

The logo consists of the text "LEDiL" in a white, sans-serif font, centered within a solid yellow square.

LEDiL

Ledil Oy
Salorankatu 10
FI-24240 SALO
FINLAND
www.ledil.com

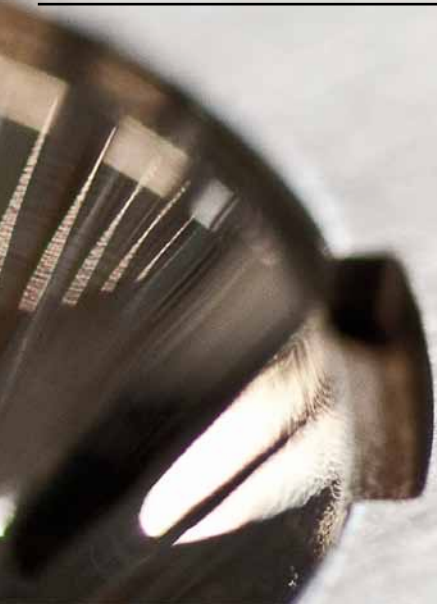
Ledil Globally

Local sales and technical support available in following countries Benelux, China, Germany, Italy, Portugal, Spain, UK, USA, Czechoslovakia, Slovakia, Poland.

See www.ledil.com

Shipping locations
Salo, Finland
Hong Kong, China

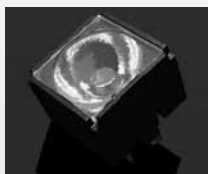
Authorized Distribution Partners
See www.ledil.com/where_to_buy

A close-up, low-angle photograph of a dark, metallic mechanical component, possibly a fan or a motor part, with a bright light reflecting off its surface. The background is a light, textured surface.

Q4/2012



SINGLE LENSES



LARISA
D= 10MM x 10MM
PMMA

CREE XP-G / XB-D

CP12938_LARISA-RS-CLIP8
CP12940_LARISA-M-CLIP8
CP12942_LARISA-O-CLIP8
CP12944_LARISA-W-CLIP8
CP12946_LARISA-WW-CLIP8

CP12939_LARISA-RS-CLIP16
CP12941_LARISA-M-CLIP16
CP12943_LARISA-O-CLIP16
CP12945_LARISA-W-CLIP16
CP12947_LARISA-WW-CLIP16

NICHIA 219 / 119

CP12938_LARISA-RS-CLIP8
CP12940_LARISA-M-CLIP8
CP12942_LARISA-O-CLIP8
CP12944_LARISA-W-CLIP8
CP12946_LARISA-WW-CLIP8

CP12939_LARISA-RS-CLIP16
CP12941_LARISA-M-CLIP16
CP12943_LARISA-O-CLIP16
CP12945_LARISA-W-CLIP16
CP12947_LARISA-WW-CLIP16

OSRAM OSLO SQ

CP12938_LARISA-RS-CLIP8
CP12940_LARISA-M-CLIP8
CP12942_LARISA-O-CLIP8
CP12944_LARISA-W-CLIP8
CP12946_LARISA-WW-CLIP8

CP12939_LARISA-RS-CLIP16
CP12941_LARISA-M-CLIP16
CP12943_LARISA-O-CLIP16
CP12945_LARISA-W-CLIP16
CP12947_LARISA-WW-CLIP16

PHILIPS LUMILEDS LUXEON A / REBEL / REBEL ES

CP12938_LARISA-RS-CLIP8
CP12940_LARISA-M-CLIP8
CP12942_LARISA-O-CLIP8
CP12944_LARISA-W-CLIP8
CP12946_LARISA-WW-CLIP8

CP12939_LARISA-RS-CLIP16
CP12941_LARISA-M-CLIP16
CP12943_LARISA-O-CLIP16
CP12945_LARISA-W-CLIP16
CP12947_LARISA-WW-CLIP16

NICHIA 757

CP13134_LARISA-RS-CLIP16
CP13135_LARISA-M-CLIP16
CP13136_LARISA-O-CLIP16
CP13137_LARISA-W-CLIP16
CP13138_LARISA-WW-CLIP16



LISA
D= 10.8 - 11 MM
PMMA

CREE XP-E / XP-G

CP11627_LISA-RS
CP10641_LISA-SS

OSRAM PLATINUM / DRAGON

CP11626_LISA-RS
CP10444_LISA-SS

PHILIPS LUMILEDS

LUXEON REBEL
CP11630_LISA-RS
CP10544_LISA-SS

SEOUL Z5

CP11627_LISA-RS
CP10641_LISA-SS



LISA2-PIN
D= 9.9 MM
PMMA

SHARP DOUBLE DOME

FP11055_LISA2-RS-PIN
FP10995_LISA2-M-PIN
FP11125_LISA2-O-PIN
FP11851_LISA2-O-90-PIN
FP10996_LISA2-W-PIN
FP10997_LISA2-WW-PIN
FP11429_LISA2-WWW-PIN

SEOUL Z5

FP11055_LISA2-RS-PIN
FP10995_LISA2-M-PIN
FP11125_LISA2-O-PIN
FP11851_LISA2-O-90-PIN
FP10996_LISA2-W-PIN
FP10997_LISA2-WW-PIN
FP11429_LISA2-WWW-PIN

CREE XT-E

FP13025_LISA2-W-PIN
FP13026_LISA2-WW-PIN
FP13028_LISA2-M-PIN



LISA2-PIN
D= 9.9 MM
PMMA

CREE XP-E / XP-G

FP11055_LISA2-RS-PIN
FP10995_LISA2-M-PIN
FP11125_LISA2-O-PIN
FP11851_LISA2-O-90-PIN
FP10996_LISA2-W-PIN
FP10997_LISA2-WW-PIN
FP11429_LISA2-WWW-PIN

CREE XB-D

FP10995_LISA2-M-PIN
FP10996_LISA2-W-PIN
FP10997_LISA2-WW-PIN
FP11429_LISA2-WWW-PIN

PHILIPS LUMILEDS

LUXEON REBEL ES

FP11056_LISA2-RS-PIN
FP10992_LISA2-M-PIN
FP11126_LISA2-O-PIN
FP11853_LISA2-O-90-PIN
FP10996_LISA2-W-PIN
FP10997_LISA2-WW-PIN
FP11429_LISA2-WWW-PIN

PHILIPS LUMILEDS

LUXEON REBEL

FP11056_LISA2-RS-PIN
FP10992_LISA2-M-PIN
FP11126_LISA2-O-PIN
FP11853_LISA2-O-90-PIN
FP10993_LISA2-W-PIN
FP10994_LISA2-WW-PIN
FP11951_LISA2-WWW-PIN

