-DG99#2DD
HLMP-EG10-Z2000	HLMP-EJ15-SV000	HLMP-EL24-SU400	QLMA-DJ99#2DD

HLMP-EG15-N0000	HLMP-EJ15-SV0DD	HLMP-EL24-SUK00	QLMA-DL39
HLMP-EG15-PS000	HLMP-EJ17-QT000	HLMP-EL24-SV000	QLMA-DL39-K0KDD
HLMP-EG15-QT000	HLMP-EJ17-SV000	HLMP-EL24-SV2DD	QLMA-DL87-KM0DD
HLMP-EG15-QT0DD	HLMP-EJ24-QT000	HLMP-EL24-SVK00	QLMA-DL89
HLMP-EG15-RU000	HLMP-EJ24-SV0DD	HLMP-EL24-TW000	QLMA-DL91-M0MZO
HLMP-EG15-SV000	HLMP-EJ30-NR000	HLMP-EL24-TW0DD	QLMA-EL38#2DD
HLMP-EG15-TW000	HLMP-EJ30-NR0DD	HLMP-EL24-TW4DD	QLMA-EL39
HLMP-EG15-TW0DD	HLMP-EJ30-PS000	HLMP-EL24-TWK00	QLMA-EL39-K0KDD
HLMP-EG15-UX000	HLMP-EJ30-QR000	HLMP-EL24-TWKDD	QLMA-KH22-NP000
HLMP-EG15-UX0DD	HLMP-EJ30-QR0DD	HLMP-EL26-L0000	QLMA-KH22-OP000
HLMP-EG17-N0000	HLMP-EJ30-RU0DD	HLMP-EL26-PS000	QLMA-KH40
HLMP-EG17-QT000	HLMP-EJ32-PS000	HLMP-EL26-PS002	QLMA-KH40-N00DD
HLMP-EG17-RU0DD	HLMP-EJ32-PS0DD	HLMP-EL26-QT000	QLMA-KH48
HLMP-EG17-SV000	HLMP-EJ36-R0PDD	HLMP-EL26-QT002	QLMA-KJ49
HLMP-EG17-TW000	HLMP-EJ37-Q0PDD	HLMP-EL26-QT0DD	QLMA-KL39
HLMP-EG17-UX000	HLMP-EJ37-R0PDD	HLMP-EL26-RT0DD	QLMA-KL40-MNMDD
HLMP-EG24-M0000	HLMP-EL08-T0000	HLMP-EL26-RU000	QLMA-KL41#002
HLMP-EG24-PQ0DD	HLMP-EL08-VX4DD	HLMP-EL26-SV000	QLMA-KL42
HLMP-EG24-PS000	HLMP-EL08-VY000	HLMP-EL26-SV0DD	QLMA-KL43#2VD
HLMP-EG24-PS002	HLMP-EL08-VY0DD	HLMP-EL26-TW000	QLMA-KL46-MNLLDD
HLMP-EG24-PS0DD	HLMP-EL08-VY0YY	HLMP-EL26-TW0DD	QLMA-KL47
HLMP-EG24-PS0YY	HLMP-EL08-VY200	HLMP-EL26-TWKDD	QLMC-A009
HLMP-EG24-QT000	HLMP-EL08-VYK00	HLMP-EL26-TWKZZ	QLMJ-B008
HLMP-EG24-QT001	HLMP-EL08-VYKDD	HLMP-EL30-K0000	QLMP-EG46-JK0DD
HLMP-EG24-RS0DD	HLMP-EL08-WZ000	HLMP-EL30-LP000	QLMP-EG47-LM0DD
HLMP-EG24-RU000	HLMP-EL08-X1000	HLMP-EL30-LP0DD	QLMP-EG48-NR000
HLMP-EG24-RU0DD	HLMP-EL08-X10DD	HLMP-EL30-MQ000	QLMP-EG48-NR0DD
HLMP-EG24-SV000	HLMP-EL08-X1K00	HLMP-EL30-PQ000	QLMP-EG48-PR000
HLMP-EG24-SV0DD	HLMP-EL08-X1KDD	HLMP-EL30-PQ0DD	QLMP-EG50-NR0DD
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HLMP-EG26-PS000	HLMP-EL08-XYK00	HLMP-EL30-PR400	QLMP-EG95-QRZDD
HLMP-EG26-PS0DD	HLMP-EL08-XYKDD	HLMP-EL30-PS000	QLMP-EG98-GK000
HLMP-EG26-RU000	HLMP-EL08-Y20DD	HLMP-EL30-PS0DD	QLMP-EJ49-WZPDD
HLMP-EG26-RU0DD	HLMP-EL08-Y24DD	HLMP-EL30-PS0DU	QLMP-EJ49-WZPDF
HLMP-EG30-K0000	HLMP-EL08-Z2000	HLMP-EL30-PSK00	QLMP-EJ98-PR0ZZ
HLMP-EG30-KN000	HLMP-EL08-Z3K00	HLMP-EL30-PSKDD	QLMP-EJ98-PRZZZ
HLMP-EG30-KN0DD	HLMP-EL08-Z3L00	HLMP-EL30-PSM00	QLMP-EJ99-SVZDD
HLMP-EG30-LP0DD	HLMP-EL10-130DD	HLMP-EL30-QT000	QLMP-EJ99-SVZZZ
HLMP-EG30-MQ000	HLMP-EL10-13K00	HLMP-EL30-QT0DD	QLMP-EL14-VV2DD
HLMP-EG30-MQ0DD	HLMP-EL10-T0000	HLMP-EL30-QTK00	QLMP-EL14-VV4DD
HLMP-EG30-NQ000	HLMP-EL10-VY000	HLMP-EL30-QTKDD	QLMP-EL14-WW2DD
HLMP-EG30-NQ0DD	HLMP-EL10-VY0DD	HLMP-EL30-ST0DD	QLMP-EL14-WW4DD
HLMP-EG30-NR000	HLMP-EL10-VYKDD	HLMP-EL30-ST4DD	QLMP-EL36-RR2DD
HLMP-EG30-NR0DD	HLMP-EL10-WXKDD	HLMP-EL30-STK00	QLMP-EL36-RR4DD
HLMP-EG30-PQ000	HLMP-EL10-WZ0DD	HLMP-EL30-STKDD	QLMP-EL36-SS2DD
HLMP-EG30-PQ0DD	HLMP-EL10-X1000	HLMP-EL30-SU400	QLMP-EL36-SS4DD
HLMP-EG30-PQ0DU	HLMP-EL10-X10DD	HLMP-EL30-SU4DD	QLMP-EL43-RRP00
HLMP-EG30-PR000	HLMP-EL10-X1K00	HLMP-EL30-SUKDD	QLMP-EL47-MQKDD
HLMP-EG30-PS000	HLMP-EL10-X1KDD	HLMP-EL30-SV000	QLMP-EL49-PSKDD
HLMP-EG30-PS0DD	HLMP-EL10-X1LDD	HLMP-EL30-SVK00	QLMP-EL50-PSKDD
HLMP-EG30-QT000	HLMP-EL10-Z1K00	HLMP-EL30-SVKDD	QLMP-EL59-H0KDD
HLMP-EG30-QT0DD	HLMP-EL10-Z1L00	HLMP-EL32-K0000	QLMP-EL87-T0PDD

HLMP-EG30-RS0DD	HLMP-EL15-PS000	HLMP-EL32-NR000	QLMP-EL88-T0LDD
HLMP-EG32-K0000	HLMP-EL15-PS0DD	HLMP-EL32-PQ0DD	QLMP-EL88-T0PDD
HLMP-EG32-MQ000	HLMP-EL15-QSK00	HLMP-EL32-PS000	QLMP-EL90-PS0DD
HLMP-EG32-MQ0DD	HLMP-EL15-QT000	HLMP-EL32-PS002	QLMP-EL94-MNLDD
HLMP-EG32-NR000	HLMP-EL15-QT0DD	HLMP-EL32-PS0DD	QLMP-EL97-LM000
HLMP-EG32-NR0DD	HLMP-EL15-RSKDD	HLMP-EL32-QT000	QLMP-EL97-PS000
HLMP-EG32-PS000	HLMP-EL15-RU000	HLMP-EL32-QT0DD	QLMP-LH99-KM0ZZ
HLMP-EG32-QT000	HLMP-EL15-SV000	HLMP-EL32-RU0DD	QLMP-ML99-MM0DD
HLMP-EG32-QT0DD	HLMP-EL15-TV400	HLMP-EL32-SUKDD	QLMP-ML99-NN0DD
HLMP-EG32-RU0DD	HLMP-EL15-TW000	HLMP-EL32-SV000	QLMP-RL99-LPKDD
HLMP-EG55-GK0DD	HLMP-EL15-TW0DD	HLMP-EL55-GHKDD	QLMP-SL99-MNLDD
HLMP-EG55-HJ000	HLMP-EL15-TWK00	HLMP-EL55-GK0DD	QLMP-UL26#002
HLMP-EG55-HJ0DD	HLMP-EL15-TWKDD	HLMP-EL55-HJKDD	QLMP-UL99#001
HLMP-EG55-HJ0DU	HLMP-EL15-UX000	HLMP-EL55-HJKDU	
HLMP-EG55-JK0DD	HLMP-EL15-UX0DD	HLMP-EL55-JKKDU	

**AllnGaP II LED Lamps:**

HLMP-AD06-NSTDD	HLMP-ED27-SV0DD	HLMP-EL18-XX4DD	HLMP-SL11-MNKDD
HLMP-AD06-P0000	HLMP-ED27-SVTDD	HLMP-EL18-XYK00	QLMP-AD49-P00FE
HLMP-AD06-P00DD	HLMP-ED27-TUTDD	HLMP-EL18-XYRDD	QLMP-AD83-Y1TZZ
HLMP-AD06-P0T00	HLMP-ED27-TVTDD	HLMP-EL25-RU000	QLMP-AD84-XXTDD
HLMP-AD06-PQ0DD	HLMP-ED27-TW000	HLMP-EL25-SV000	QLMP-AD86-RRTDD
HLMP-AD06-RS0DD	HLMP-ED27-TW0DD	HLMP-EL25-SV0DD	QLMP-AD86-SSTDD