OSRAM OSLO SQ

FP11047_LISA2-RS-PIN
FP11001_LISA2-M-PIN
FP11124_LISA2-O-PIN
FP11852_LISA2-O-90-PIN
FP11002_LISA2-W-PIN
FP11003_LISA2-WW-PIN
FP11957_LISA2-WWW-PIN

NICHIA NCS19 / NVS19

FP11057_LISA2-RS-PIN
FP10998_LISA2-M-PIN
FP11127_LISA2-O-PIN
FP11855_LISA2-O-90-PIN
FP10999_LISA2-W-PIN
FP11000_LISA2-WW-PIN
FP11954_LISA2-WWW-PIN



SINGLE LENSES



LISA2-CLIP
D= 9.9 MM
PMMA

CREE XP-E / XP-G

FP11085_LISA2-RS-CLIP
FP11075_LISA2-M-CLIP
FP11121_LISA2-O-CLIP
FP11856_LISA2-O-90-CLIP
FP11076_LISA2-W-CLIP

PHILIPS LUMILEDS LUXEON REBEL ES

FP11086_LISA2-RS-CLIP
FP11072_LISA2-M-CLIP
FP11122_LISA2-O-CLIP
FP11858_LISA2-O-90-CLIP
FP11076_LISA2-W-CLIP
FP11077_LISA2-WW-CLIP
FP11431_LISA2-WWW-CLIP

PHILIPS LUMILEDS LUXEON REBEL

FP11086_LISA2-RS-CLIP
FP11072_LISA2-M-CLIP
FP11122_LISA2-O-CLIP
FP11858_LISA2-O-90-CLIP
FP11073_LISA2-W-CLIP
FP11074_LISA2-WW-CLIP
FP11952_LISA2-WWW-CLIP

OSRAM OSOLON

FP11084_LISA2-RS-CLIP
FP11081_LISA2-M-CLIP
FP11120_LISA2-O-CLIP
FP11857_LISA2-O-90-CLIP
FP11082_LISA2-W-CLIP
FP11083_LISA2-WW-CLIP
FP11958_LISA2-WWW-CLIP

NICHIA NCS19 / NVS19

FP11087_LISA2-RS-CLIP
FP11078_LISA2-M-CLIP
FP11123_LISA2-O-CLIP
FP11860_LISA2-O-90-CLIP
FP11079_LISA2-W-CLIP
FP11080_LISA2-WW-CLIP
FP11955_LISA2-WWW-CLIP

CREE XT-E

FP13029_LISA2-WW-CLIP
FP13030_LISA2-M-CLIP
FP13031_LISA2-W-CLIP



LISA2-CLIP
D=9.9 MM
PMMA

SHARP DOUBLE DOME

FP11085_LISA2-RS-CLIP
FP11075_LISA2-M-CLIP
FP11121_LISA2-O-CLIP
FP11856_LISA2-O-90-CLIP
FP11076_LISA2-W-CLIP
FP11077_LISA2-WW-CLIP
FP11431_LISA2-WWW-CLIP

SEOUL Z5

FP11085_LISA2-RS-CLIP
FP11075_LISA2-M-CLIP
FP11121_LISA2-O-CLIP
FP11856_LISA2-O-90-CLIP
FP11076_LISA2-W-CLIP
FP11077_LISA2-WW-CLIP
FP11431_LISA2-WWW-CLIP



TINA-O-PLUS
D= 16 MM
PMMA

OSRAM PLATINUM/ DRAGON+

C10449_TINA-W



TINA
D= 16.1 MM
PMMA

CREE XP-E / XP-G

FA10887_TINA-RS
FA10644_TINA-D
FA10645_TINA-M
FA11200_TINA-O
FA10838_TINA-W
FA11019_TINA-WW

CREE MX6 / MX3

FA10888_TINA-RS
FA10646_TINA-D
FA10647_TINA-M
FA11201_TINA-O
FA10839_TINA-W
FA10901_TINA-WW

NICHIA 6Nx83 / 3Nx83

FA10888_TINA-RS
FA10646_TINA-D
FA10647_TINA-M
FA11201_TINA-O
FA10839_TINA-W
FA10901_TINA-WW

OSRAM OSOLON

FA11208_TINA-RS
FA11205_TINA-D
FA11206_TINA-M
FA11204_TINA-O
FA11207_TINA-W

OSRAM PLATINUM/ DRAGON+

FA10886_TINA-RS
FA10642_TINA-D
FA10643_TINA-M
FA11199_TINA-O

PHILIPS LUMILEDS LUXEON REBEL

FA11212_TINA-RS
FA11209_TINA-D
FA11210_TINA-M
FA11203_TINA-O
FA11211_TINA-W

PHILIPS LUMILEDS LUXEON REBEL ES

FA12038_TINA-RS
FA12310_TINA-D
FA12040_TINA-M

SEOUL Z5

FA10887_TINA-RS
FA10644_TINA-D
FA11200_TINA-O
FA10645_TINA-M
FA10838_TINA-W
FA11019_TINA-WW



SINGLE LENSES



TINA2
D= 16.1 MM
PMMA

CREE XP-E / XP-G

CA11016_TINA2-RS
CA11420_TINA2-D
CA11017_TINA2-M
CA11052_TINA2-O
CA12056_TINA2-W

CP12677_TINA2-RS
CP12678_TINA2-D
CP12679_TINA2-M
CP12680_TINA2-O
CP12681_TINA2-W

CREE XB-D

CP12671_TINA2-D
CP12672_TINA2-M
CP12673_TINA2-O
CP12674_TINA2-W

CREE XT-E

CA11017_TINA2-M
CA11052_TINA2-O
CA11420_TINA2-D

CP12677_TINA2-RS
CP12678_TINA2-D
CP12679_TINA2-M
CP12680_TINA2-O
CP12681_TINA2-W

CREE MX6 / MX3

CA11171_TINA2-RS
CA11172_TINA2-D
CA11173_TINA2-O
CA11174_TINA2-M
CA11175_TINA2-W
CA11176_TINA2-WW

CP12682_TINA2-RS
CP12683_TINA2-D
CP12684_TINA2-O
CP12685_TINA2-M
CP12686_TINA2-W

NICHIA 6Nx83 / 3Nx83

CA11171_TINA2-RS
CA11172_TINA2-D
CA11173_TINA2-O
CA11174_TINA2-M
CA11175_TINA2-W
CA11176_TINA2-WW

CP12682_TINA2-RS
CP12683_TINA2-D
CP12684_TINA2-O
CP12685_TINA2-M
CP12686_TINA2-W



TINA2
D= 16.1 MM
PMMA

OSRAM OSOLON

CA12374_TINA2-RS
CA12376_TINA2-SS
CA12375_TINA2-D
CA12377_TINA2-M
CA12379_TINA2-O
CA12378_TINA2-W

CP12687_TINA2-RS
CP12688_TINA2-D
CP12689_TINA2-O
CP12690_TINA2-M

OSRAM PLATINUM/ DRAGON+

CA11847_TINA2-RS
CA12046_TINA2-D
CA12047_TINA2-O
CA11848_TINA2-M

NICHIA NCS19 / NVS19

CA11020_TINA2-RS
CA11942_TINA2-D
CA11021_TINA2-M
CA11053_TINA2-O
CA11022_TINA2-W

SEOUL Z5

CA11016_TINA2-RS
CA11420_TINA2-D
CA11017_TINA2-M
CA11052_TINA2-O
CA12056_TINA2-W

CITIZEN CL-L400

CA12399_TINA2-RS
CA12400_TINA2-D
CA12401_TINA2-M
CA12404_TINA2-O
CA12402_TINA2-W

AVAGO JADE

CA12346_TINA2-RS
CA12347_TINA2-D
CA12348_TINA2-M
CA12349_TINA2-O
CA12350_TINA2-W
CA12403_TINA2-WW



TINA3
D= 16.1 MM
PMMA

CREE XP-E / XP-G

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW

CREE XB-D

FA11824_TINA3-W
FA11870_TINA3-00

CREE XT-E

FA11902_TINA-3-W
FA11904_TINA-3-WWW

PHILIPS LUMILEDS LUXEON REBEL

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW

PHILIPS LUMILEDS LUXEON REBEL ES

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW

OSRAM OSOLON

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW

NICHIA NCS19 / NVS19

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW

SHARP DOUBLE DOME

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW



SINGLE LENSES



TINA3
D= 16.1 MM
PMMA

SEOUL Z5

FA11905_TINA3-S
FA11870_TINA3-00
FA11824_TINA3-W
FA11825_TINA3-WW
FA11826_TINA3-WWW

CREE XM-L

FA11905_TINA-3-S
FA11902_TINA-3-W
FA11903_TINA-3-WW
FA11904_TINA-3-WWW



HEIDI
D= 21.6 MM
PMMA

CREE XP-E / XP-G

CA11663_HEIDI-RS
CA12242_HEIDI-SS
CA11264_HEIDI-D
CA11265_HEIDI-M
CA11266_HEIDI-O
CA11267_HEIDI-O-90
CA11268_HEIDI-W
CA12079_HEIDI-W2

CREE XB-D

CA11663_HEIDI-RS
CA11264_HEIDI-D
CA11265_HEIDI-M
CA11266_HEIDI-O
CA11267_HEIDI-O-90
CA11268_HEIDI-W
CA12079_HEIDI-W2

PHILIPS LUMILEDS

LUXEON REBEL

CA11663_HEIDI-RS
CA12242_HEIDI-SS
CA11264_HEIDI-D
CA11265_HEIDI-M
CA11266_HEIDI-O
CA11267_HEIDI-O-90
CA11268_HEIDI-W
CA12079_HEIDI-W2

PHILIPS LUMILEDS

LUXEON REBEL ES

CA12537_HEIDI-RS
CA12443_HEIDI-SS
CA12530_HEIDI-D
CA12536_HEIDI-M
CA12949_HEIDI-O
CA12079_HEIDI-W2

OSRAM OSOLON

CA11663_HEIDI-RS
CA12242_HEIDI-SS
CA11264_HEIDI-D
CA11265_HEIDI-M
CA11266_HEIDI-O
CA11267_HEIDI-O-90
CA11268_HEIDI-W
CA12079_HEIDI-W2



HEIDI
D= 21.6 MM
PMMA

SHARP DOUBLE DOME

CA11663_HEIDI-RS
CA12242_HEIDI-SS
CA11264_HEIDI-D
CA11265_HEIDI-M
CA11266_HEIDI-O
CA11267_HEIDI-O-90
CA11268_HEIDI-W
CA12079_HEIDI-W2

SEOUL Z5

CA11663_HEIDI-RS
CA12242_HEIDI-SS
CA11264_HEIDI-D
CA11265_HEIDI-M
CA11266_HEIDI-O
CA11267_HEIDI-O-90
CA11268_HEIDI-W
CA12079_HEIDI-W2



TWIDDLE
D= 21.6 MM
PMMA

CREE MX6 / MX3

FA10734_TWIDDLE-D
FA10736_TWIDDLE-D

NICHIA 6Nx83 / 3Nx83

FA10734_TWIDDLE-D
FA10736_TWIDDLE-D



SINGLE LENSES



ROSE
21.6 MM X 21.6 MM
PC

CREE XP-E / XP-G

FA10668_CXP-RS
FA10667_CXP-SS
FA10666_CXP-D
FA10665_CXP-M
FA10669_CXP-O
FA11153_CXP-O-90
FA10708_CXP-W

CREE MC-E

FA10679_CMC-RS
FA10678_CMC-SS
FA10677_CMC-D
FA10676_CMC-M
FA10680_CMC-O
FA11155_CMC-O-90
FA10714_CMC-W

CREE XM-L

FA11908_CXM-SS
FA11909_CXM-RS
FA11910_CXM-D
FA11911_CXM-M
FA11912_CXM-O
FA11155_CXM-O-90
FA12620_CXM-W

SEOUL P4

FA10311_SSS-RS
FA10330_SSS-SS
FA10312_SSS-D
FA10313_SSS-M
FA10314_SSS-O
FA11149_SSS-O-90
FA10539_SSS-W

SEOUL Z5

FA10668_CXP-RS
FA10667_CXP-SS
FA10666_CXP-D
FA10665_CXP-M
FA10669_CXP-O
FA11153_CXP-O-90
FA10708_CXP-W

PHILIPS LUMILEDS

LUXEON K2

FA10329_K2S-SS
FA10307_K2S-RS
FA10308_K2S-D
FA10309_K2S-M
FA10310_K2S-O
FA10323_K2S-W



ROSE
21.6 MM X 21.6 MM
PC (*COP)

NICHIA 6Nx83 / 3Nx83

FA10336_NIS83-MX-RS
FA10337_NIS83-MX-SS
FA10338_NIS83-MX-D
FA10339_NIS83-MX-M
FA10340_NIS83-MX-O
FA10903_NIS83-MX-W
FA11151_NIS83-MX-O-90

NICHIA NCCU033*

FA10857_NIS033U-RS
FA10911_NIS033U-SS
FA10912_NIS033U-M
FA10913_NIS033U-W

PHILIPS LUMILEDS

LUXEON REBEL / REBEL ES

FCX10856_RES-RS
FCX10853_RES-SS
FCX10852_RES-D
FCX10851_RES-M
FCX10854_RES-O
FCX10855_RES-W
FCX11675_RES-WW
FCX11157_RES-O-90