HLMP-AD06-RS0ZZ	HLMP-ED27-TWT00	HLMP-EL25-SVK00	QLMP-AD89-STTDD
HLMP-AD06-RSTDD	HLMP-ED27-TWTDD	HLMP-EL25-TW000	QLMP-AD93-XZPZZ
HLMP-AD06-RSTZZ	HLMP-ED27-UWTDD	HLMP-EL25-TW0DD	QLMP-AD94-SS0DD
HLMP-AD06-STTDD	HLMP-ED27-VXTDD	HLMP-EL25-TW4DD	QLMP-AD94-SSTDD
HLMP-AD16-P0000	HLMP-ED31-Q0000	HLMP-EL25-TWK00	QLMP-AD94-TT0DD
HLMP-AD16-P0002	HLMP-ED31-Q0T00	HLMP-EL25-TWKDD	QLMP-AD94-TTTDD
HLMP-AD16-QTTDD	HLMP-ED31-QT000	HLMP-EL25-TWR00	QLMP-AD95-STTZZ
HLMP-AD16-RS000	HLMP-ED31-QTT00	HLMP-EL25-TWSDD	QLMP-AD96-RR0DD
HLMP-AD16-RS0DD	HLMP-ED31-QTTDD	HLMP-EL25-UV400	QLMP-AD96-SS0DD
HLMP-AD16-RS0ZZ	HLMP-ED31-RU000	HLMP-EL25-UVUZZ	QLMP-AD97-WY0ZZ
HLMP-AD16-RSTDD	HLMP-ED31-RUT00	HLMP-EL25-UX000	QLMP-AD99-QRZZZ
HLMP-AD16-RUT00	HLMP-ED31-ST000	HLMP-EL25-UX0DD	QLMP-AL86-RR2DD
HLMP-AD16-ST000	HLMP-ED31-ST0DD	HLMP-EL25-VXSDD	QLMP-AL86-RR4DD
HLMP-AD16-ST0DD	HLMP-ED31-SUT00	HLMP-EL25-VXY00	QLMP-AL86-RR6DD
HLMP-AD16-STTDD	HLMP-ED31-SUTDD	HLMP-EL27-SV000	QLMP-AL86-SS2DD
HLMP-AD30-UX000	HLMP-ED31-SV000	HLMP-EL27-SVRDD	QLMP-AL86-SS4DD
HLMP-AD31-UX000	HLMP-ED31-SV0DD	HLMP-EL27-TW000	QLMP-AL86-SS6DD
HLMP-AD31-UX0DD	HLMP-ED31-SVT00	HLMP-EL27-TW0DD	QLMP-AL86-TT4DU
HLMP-AD60-X1TZZ	HLMP-ED31-SVT02	HLMP-EL27-TWK00	QLMP-AL86-TT6DU
HLMP-AD60-XYTDD	HLMP-ED31-SVTDD	HLMP-EL27-TWKDD	QLMP-AL89-RSRDD
HLMP-AD60-YZ0ZZ	HLMP-ED31-TV0DD	HLMP-EL27-TWRDD	QLMP-AL95-RSSZZ
HLMP-AD60-YZTZZ	HLMP-ED31-TVT00	HLMP-EL27-UWRDD	QLMP-AL96-RR2DD
HLMP-AD60-Z1TZZ	HLMP-ED31-TVTDD	HLMP-EL27-UXRDD	QLMP-AL96-RR4DD
HLMP-AD61-X10ZZ	HLMP-ED31-UV0DD	HLMP-EL27-VWRDD	QLMP-AL96-RR6DD
HLMP-AD61-X1TYY	HLMP-ED31-UVT00	HLMP-EL27-VXSDD	QLMP-AL96-SS2DD
HLMP-AD61-X1TZZ	HLMP-ED31-UVTDD	HLMP-EL31-QT000	QLMP-AL96-SS4DD
HLMP-AD61-Y1TDD	HLMP-ED31-UVTZZ	HLMP-EL31-QT0DD	QLMP-AL96-SS6DD
HLMP-AD61-Y1TZZ	HLMP-ED31-UWT00	HLMP-EL31-SV000	QLMP-AL96-TT4DU

HLMP-AD61-YZTDD	HLMP-ED31-UWTDD	HLMP-EL31-SV0DD	QLMP-AL96-TT6DU
HLMP-AD85-RU000	HLMP-ED31-VYT00	HLMP-EL31-SVK00	QLMP-DD99#2DA
HLMP-AD87-RU000	HLMP-ED33-Q0000	HLMP-EL31-SVKDD	QLMP-ED19-TW0DD
HLMP-AD87-RU0YY	HLMP-ED33-QT000	HLMP-EL31-SVRDD	QLMP-ED43-TVTFE
HLMP-AD87-RU0ZZ	HLMP-ED33-QT0ZZ	HLMP-EL31-SVSDD	QLMP-ED44-TV0FE
HLMP-AD87-RUTYY	HLMP-ED33-QTT00	HLMP-EL31-TU000	QLMP-ED45-TV0FE
HLMP-AD87-RUTZZ	HLMP-ED33-RUT00	HLMP-EL31-TUK00	QLMP-ED46-TU0FE
HLMP-AD87-STTZZ	HLMP-ED33-SV000	HLMP-EL31-TUYDD	QLMP-ED56-VV0DD
HLMP-AD90-ST0ZZ	HLMP-ED33-SV0DD	HLMP-EL31-TWRDD	QLMP-ED56-WW0DD
HLMP-AD90-STTTY	HLMP-ED33-SV0ZZ	HLMP-EL31-TWS00	QLMP-ED72-VWTDD
HLMP-AD90-STTZZ	HLMP-ED33-SVT00	HLMP-EL31-TWSDD	QLMP-ED73-SS0DD
HLMP-AL06-N0000	HLMP-ED33-SVTDD	HLMP-EL31-UVKZZ	QLMP-ED73-TT0DD
HLMP-AL06-NSRDD	HLMP-ED33-SVTZZ	HLMP-EL31-UVSDD	QLMP-ED75-TTTDD
HLMP-AL06-QRLDD	HLMP-ED33-TUTDD	HLMP-EL33-QT0DD	QLMP-ED75-UUTDD
HLMP-AL06-RSKDD	HLMP-ED33-TVT00	HLMP-EL33-SUSDD	QLMP-ED77-WXTDD
HLMP-AL06-RSSDD	HLMP-ED33-TVTDD	HLMP-EL33-SV000	QLMP-ED78-UVTDD
HLMP-AL06-STSDD	HLMP-ED33-TW000	HLMP-EL33-SV0DD	QLMP-ED79-UWTDD
HLMP-AL16-N0000	HLMP-ED33-TW0DD	HLMP-EL33-SVRDD	QLMP-ED83-TVTZZ
HLMP-AL16-PSRZZ	HLMP-ED33-TWT00	HLMP-EL33-SVRZZ	QLMP-ED84-UWTZZ
HLMP-AL16-RSKDD	HLMP-ED33-UWT00	HLMP-EL33-SVSDD	QLMP-ED85-TVTZZ
HLMP-AL16-RSRDD	HLMP-ED33-UWTDD	HLMP-EL33-TT4DD	QLMP-ED86-K0T00
HLMP-AL16-RSSZZ	HLMP-ED50-K0T00	HLMP-EL33-TW0DD	QLMP-ED87-KNT00
HLMP-AL61-VYRZZ	HLMP-ED50-PS000	HLMP-EL33-UVSDD	QLMP-ED87-MQT00
HLMP-AL90-RSSZZ	HLMP-ED50-PST00	HLMP-EL33-UXRDD	QLMP-ED87-NRT00
HLMP-BD06-L00DD	HLMP-ED50-PSTDD	HLMP-EL33-VYRDD	QLMP-ED87-PST00
HLMP-BD06-P0000	HLMP-ED54-LPTDD	HLMP-EL57-LP000	QLMP-ED87-QUT00
HLMP-BD06-P00DD	HLMP-ED57-LP000	HLMP-EL57-LP0DD	QLMP-ED87-RST00
HLMP-BD06-RS000	HLMP-ED57-LP0DD	HLMP-EL57-MNYDD	QLMP-ED89
HLMP-BD06-RS0DD	HLMP-ED57-LPT00	HLMP-EL58-LP0DD	QLMP-ED89-NT000
HLMP-BD06-RST00	HLMP-ED80-K0000	HLMP-FD05-LP000	QLMP-ED89-QS000
HLMP-BD06-STT00	HLMP-ED80-K0T00	HLMP-FH05-LP000	QLMP-ED89-QT000
HLMP-BD06-STTDD	HLMP-ED80-KN000	HLMP-FL05-LP000	QLMP-ED92-SV0DD
HLMP-BD16-NP0DD	HLMP-ED80-KNT00	HLMP-HD30-SV000	QLMP-ED93-UWTDD
HLMP-BD16-P0000	HLMP-ED80-KP000	HLMP-HD30-SV0ZZ	QLMP-ED95-SU0DD
HLMP-BD16-P00DD	HLMP-ED80-MP000	HLMP-HD30-TU000	QLMP-ED95-TV0DD
HLMP-BD16-QRT00	HLMP-ED80-MQ000	HLMP-HD31-SV000	QLMP-ED95-UVZDD
HLMP-BD16-RU0ZZ	HLMP-ED80-MQT00	HLMP-HD31-SV0DD	QLMP-ED95-UWZDD
HLMP-BD16-RUTYY	HLMP-ED80-NRT00	HLMP-HD31-TUZDD	QLMP-ED97-TWP00
HLMP-BD16-RUTZZ	HLMP-ED80-PS000	HLMP-HD55-NR0YY	QLMP-ED97-TWPDD
HLMP-BD16-ST0DD	HLMP-ED80-PST00	HLMP-HD55-NR0ZZ	QLMP-ED98-QRT00
HLMP-BD16-STTDD	HLMP-ED80-PSTDD	HLMP-HD55-NRTYY	QLMP-ED98-QST00
HLMP-BH16-QT0DD	HLMP-ED80-QUT00	HLMP-HD55-NRTZZ	QLMP-ED99-TUTDD
HLMP-BL06-N0000	HLMP-ED80-R0T00	HLMP-HD55-PQTZZ	QLMP-ED99-TVTD
HLMP-BL06-N00DD	HLMP-ED82-QT000	HLMP-HD56-MNTDD	QLMP-EH19-UX0DD
HLMP-BL06-QRKDD	HLMP-ED82-QTT00	HLMP-HD56-MQ0DD	QLMP-EH19-VYTDD