OSRAM PLATINUM / DRAGON+

FA10299_OSS-RS
FA10327_OSS-SS
FA10300_OSS-D
FA10301_OSS-M
FA10302_OSS-O
FA10342_OSS-W
FA11145_OSS-O-90

CREE MX6 / MX3

FA10336_NIS83-MX-RS
FA10337_NIS83-MX-SS
FA10338_NIS83-MX-D
FA10339_NIS83-MX-M
FA10340_NIS83-MX-O
FA10903_NIS83-MX-W
FA11151_NIS83-MX-O-90

NICHIA 153

FA11233_NIS53-SS
FA11234_NIS53-D
FA11235_NIS53-M
FA11236_NIS53-O
FA11237_NIS53-W-V6



ROSE
21.6 MM X 21.6 MM
PMMA

OSRAM PLATINUM / DRAGON+

CA10561_OSS-2-RS
CA10560_OSS-2-SS
CA10559_OSS-2-D
CA10569_OSS-2-M
CA10572_OSS-2-O
CA12081_OSS2-WWW

NICHIA 6Nx83 / 3Nx83

CA12124_NIS83-2-RS
CA12123_NIS83-2-SS
CA12122_NIS83-2-D
CA12126_NIS83-2-M
CA12125_NIS83-2-O



LAURA
21.6 MM X 21.6 MM
PMMA

CREE XP-E / XP-G

CA11353_LAURA-RS
CA11643_LAURA-SS
CA11360_LAURA-D
CA11355_LAURA-M
CA11365_LAURA-O
CA11525_LAURA-REF-W
CA12343_LAURA-W
CA11766_LAURA-WW

CREE XT-E

CA11360_LAURA-D
CA11355_LAURA-M
CA12343_LAURA-W

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

CX11352_LAURA-RS
CX11645_LAURA-SS
CX11359_LAURA-D
CX11354_LAURA-M
CX11364_LAURA-O
CX11524_LAURA-REF-W
CX12568_LAURA-W
CA11768_LAURA-WW

NICHIA NCS19 / NVS19

CA11974_LAURA-RS
CA11977_LAURA-SS
CA11975_LAURA-D
CA11976_LAURA-M
CA11973_LAURA-O
CA11427_LAURA-REF-W
CA12570_LAURA-W
CA11978_LAURA-WW



SINGLE LENSES



LAURA
21.6 MM X 21.6 MM
PMMA

CREE XP-E / XP-G

CA11959_LAURA-RS-PIN
CA12011_LAURA-SS-PIN
CA11960_LAURA-D-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-O-PIN
CA12344_LAURA-W-PIN

CREE XB-D

CA12011_LAURA-RS-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-D-PIN
CA12344_LAURA-W-PIN
CA12325_LAURA-WW-PIN

OSRAM OSOLON

CA11959_LAURA-RS-PIN
CA12011_LAURA-SS-PIN
CA11960_LAURA-D-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-O-PIN
CA12344_LAURA-W-PIN

NICHIA NCS19 / NVS19

CA11959_LAURA-RS-PIN
CA12011_LAURA-SS-PIN
CA11960_LAURA-D-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-O-PIN
CA12344_LAURA-W-PIN

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

CA11959_LAURA-RS-PIN
CA12011_LAURA-SS-PIN
CA11960_LAURA-D-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-O-PIN
CA12344_LAURA-W-PIN

SEOUL Z5

CA11959_LAURA-RS-PIN
CA12011_LAURA-SS-PIN
CA11960_LAURA-D-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-O-PIN
CA12344_LAURA-W-PIN

SHARP DOUBLE DOME

CA11959_LAURA-RS-PIN
CA12011_LAURA-SS-PIN
CA11960_LAURA-D-PIN
CA11837_LAURA-M-PIN
CA12012_LAURA-O-PIN
CA12344_LAURA-W-PIN



LAURA
21.6 MM X 21.6 MM
PMMA

CREE XP-E / XP-G

CP12631_LAURA-SS-PG
CP12634_LAURA-SS-PG
CP12632_LAURA-D-PG
CP12633_LAURA-M-PG
CP12635_LAURA-O-PG
CP12636_LAURA-W-PG
CP12637_LAURA-WW-PG

CREE XB-D

CP12631_LAURA-RS-PG
CP12634_LAURA-SS-PG
CP12632_LAURA-D-PG
CP12633_LAURA-M-PG
CP12635_LAURA-O-PG
CP12636_LAURA-W-PG
CP12637_LAURA-WW-PG

OSRAM OSOLON

CP12631_LAURA-RS-PG
CP12634_LAURA-SS-PG
CP12632_LAURA-D-PG
CP12633_LAURA-M-PG
CP12635_LAURA-O-PG
CP12636_LAURA-W-PG
CP12637_LAURA-WW-PG

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

CP12631_LAURA-RS-PG
CP12634_LAURA-SS-PG
CP12632_LAURA-D-PG
CP12633_LAURA-M-PG
CP12635_LAURA-O-PG
CP12636_LAURA-W-PG
CP12637_LAURA-WW-PG

NICHIA NCS19 / NVS19

CP12631_LAURA-RS-PG
CP12634_LAURA-SS-PG
CP12632_LAURA-D-PG
CP12633_LAURA-M-PG
CP12635_LAURA-O-PG
CP12636_LAURA-W-PG
CP12637_LAURA-WW-PG

SEOUL Z5

CP12631_LAURA-RS-PG
CP12634_LAURA-SS-PG
CP12632_LAURA-D-PG
CP12633_LAURA-M-PG
CP12635_LAURA-O-PG
CP12636_LAURA-W-PG
CP12637_LAURA-WW-PG



LEILA
D= 21.6 MM
PMMA

CREE XP-E / XP-G

FA10661_LXP-RS
FA11739_LXP-RS2
FA10663_LXP-D
FA10660_LXP-M
FA11450_LXP-M2
FA12218_LXP-O
FA11116_LXP-O-90
FA10662_LXP-REC
FA10832_LXP-W