HLMP-BL06-RSKDD	HLMP-ED90-MP000	HLMP-HD56-PQTZZ	QLMP-EH29-TW0DD
HLMP-BL06-STSDD	HLMP-ED90-PS000	HLMP-HD57-MN000	QLMP-EH29-UW0DD
HLMP-BL16-N0000	HLMP-ED90-PST00	HLMP-HD57-MNT00	QLMP-EH29-VXTDD
HLMP-BL16-N00DD	HLMP-ED90-PSTDD	HLMP-HD57-MNTDD	QLMP-EH41-TW0DD
HLMP-BL16-PSRZZ	HLMP-EH16-TW000	HLMP-HD57-NP000	QLMP-EH51-UXZDD
HLMP-BL16-Q0KDD	HLMP-EH16-UX000	HLMP-HD57-NP0DD	QLMP-EH51-UXZZZ
HLMP-BL16-QRS00	HLMP-EH16-UX0DD	HLMP-HD57-NP0ZZ	QLMP-EL44-SV0DD



HLMP-BL16-QTRZZ	HLMP-EH16-VX0DD	HLMP-HD57-NPT00	QLMP-EL73-TT2DU
HLMP-ED16-S0000	HLMP-EH18-UX000	HLMP-HD57-NPTDD	QLMP-EL73-TT4DD
HLMP-ED16-S00DD	HLMP-EH18-UX0DD	HLMP-HD57-NPTDU	QLMP-EL73-TT6DD
HLMP-ED16-TW000	HLMP-EH18-WX0DD	HLMP-HD57-NR000	QLMP-EL73-UU2DU
HLMP-ED16-TW0DD	HLMP-EH18-WXTDD	HLMP-HD57-NR0DD	QLMP-EL73-UU4DD
HLMP-ED16-UX000	HLMP-EH25-QT000	HLMP-HD57-NR0YY	QLMP-EL73-UU6DD
HLMP-ED16-UX0DD	HLMP-EH25-SV000	HLMP-HD57-NR0ZZ	QLMP-EL75-TT2DU
HLMP-ED16-UXT00	HLMP-EH25-TW000	HLMP-HD57-NRTDD	QLMP-EL75-TT4DD
HLMP-ED16-V0TDD	HLMP-EH25-TW0DD	HLMP-HD57-NRTZZ	QLMP-EL75-TT6DD
HLMP-ED16-VX000	HLMP-EH25-WZTDD	HLMP-HD57-PQ000	QLMP-EL75-UU2DU
HLMP-ED16-VX0DD	HLMP-EH27-TW000	HLMP-HD57-PQ0DD	QLMP-EL75-UU4DD
HLMP-ED16-VXT00	HLMP-EH27-WZTDD	HLMP-HD57-PQ0ZZ	QLMP-EL75-UU6DD
HLMP-ED16-VXTDD	HLMP-EH27-XYT00	HLMP-HD57-PQTDD	QLMP-EL76-XX2DU
HLMP-ED16-WW000	HLMP-EH27-XYTDD	HLMP-HD57-PQTZZ	QLMP-EL76-XX4DU
HLMP-ED16-WXTDD	HLMP-EH31-QT000	HLMP-HD60-TUTDD	QLMP-EL76-YY2DU
HLMP-ED16-WZ0DD	HLMP-EH31-SV000	HLMP-HD60-TUTZZ	QLMP-EL76-YY4DU
HLMP-ED18-S0000	HLMP-EH31-SV0DD	HLMP-HD60-UVTZZ	QLMP-EL86-VWRDD
HLMP-ED18-TW000	HLMP-EH31-SVTDD	HLMP-HD61-TUTZZ	QLMP-EL89-VWKZZ
HLMP-ED18-TW0DD	HLMP-EH31-TWTDD	HLMP-HD61-TWTYY	QLMP-EL92-UUKDD
HLMP-ED18-TWT00	HLMP-EH31-UV0DD	HLMP-HD61-TXTZZ	QLMP-EL95-UW0DD
HLMP-ED18-TWTDD	HLMP-EH31-UVZDD	HLMP-HH56-NPTDD	QLMP-EL95-VW0DD
HLMP-ED18-UX000	HLMP-EH31-VW0DD	HLMP-HH56-PQTDD	QLMP-EL96-TWSZZ
HLMP-ED18-UX0DD	HLMP-EH33-RU000	HLMP-HH56-RSTDU	QLMP-EL96-UWSZZ
HLMP-ED18-UXT00	HLMP-EH33-SV000	HLMP-HL56-NPYDD	QLMP-HD83-TUTZZ
HLMP-ED18-VX0DD	HLMP-EH33-SV0DD	HLMP-HL56-PQYDU	QLMP-HD94-PQPDD
HLMP-ED18-VYT00	HLMP-EH57-LP000	HLMP-HL57-QRSDD	QLMP-HD95-TXTDD
HLMP-ED18-WX000	HLMP-EL16-S0000	HLMP-LD15-MQT00	QLMP-HD96-SVTTY
HLMP-ED18-WX0DD	HLMP-EL16-TW000	HLMP-LD15-NRT00	QLMP-HD97-NNTDD
HLMP-ED18-WXT00	HLMP-EL16-TW0DD	HLMP-LD15-NRTYY	QLMP-HD97-PPTDD
HLMP-ED18-WXTDD	HLMP-EL16-UX000	HLMP-LD15-PQTTY	QLMP-HD98-TUTZZ
HLMP-ED25-R0000	HLMP-EL16-UX0DD	HLMP-MD16-MQT00	QLMP-HD98-TV0ZZ
HLMP-ED25-RU000	HLMP-EL16-VW0DD	HLMP-RD11-J0000	QLMP-HD98-TVTZZ
HLMP-ED25-RUT00	HLMP-EL16-VY000	HLMP-RD11-LN0DD	QLMP-HD98-UVTZZ
HLMP-ED25-SV000	HLMP-EL16-VY0DD	HLMP-RD11-LP000	QLMP-HL97-NN2DD
HLMP-ED25-SV0DD	HLMP-EL16-WZ0DD	HLMP-RD11-LP0DD	QLMP-HL97-NN4DD
HLMP-ED25-TU0DD	HLMP-EL16-WZRDD	HLMP-RD11-LPT00	QLMP-HL97-NN6DD
HLMP-ED25-TW000	HLMP-EL18-UX000	HLMP-RD11-LPTDD	QLMP-HL97-PP2DD
HLMP-ED25-TW0DD	HLMP-EL18-UX0DD	HLMP-RL11-LP000	QLMP-HL97-PP4DD
HLMP-ED25-TWT00	HLMP-EL18-VY000	HLMP-RL11-LP0DD	QLMP-HL97-PP6DD
HLMP-ED25-TWTDD	HLMP-EL18-VYR00	HLMP-SD11-J0000	QLMP-LD92-NRPYY
HLMP-ED25-UX0DD	HLMP-EL18-VYRDD	HLMP-SD11-LP000	QLMP-RL49-LN000
HLMP-ED25-UXT00	HLMP-EL18-WW2DD	HLMP-SD11-LPT00	QLMP-RL49-LN0DD
HLMP-ED25-UXTDD	HLMP-EL18-WW4DD	HLMP-SD11-LPTDD	QLMT-DH89#2CB
HLMP-ED25-VWTDD	HLMP-EL18-WXRDD	HLMP-SD11-MN0DD	
HLMP-ED25-VXTDD	HLMP-EL18-WZRDD	HLMP-SD11-MNT00	
HLMP-ED27-SV000	HLMP-EL18-XX2DD	HLMP-SD11-MNTDD	

## Extra High Brightness AllnGaP LED Lamps:

HLMP-AG62-UX0DD	HLMP-EG35-UV0DD	HLMP-EL22-VWK00	HLMP-HG63-TX0DD
HLMP-AG62-UX0YY	HLMP-EG35-VW0DD	HLMP-EL22-VWKDD	HLMP-HG63-TX0YY
HLMP-AG62-UX0ZZ	HLMP-EG35-VX0DD	HLMP-EL22-VXK00	HLMP-HG63-TX0ZZ
HLMP-AG62-WZ0DD	HLMP-EG37-TV0DD	HLMP-EL22-VXKDD	HLMP-HG63-UV0DD
HLMP-AG62-X10DD	HLMP-EG37-TW000	HLMP-EL22-VXL00	HLMP-HG63-UW0ZZ
HLMP-AG62-X10YY	HLMP-EG37-TW0DD	HLMP-EL23-T0000	HLMP-HG63-UX0DD
HLMP-AG62-X10ZZ	HLMP-EG37-TW0ZZ	HLMP-EL23-TW000	HLMP-HH62-TX0DD
HLMP-AG62-YZ0DD	HLMP-EG37-UV0DD	HLMP-EL23-TW0DD	HLMP-HH63-TX0DD
HLMP-AG63-UX0DD	HLMP-EG37-VW0ZZ	HLMP-EL23-UV0DD	HLMP-HL62-STKDD
HLMP-AG63-UX0YY	HLMP-EG37-VX000	HLMP-EL23-UVLDD	HLMP-HL62-TX0DD
HLMP-AG63-UX0ZZ	HLMP-EG37-WX0DD	HLMP-EL23-UW0DD	HLMP-HL62-VX0DD
HLMP-AG63-X10DD	HLMP-EH12-VY000	HLMP-EL23-UX000	HLMP-HL63-STKDD
HLMP-AG63-X10YY	HLMP-EH12-VY0DD	HLMP-EL23-UX0DD	HLMP-HL63-TUKDD
HLMP-AG63-X10ZZ	HLMP-EH12-YZ0DD	HLMP-EL23-UXK00	HLMP-HL63-TX000
HLMP-AG63-Y10DD	HLMP-EH13-VY0DD	HLMP-EL23-UXKDD	HLMP-HL63-TX0DD
HLMP-AG63-Y10ZZ	HLMP-EH22-TW000	HLMP-EL23-VW0DD	HLMP-HL63-UW000
HLMP-AH62-UX0DD	HLMP-EH22-TW0DD	HLMP-EL23-VXKDD	HLMP-HL63-VX0DD
HLMP-AH62-X10DD	HLMP-EH23-TW0DD	HLMP-EL23-WYKDD	HLMP-HL63-VXK00
HLMP-AH63-UX0DD	HLMP-EH35-SV000	HLMP-EL35-S0000	HLMP-LG63-TX0DD
HLMP-AH63-X10DD	HLMP-EH35-SV0DD	HLMP-EL35-SV000	HLMP-LG63-TX0ZZ