CA11481_LXP2-RS
CA11482_LXP2-D
CA11483_LXP2-M
CA11484_LXP2-O-90

CREE XB-D

CA12584_LXB2-RS2
CA12665_LXB2-D
CA12666_LXB2-M
CA12844_LXB2-O-90
CA12667_LXB2-W

CREE XT-E

FA10832_LXP-W

CA12816_LXP2-RS2
CA11482_LXP2-D
CA11483_LXP2-M

CREE MC-E

FA10613_LM1-RS
FA10650_LM1-D
FA10614_LM1-M
FA11447_LM1-M2
FA11067_LM1-O-90
FA10615_LM1-REC
FA11894_LM1-W
FA11827_LM1-WW

CREE MX6 / MX3

FA10696_LN2-RS
FA10695_LN2-D
FA10697_LN2-M
FA11452_LN2-M2
FA11108_LN2-O-90
FA10698_LN2-REC

OSRAM OSOLON

CP12412_LOS-RS
CP12413_LOS-D
CP12414_LOS-M
CP12415_LOS-O-90
CP12416_LOS-W

OSRAM OSTAR LIGHTING+

FA11110_LOST-D
FA11112_LOST-M
FA11113_LOST-W
FA11114_LOST-O-90
FA11115_LOST-REC
FA11893_LOST-WW



SINGLE LENSES



LEILA
D= 21.6 MM
PMMA

SEOUL Z5

FA10661_LXP-RS
FA11739_LXP-RS2
FA10663_LXP-D
FA10660_LXP-M
FA11450_LXP-M2
FA11116_LXP-O-90
FA10662_LXP-REC
FA10832_LXP-W

CA11481_LXP2-RS
CA11482_LXP2-D
CA11483_LXP2-M
CA11484_LXP2-O-90
CA12392_LXP2-W

SAMSUNG SUNNIX 5

FA11060_LS5-RS
FA11061_LS5-D
FA11062_LS5-M
FA11462_LS5-M2
FA11063_LS5-O-90
FA11064_LS5-REC

PHILIPS LUMILEDS

LUXEON REBEL

CA12262_LR2-RS
CA11263_LR2-D
CA11264_LR2-M
CA11640_LR2-O-90
CA12393_LR2-W

PHILIPS LUMILEDS

LUXEON REBEL ES

CA11929_LR2-RS
CA11930_LR2-D
CA11931_LR2-M
CA12629_LR2-O-90
CA12394_LR2-W



LEILA
D= 21.6 MM
PMMA

CREE XM-L

FA11937_LXM-RS
FA11938_LXM-D
FA11939_LXM-M
FA11941_LXM-REC

OSRAM PLATINUM / DRAGON+

FA10751_L02-RS
FA10753_L02-D
FA10750_L02-M
FA11453_L02-M2
FA11834_L02-O
FA11135_L02-O-90
FA10752_L02-REC
CA11543_L02-W

NICHIA 6Nx83 / 3Nx83

FA10696_LN2-RS
FA10695_LN2-D
FA10697_LN2-M
FA11452_LN2-M2
FA11108_LN2-O-90
FA10698_LN2-REC



LEILA
D= 21.6 MM
PMMA

CREE XP-E / XP-G

CP11631_LXP3-RS
CP12817_LXP3-RS2
CP11632_LXP3-D
CP11633_LXP3-M
CP11634_LXP3-O-90
CP12395_LXP3-W

CREE XB-D

CP12583_LXB3-RS2
CP12668_LXB3-D
CP12669_LXB3-M
CP12670_LXB3-W

NICHIA NCS19 / NVS19

CP10870_LN3-RS
CP10872_LN3-D
CP10869_LN3-M
CP12405_LN3-O-90
CP12406_LN3-W



LEILA
D= 21.6 MM
PMMA

SEOUL Z5

CP11631_LXP3-RS
CP11632_LXP3-D
CP11633_LXP3-M
CP11634_LXP3-O-90
CP12395_LXP3-W

OSRAM DIAMOND DRAGON

FCN10796_LD1-RS
FCN10798_LD1-D
FCN10795_LD1-M
FCN11456_LD1-M2
FCN11107_LD1-O-90
FCN10797_LD1-REC

SEOUL P4

FCN10788_LZ1-RS
FCN10790_LZ1-D
FCN10787_LZ1-M
FCN11455_LZ1-M2
FCN11102_LZ1-O-90
FCN10789_LZ1-REC

LEDENGIN (5W)

FCN10784_LE1-RS
FCN10786_LE1-D
FCN10783_LE1-M
FCN11454_LE1-M2
FCN11103_LE1-O-90
FCN10785_LE1-REC
FCN12592_LE1-D-COP
(UV-LED)

PHILIPS LUMILEDS

LUXEON REBEL

FCN10804_LR1-RS
FCN11738_LR1-RS2
FCN10806_LR1-D
FCN10803_LR1-M
FCN11458_LR1-M2
FCN10805_LR1-REC
FCN11106_LR1-O-90
FCN10890_LR1-W

OSRAM PLATINUM / DRAGON+

FCN11257_L01-RS
FCN11259_L01-D
FCN11260_L01-O
FCN11258_L01-M
FCN11466_L01-M2
FCN11262_L01-REC
FCN11261_L01-W

SINGLE LENSES



IRINA
D= 24.7 MM
PMMA

CREE XP-E / XP-G
C11421_IRINA-RS

**PHILIPS LUMILEDS
LUXEON REBEL**
C11421_IRINA-RS

OSRAM OSOLON
C11421_IRINA-RS

NICHIA NCS19 / NVS19
C11421_IRINA-RS

SHARP DOUBLE DOME
C11421_IRINA-RS

SEOUL Z5
C11421_IRINA-RS



SPUTNIK
D= 26 MM
PMMA

**OSRAM PLATINUM/
DRAGON+**
CA10318_TITANUM-O-SS
CA10252_TITANUM-O-M
CA10319_TITANUM-O-O
CA11240_TITANUM-O-90
CA10244_TITANUM-O-W

CA10968_TITANUM-SS-C
CA10864_TITANUM-O-C
CA11241_TITANUM-O-90-C

SEOUL P4
CA10321_SPUTNIK-Z-SS
CA10249_SPUTNIK-Z-M
CA10322_SPUTNIK-Z-O
CA10241_SPUTNIK-Z-W

SEOUL P5
CA10298_SPUTNIK-R5



EMILY
D= 26 MM
PMMA

CREE XP-E / XP-G
CA11387_EMILY-SS
CA11388_EMILY-M
CA11391_EMILY-M2
CA11389_EMILY-O
CA11390_EMILY-O-90
CA11934_EMILY-W
CA12589_EMILY-WWW

CREE XT-E
CA12062_EMILY-D
CA12064_EMILY-M
CA11934_EMILY-W

OSRAM OSOLON
CA11387_EMILY-SS
CA11388_EMILY-M
CA11391_EMILY-M2
CA11389_EMILY-O
CA11390_EMILY-O-90
CA11934_EMILY-W

**PHILIPS LUMILEDS
LUXEON REBEL**
CA11387_EMILY-SS
CA11388_EMILY-M
CA11391_EMILY-M2
CA11389_EMILY-O
CA11390_EMILY-O-90
CA11934_EMILY-W

NICHIA NCS19 / NVS19
CA11387_EMILY-SS
CA11388_EMILY-M
CA11391_EMILY-M2
CA11389_EMILY-O
CA11390_EMILY-O-90
CA11934_EMILY-W