HLMP-AL62-U0000	HLMP-EH35-UV000	HLMP-EL35-SV0DD	QLMP-AG83-110DU
HLMP-AL62-U00DD	HLMP-EH35-UV0DD	HLMP-EL35-TU000	QLMP-AG83-ZZ0DU
HLMP-AL62-UX0DD	HLMP-EH37-SV0DD	HLMP-EL35-TUK00	QLMP-AG84-110DU
HLMP-AL62-UX0YY	HLMP-EL12-V0000	HLMP-EL35-TUL00	QLMP-AG84-ZZ0DU
HLMP-AL62-UX0ZZ	HLMP-EL12-VY000	HLMP-EL35-TULDD	QLMP-AG85-Y10ZZ
HLMP-AL62-UY0DD	HLMP-EL12-VY0DD	HLMP-EL35-TULZZ	QLMP-AG85-YY0DD
HLMP-AL62-VZ0DD	HLMP-EL12-WX0DD	HLMP-EL35-TV000	QLMP-AG85-ZZ0DD
HLMP-AL62-VZK00	HLMP-EL12-WY0DD	HLMP-EL35-TV0DD	QLMP-AG91-ST0DD
HLMP-AL62-VZKDD	HLMP-EL12-WY400	HLMP-EL35-TVK00	QLMP-AG92-Y10ZZ
HLMP-AL62-VZMDD	HLMP-EL12-WZ000	HLMP-EL35-TVKDD	QLMP-AL83-YY2DU
HLMP-AL62-WXKZZ	HLMP-EL12-WZ0DD	HLMP-EL35-TW000	QLMP-AL83-YY4DU
HLMP-AL62-WZ0DD	HLMP-EL12-WZK00	HLMP-EL35-TW0DD	QLMP-AL83-ZZ2DU
HLMP-AL62-WZKDD	HLMP-EL12-WZKDD	HLMP-EL35-TWK00	QLMP-AL83-ZZ4DU
HLMP-AL62-WZKZZ	HLMP-EL12-X10DD	HLMP-EL35-TWKDD	QLMP-AL84-YY2DU
HLMP-AL62-WZLDD	HLMP-EL12-XYKDD	HLMP-EL35-UV0DD	QLMP-AL84-YY4DU
HLMP-AL62-WZLZZ	HLMP-EL12-YZ2DD	HLMP-EL35-UV200	QLMP-AL84-ZZ2DU
HLMP-AL62-X10DD	HLMP-EL12-YZKDD	HLMP-EL35-UV2DD	QLMP-AL84-ZZ4DU
HLMP-AL62-Y1KDD	HLMP-EL13-V0000	HLMP-EL35-UVKDD	QLMP-AL85-WW2DD
HLMP-AL63-U0000	HLMP-EL13-VY000	HLMP-EL35-UVKZZ	QLMP-AL85-WW4DD
HLMP-AL63-U00DD	HLMP-EL13-VY0DD	HLMP-EL35-UVL00	QLMP-AL85-XX2DD
HLMP-AL63-UX0DD	HLMP-EL13-WX0DD	HLMP-EL35-UW4DD	QLMP-AL85-XX4DD
HLMP-AL63-UX0YY	HLMP-EL13-WXKDD	HLMP-EL35-UWLDD	QLMP-AL85-Y14ZZ
HLMP-AL63-UX0ZZ	HLMP-EL13-WZ000	HLMP-EL35-UX200	QLMP-AL91-RS0DD
HLMP-AL63-V0KDD	HLMP-EL13-WZ0DD	HLMP-EL35-UX400	QLMP-AL92-XYKZZ
HLMP-AL63-VX0DD	HLMP-EL13-WZ400	HLMP-EL35-VWKDD	QLMP-AL92-YZKZZ
HLMP-AL63-VY0ZZ	HLMP-EL13-WZ4DD	HLMP-EL35-VWMDD	QLMP-AL99-QRKDD
HLMP-AL63-VZ0DD	HLMP-EL13-WZK00	HLMP-EL35-VY0DD	QLMP-EG45-UW0FE
HLMP-AL63-VZ0ZZ	HLMP-EL13-X10DD	HLMP-EL35-VY200	QLMP-EG83-TT0DU
HLMP-AL63-VZK00	HLMP-EL13-X1KDD	HLMP-EL35-WX2DD	QLMP-EG83-UU0DU
HLMP-AL63-VZL00	HLMP-EL13-XX2DD	HLMP-EL37-SV0DD	QLMP-EG84-TT0DU
HLMP-AL63-VZMZZ	HLMP-EL13-XX4DD	HLMP-EL37-TV0DD	QLMP-EG84-UU0DU

HLMP-AL63-WZ0DD	HLMP-EL13-XY0DD	HLMP-EL37-TVKDD	QLMP-EL28-UU4DU
HLMP-AL63-WZ0ZZ	HLMP-EL13-XYK00	HLMP-EL37-TW000	QLMP-EL28-UU6DU
HLMP-AL63-WZKDD	HLMP-EL13-XYKDD	HLMP-EL37-TW0DD	QLMP-EL28-VV4DU
HLMP-AL63-WZKYY	HLMP-EL13-YY2DD	HLMP-EL37-TW0ZZ	QLMP-EL28-VV6DU
HLMP-AL63-WZKZZ	HLMP-EL13-YY4DD	HLMP-EL37-TWK00	QLMP-EL34-VWMDD