SHARP DOUBLE DOME
CA11387_EMILY-SS
CA11388_EMILY-M
CA11391_EMILY-M2
CA11389_EMILY-O
CA11390_EMILY-O-90
CA11934_EMILY-W

SEOUL Z5
CA11387_EMILY-SS
CA11388_EMILY-M
CA11391_EMILY-M2
CA11389_EMILY-O
CA11390_EMILY-O-90
CA11934_EMILY-W



EMILY
D= 26 MM
PMMA

CREE XM-L
CA12062_EMILY-D
CA12064_EMILY-M
CA12070_EMILY-M2
CA12066_EMILY-O
CA12068_EMILY-O-90
CA11934_EMILY-W

**PHILIPS LUMILEDS
LUXEON REBEL ES**
CA12062_EMILY-D
CA12064_EMILY-M
CA12070_EMILY-M2
CA12066_EMILY-O
CA12068_EMILY-O-90
CA11934_EMILY-W



SINGLE LENSES



EVA
D= 35 MM
PMMA

CREE MC-E / XT-E / XM-L

C12041_EVA-S
C10684_EVA-D
C10685_EVA-M
C12828_EVA-O
C10686_EVA-W
C10909_EVA-WW

PHILIPS LUMILEDS LUXEON M

C10684_EVA-D
C10685_EVA-M
C12828_EVA-O
C10686_EVA-W
C10909_EVA-WW



EVA
D= 37.7 MM
PMMA

CREE XM-L

CA12055_EVA-S
CA12057_EVA-D
CA12058_EVA-M
CA12859_EVA-O
CA12059_EVA-W
CA12060_EVA-WW

CP12196_EVA-S
CP12197_EVA-D
CP12198_EVA-M
CP12860_EVA-O
CP12199_EVA-W
CP12200_EVA-WW

PHILIPS LUMILEDS LUXEON M

CA12806_EVA-S
CA12802_EVA-D
CA12803_EVA-M
CA12858_EVA-O
CA12804_EVA-W
CA12805_EVA-WW

CP12822_EVA-S
CP12818_EVA-D
CP12819_EVA-M
CP12857_EVA-O
CP12820_EVA-W
CP12821_EVA-WW



MIRA
D= 32.4 MM
PC

CREE MT-G / CXA15

C12500_MIRA-M
C12501_MIRA-W
C12502_MIRA-WW

PHILIPS LUMILEDS LUXEON M

C12500_MIRA-M
C12501_MIRA-W
C12502_MIRA-WW

BRIDGELUX ES-SERIES

C12500_MIRA-M
C12501_MIRA-W
C12502_MIRA-WW



MIRA (with holder)
D= 35 MM
PC

CREE MT-G / MT-G2

CA12503_MIRA-M
CA12504_MIRA-W
CA12505_MIRA-WW

BRIDGELUX ES-SERIES

CA12503_MIRA-M
CA12504_MIRA-W
CA12505_MIRA-WW

PHILIPS LUMILEDS LUXEON M

CA12878_MIRA-M
CA12879_MIRA-W
CA12880_MIRA-WW

CREE CXA15

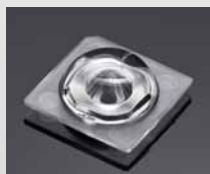
CN13144_MIRA-M
CN13145_MIRA-W
CN13146_MIRA-WW



EYA
D= 30 MM
PMMA

OSRAM PLATINUM DRAGON

CA11956_EYA-S
CA11337_EYA-O



SIRI-A
13.9 MM X 13.9 MM
PMMA

CREE XP-G

C12473_SIRI-A
CA12474_SIRI-A
C12490_SIRI-DOME
CA13013_SIRI-DOME
C12491_SIRI-DIFF
CA13014_SIRI-DIFF



JULIA-A
18.9 MM X 4.7 MM
PMMA

CREE XP-E / XP-G

F11947_JULIA-A
FA11948_JULIA-A

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

F11947_JULIA-A
FA11948_JULIA-A

OSRAM OSOLON

F11947_JULIA-A
FA11948_JULIA-A

NICHIA NCS19 / NVS19

F11947_JULIA-A
FA11948_JULIA-A



SPECIALTY PRODUCTS



FLARE-B
29.0 MM X 24.5 MM X
14.5 MM
PMMA

CREE XP-E / XP-G
C10946_FLARE-B
CA10932_FLARE-B

OSRAM OSOLON
C10946_FLARE-B
CA10932_FLARE-B

NICHIA NCS19 / NVS19
C10946_FLARE-B
CA10932_FLARE-B

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C10946_FLARE-B
CA10932_FLARE-B

SEOUL Z5
C10946_FLARE-B
CA10932_FLARE-B

SHARP DOUBLE DOME
C10946_FLARE-B
CA10932_FLARE-B



CRYSTAL
D= 46.8 mm
PMMA

CREE XP-E / XP-G / XM-L
C12916_CRYSTAL-RS
C12985_CRYSTAL-MINE

OSRAM OSOLON SQ EC
C12916_CRYSTAL-RS
C12985_CRYSTAL-MINE

OSRAM OSOLON SSL 80
C12916_CRYSTAL-RS
C12985_CRYSTAL-MINE



FLARE-MINI-AD
D=16 mm, H=8,6 mm
PMMA

CREE XP-G
C13015_FLARE-MINI-AD
C13016_FLARE-MINI-AD
CA13057_FLARE-MINI-AD
CA13058_FLARE-MINI-AD

CREE XB-D
C13015_FLARE-MINI-AD
C13016_FLARE-MINI-AD
CA13057_FLARE-MINI-AD
CA13058_FLARE-MINI-AD

CREE XT-E
C13015_FLARE-MINI-AD
C13016_FLARE-MINI-AD
CA13057_FLARE-MINI-AD
CA13058_FLARE-MINI-AD

NICHIA NVS19
C13015_FLARE-MINI-AD
C13016_FLARE-MINI-AD
CA13057_FLARE-MINI-AD
CA13058_FLARE-MINI-AD

OSRAM OSOLON SQUARE EC
C13015_FLARE-MINI-AD
C13016_FLARE-MINI-AD
CA13057_FLARE-MINI-AD
CA13058_FLARE-MINI-AD

**PHILIPS LUMILEDS
LUXEON A**
C13015_FLARE-MINI-AD
C13016_FLARE-MINI-AD
CA13057_FLARE-MINI-AD
CA13058_FLARE-MINI-AD



RGBX
D= 30 MM
PMMA

CREE MC-E / MC-E RGB
CP10961_RGBX-SS
CP10944_RGBX-M
CP10945_RGBX-O

OSTAR-SMT RGB
CP10960_RGBX-SS
CP10766_RGBX-M
CP10767_RGBX-O



IRIS
D= 38 MM
PMMA

CREE MC-E
CN10861_IRIS
CN10953_IRIS-M
CN11470_IRIS-O

CREE XM-L
FCN12103_IRIS-SCREW
FCA12104_IRIS

LUMINUS SST-50 / SST-90
CN11770_IRIS
CN11771_IRIS-M
CN11772_IRIS-O

CREE XP-E / XP-G
FCN12076_IRIS-SCREW
FCA12077_IRIS

**PHILIPS LUMILEDS
LUXEON REBEL**
FCN12076_IRIS-SCREW
FCA12077_IRIS

NICHIA NCS19 / NVS19
FCN12076_IRIS-SCREW
FCA12077_IRIS

OSRAM OSOLON
FCN12076_IRIS-SCREW
FCA12077_IRIS

SHARP DOUBLE DOME
FCN12076_IRIS-SCREW
FCA12077_IRIS

SEOUL Z5
FCN12076_IRIS-SCREW
FCA12077_IRIS



VENLA-IRIS
D= 45 MM
PC

**PHILIPS LUMILEDS
LUXEON S**
CA12090_VENLA-S-IRIS
CP12577_VENLA-S-IRIS



SPECIALTY PRODUCTS



STRADA-S
15.5MM X 19.6 MM
PMMA

CREE XP-E / XP-G
CA11248_STRADA-S
C11249_STRADA-S

**PHILIPS LUMILEDS
LUXEON REBEL**
CA11248_STRADA-S
C11249_STRADA-S

OSRAM OSOLON
CA11248_STRADA-S
C11249_STRADA-S

NICHIA NCS19 / NVS19
CA11248_STRADA-S
C11249_STRADA-S

SHARP DOUBLE DOME
CA11248_STRADA-S
C11249_STRADA-S

SEOUL Z5
CA11248_STRADA-S
C11249_STRADA-S



STRADA-S-14
13.9 MM X 19.6 MM
PMMA

CREE XP-E / XP-G / XB-D
D12114_STRADA-S-14
DA12115_STRADA-S-14

**PHILIPS LUMILEDS
LUXEON A**
D12114_STRADA-S-14
DA12115_STRADA-S-14

OSRAM OSOLON SQ EC
D12114_STRADA-S-14
DA12115_STRADA-S-14

NICHIA NCS19
D12114_STRADA-S-14
DA12115_STRADA-S-14



SOPHIE
150 X 20 MM
PMMA

CREE XP-G
C12446_SOPHIE

OSRAM OSOLON SQ PC
C12446_SOPHIE

NICHIA NCS19 / NVS19
C12446_SOPHIE

NICHIA 757
C12446_SOPHIE

**PHILIPS LUMILEDS LUXEON
REBEL / REBEL ES**
C12446_SOPHIE



LOTTA-A
15.4 MM X 19.6 MM
PMMA

**CREE XP-E / XP-G
& SEOUL Z5**
C11518_LOTTA-A
CA11519_LOTTA-A

**PHILIPS LUMILEDS
LUXEON REBEL**
C11518_LOTTA-A
CA11519_LOTTA-A

OSRAM OSOLON
C11518_LOTTA-A
CA11519_LOTTA-A

NICHIA NCS19 / NVS19
C11518_LOTTA-A
CA11519_LOTTA-A

**PHILIPS LUMILEDS
LUXEON REBEL ES**
C12353_LOTTA-A2
CA12396_LOTTA-A2



EMILY-WAS
D= 26 MM
PMMA

CREE XP-E / XP-G
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS

OSRAM OSOLON
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS

NICHIA NCS19 / NVS19
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS

CREE XM-L
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS

SEOUL Z5
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS

SHARP DOUBLE DOME
CA11998_EMILY-SS-WAS
CA12000_EMILY-O-WAS



OONA-A
9.9MM X 9.9MM
PMMA

OSRAM OSOLON SQ
C12769_OONA-A

SPECIALTY PRODUCTS



FLARE-MINI-A
D= 16MM
PMMA

CREE XP-G / XT-E / XB-D

C12763_FLARE-MINI-A
CA12674_FLARE-MINI-A
C12837_FLARE-MINI-A
CA12838_FLARE-MINI-A

**PHILIPS LUMILEDS
LUXEON A**

C12763_FLARE-MINI-A
CA12674_FLARE-MINI-A
C12837_FLARE-MINI-A
CA12838_FLARE-MINI-A

OSRAM OSOLON SQ

C12763_FLARE-MINI-A
CA12674_FLARE-MINI-A
C12837_FLARE-MINI-A
CA12838_FLARE-MINI-A

NICHIA NVS19

C12763_FLARE-MINI-A
CA12674_FLARE-MINI-A
C12837_FLARE-MINI-A
CA12838_FLARE-MINI-A



FLARE-MAXI
33,9 X 33,3 X 16,7 mm
PMMA

CREE XM-L / XP-G / XT-E

C12868_FLARE-MAXI
C13012_FLARE-MAXI-D

OSRAM OSOLON SQUARE PC

C12868_FLARE-MAXI

**PHILIPS LUMILEDS
LUXEON M**

C12868_FLARE-MAXI
C13012_FLARE-MAXI-D

**PHILIPS LUMILEDS LUXEON
REBEL ES**

C12868_FLARE-MAXI

219B

C12868_FLARE-MAXI



HB-5X1
123 MM X 25 MM
PMMA

CREE XP-E / XP-G

C12345_HB-5X1

CREE XT-E

C12345_HB-5X1

CREE XM-L

C12345_HB-5X1

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**

C12345_HB-5X1

OSOLON OSOLON

C12345_HB-5X1

NICHIA NCS19 / NVS19

C12345_HB-5X1

SEOUL Z5

C12345_HB-5X1

SHARP DOUBLE DOME

C12345_HB-5X1



HB-SQ-A
25MM X 25MM