HLMP-AL63-X10DD	HLMP-EL13-ZZ2DD	HLMP-EL37-TWKDD	QLMP-EL67-VWKZZ
HLMP-AL63-XYKDD	HLMP-EL13-ZZ4DD	HLMP-EL37-TWMZZ	QLMP-EL77-VWZDD
HLMP-EG12-UX0DD	HLMP-EL22-T0000	HLMP-EL37-U00DD	QLMP-EL78-UU4DU
HLMP-EG12-VY000	HLMP-EL22-TVK00	HLMP-EL37-UU2DD	QLMP-EL78-UU6DU
HLMP-EG12-VY0DD	HLMP-EL22-TW000	HLMP-EL37-UU4DD	QLMP-EL78-VV4DU
HLMP-EG12-WX0DD	HLMP-EL22-TW0DD	HLMP-EL37-UVKDD	QLMP-EL78-VV6DU
HLMP-EG12-XY0DD	HLMP-EL22-TW4DD	HLMP-EL37-UX0DD	QLMP-EL84-XX4DU
HLMP-EG13-UX0DD	HLMP-EL22-TWK00	HLMP-EL37-VV2DD	QLMP-EL84-XX6DU
HLMP-EG13-VY0DD	HLMP-EL22-TWKDD	HLMP-EL37-VV4DD	QLMP-EL84-YY4DU
HLMP-EG22-UX000	HLMP-EL22-UV400	HLMP-EL37-VWKDD	QLMP-EL84-YY6DU
HLMP-EG22-UX0DD	HLMP-EL22-UV4DD	HLMP-EL37-VWKZZ	QLMP-EL85-VX4DD
HLMP-EG22-VW000	HLMP-EL22-UV4ZZ	HLMP-EL37-VX000	QLMP-HH82-UV0DU
HLMP-EG22-VW0DD	HLMP-EL22-UVLDD	HLMP-EL37-VY0DD	QLMP-HL96-UU4DU
HLMP-EG22-WX0DD	HLMP-EL22-UX000	HLMP-EL37-VYLDD	QLMP-HL96-UU6DU
HLMP-EG23-UX000	HLMP-EL22-UX0DD	HLMP-EL37-VYMDD	QLMP-HL96-VV4DU
HLMP-EG23-UX0DD	HLMP-EL22-UX400	HLMP-EL37-WW2DD	QLMP-HL96-VV6DU
HLMP-EG23-WX0DD	HLMP-EL22-UX4DD	HLMP-EL37-WW4DD	QLMP-LG94-WW0DD
HLMP-EG35-TV0DD	HLMP-EL22-UXK00	HLMP-HG62-TX0DD	QLMP-LG97-WW0DU
HLMP-EG35-TW000	HLMP-EL22-UXKDD	HLMP-HG62-UW0ZZ	
HLMP-EG35-TW0DD	HLMP-EL22-VW4DD	HLMP-HG62-UX0DD	

**Extra High Brightness InGaN LED Lamps:**

HLMP-CB13-UVB00	HLMP-CB34-R0CDD	HLMP-CB35-SUBDD	HLMP-CM25-X10DD
HLMP-CB13-UX000	HLMP-CB34-RS0DD	HLMP-CM13-Z10DD	HLMP-CM34-WY000
HLMP-CB13-UX0DD	HLMP-CB34-RSB00	HLMP-CM13-Z1B00	HLMP-CM34-WZ0DD
HLMP-CB13-VWBDD	HLMP-CB34-RSBDD	HLMP-CM13-Z1C00	HLMP-CM34-X1000
HLMP-CB13-VWCDD	HLMP-CB34-RSBZZ	HLMP-CM13-Z1CDD	HLMP-CM34-X10DD
HLMP-CB13-VWGDD	HLMP-CB34-RSC00	HLMP-CM13-Z3000	HLMP-CM34-XYC00
HLMP-CB14-UVBDD	HLMP-CB34-RU000	HLMP-CM13-Z30DD	HLMP-CM34-XYCDD
HLMP-CB14-UX000	HLMP-CB34-RU0DD	HLMP-CM14-23CDD	HLMP-CM34-YZCDD
HLMP-CB14-UX0DD	HLMP-CB34-STCDD	HLMP-CM14-Z1C00	HLMP-CM35-X1000
HLMP-CB14-VWBDD	HLMP-CB35-QRCDD	HLMP-CM14-Z1CDD	HLMP-CM35-X10DD
HLMP-CB22-STC00	HLMP-CB35-RSBZZ	HLMP-CM14-Z3000	HLMP-CM35-X1BZZ
HLMP-CB22-STCDD	HLMP-CB35-RSC00	HLMP-CM14-Z30DD	HLMP-CM35-X1CDD
HLMP-CB22-SV000	HLMP-CB35-RSCDD	HLMP-CM22-X1000	HLMP-CM35-XYCDD
HLMP-CB22-SV0DD	HLMP-CB35-RU000	HLMP-CM22-X10DD	QLMP-CB77-UVZDD
HLMP-CB25-SV000	HLMP-CB35-RU0DD	HLMP-CM22-YZC00	QLMP-CB77-VWZDD
HLMP-CB25-SV0DD	HLMP-CB35-RUBZZ	HLMP-CM22-YZCDD	
HLMP-CB34-R0000	HLMP-CB35-STCDD	HLMP-CM25-X1000	