PMMA

CREE XM-L / MX-3 / MX-6

C12767_HB-SQ-A

**PHILIPS LUMILEDS
LUXEON M**

C12767_HB-SQ-A

NICHIA x83

C12767_HB-SQ-A



HB-2X2
50 MM X 50 MM
PMMA

CREE XP-E / XP-G

C12361_HB-2X2

CREE XT-E

C12361_HB-2X2

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**

C12361_HB-2X2

OSRAM OSOLON

C12361_HB-2X2

NICHIA NCS19 / NVS19

C12361_HB-2X2

SEOUL Z5

C12361_HB-2X2

SHARP DOUBLE DOME

C12361_HB-2X2

CREE XM-L

C12361_HB-2X2



EMMA
9,9 X 9,9 mm
PMMA

CREE XP-G / XP-G2 / XB-D

C13055_EMMA-360

NICHIA NCS19

C13055_EMMA-360

OSOLON SQUARE EC

C13055_EMMA-360

**PHILIPS LUMILEDS
LUXEON A**

C13055_EMMA-360



REFLECTORS



REGINA
D= 19 MM
METALLIZED PC

CREE XP-E / XP-G
C11347_REGINA

OSRAM OSOLON
C11347_REGINA

PHILIPS LUMILEDS
LUXEON REBEL
C11347_REGINA

NICHIA NCS19 / NVS19
C11347_REGINA

SHARP DOUBLE DOME
C11347_REGINA

SEOUL Z5
C11347_REGINA



LISA2 REFLECTOR
D= 9.9 MM
HYPER-REFLECTIVE PC

CREE XP-E / XP-G / XB-D
C12469_LISA2-R-PIN

PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES
C12469_LISA2-R-PIN

PHILIPS LUMILEDS
LUXEON A
C12469_LISA2-R-PIN

OSRAM OSOLON
C12469_LISA2-R-PIN

NICHIA NVS19 / NCS19
C12469_LISA2-R-PIN

SHARP DOUBLE DOME
C12469_LISA2-R-PIN

SEOUL Z5
C12469_LISA2-R-PIN



LAURA REFLECTOR
21.6 MM X 21.6 MM
PMMA

CREE XP-E / XP-G
CA11525_LAURA-REFL-W
CA12981_LAURA-REF-XW*
CA12984_LAURA-REF-XW-PIN

PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES
CA11524_LAURA REFL-W
CX12983_LAURA-REF-XW*

NICHIA NCS19 / NVS19
CA11427_LAURA REFL-W
CA12982_LAURA-REF-XW*

SHARP DOUBLE DOME
CA11525_LAURA REFL-W

SEOUL Z5
CA11525_LAURA REFL-W



BRIDGET / LILY / CINDY
D= 22.2 MM
METALLIZED PC

BRIDGELUX LS-SERIES
C10918_BRIDGET-S
C10919_BRIDGET-M
C10920_BRIDGET-W

LUMINUS SST50 / SST90
C10977_LILY-S
C10978_LILY-M
C10979_LILY-W

CITIZEN CL-L230
C10982_CINDY-S
C10983_CINDY-M
C10984_CINDY-W

CITIZEN CL-L251
C10859_CINDY-S
C10980_CINDY-M
C10981_CINDY-W

SHARP MINI ZENIGATA
C10982_CINDY-S
C10983_CINDY-M
C10984_CINDY-W



RITA
D= 36 X 29 MM
PC

CREE XP-E / XP-G / XM-L / XB-D / XT-E
C12512_RITA-A
CA12514_RITA-A
C12516_RITA-WAS
CA13177_RITA-WAS

PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES
C12512_RITA-A
CA12514_RITA-A

LUMILEDS LUXEON M
C12512_RITA-A
CA12514_RITA-A
C12516_RITA-WAS
CA13177_RITA-WAS

NICHIA NCS19 / NVS19
C12512_RITA-A
CA12514_RITA-A

OSRAM OSOLON
C12512_RITA-A
CA12514_RITA-A
C12516_RITA-WAS
CA13177_RITA-WAS



BOOM
D= 22.2 MM
METALLIZED PC

CREE MC-E
CA10716_BOOM-S
CA10928_BOOM-M
CA10929_BOOM-W
CA12957_BOOM-XW*

REFLECTORS



MINNIE
D= 32.4 MM
METALLIZED PC

CREE MT-G

C12095_MINNIE-M
C11862_MINNIE-W
C12097_MINNIE-WWW

PHILIPS LUMILEDS LUXEON M

C11862_MINNIE-W
C12095_MINNIE-M
C12097_MINNIE-WWW



MINNIE (with holder)
D= 35 MM
METALLIZED PC

CREE MT-G / MT-G2

CA12239_MINNIE-M
CA12096_MINNIE-W
CA12240_MINNIE-WWW

PHILIPS LUMILEDS LUXEON M

CA12881_MINNIE-M
CA12882_MINNIE-W
CA12883_MINNIE-WWW



BOOMERANG
D= 22.2 MM
METALLIZED ABS

LEDENGIN 5W/10W

C10437_BOOMERANG

* Hyper-Reflective white PC



TYRA (TYCO)
D= 40 MM
METALLIZED PC

CREE MP-L

C11394_TYRA-S
C11395_TYRA-M
C11396_TYRA-W



TYRA2
D= 40 MM
METALLIZED PC

CREE MP-L

CA11475_TYRA2-S
CA11476_TYRA2-M
CA11477_TYRA2-W



TYRA3
D= 40 MM
METALLIZED PC

CITIZEN CL-230

C12358_TYRA3-W
C12359_TYRA3-WW

NICHIA NSBLL110

C12358_TYRA3-W
C12359_TYRA3-WW



BROOKE
D= 45 MM
METALLIZED PC

BRIDGELUX ES-SERIES

CA11181_BROOKE-S
CA11182_BROOKE-M
CA11183_BROOKE-W



BROOKE-SCR
D= 45 MM
METALLIZED PC

CITIZEN CL-L330 / CLL030

C12083_BROOKE-SCR-M
C12084_BROOKE-SCR-W

CITIZEN CL-L230

CP12351_BROOKE-SCR-M
CP12352_BROOKE-SCR-W

CREE CXA20

C12083_BROOKE-SCR-M
C12084_BROOKE-SCR-W

SHARP MEGAZENIGATA

C12083_BROOKE-SCR-M
C12084_BROOKE-SCR-W



BROOKE (MOLEX)
D= 45 MM
METALLIZED PC

BRIDGELUX ES-SERIES

C11506_BROOKE-S
C11507_BROOKE-M
C11508_BROOKE-W

CITIZEN CL-L330

C12119_BROOKE-M
C12120_BROOKE-W

REFLECTORS



VENLA
D= 45 MM
METALLIZED PC

PHILIPS LUMILEDS LUXEON S

C11773_VENLA-S
C11775_VENLA-M
C11776_VENLA-W
C11777_VENLA-WW



BARBARA
D= 70 MM
METALLIZED PC

BRIDGELUX ES-SERIES

C11552_BARBARA-S
C11553_BARBARA-W
C13032_BARBARA-WW
C12955_BARBARA-XW*

CITIZEN CL-L330

C11552_BARBARA-S
C11553_BARBARA-W
C13032_BARBARA-WW
C12955_BARBARA-XW*

CITIZEN CLL030

C11553_BARBARA-W
C13032_BARBARA-WW

SHARP MEGAZENIGATA

C11552_BARBARA-S
C11553_BARBARA-W
C13032_BARBARA-WW

CREE CXA20

C11552_BARBARA-S
C11553_BARBARA-W
C13032_BARBARA-WW
C12955_BARBARA-XW*

NICHIA COB

C11552_BARBARA-S
C11553_BARBARA-W
C13032_BARBARA-WW
C12955_BARBARA-XW*



BRITNEY
D= 70 MM
METALLIZED PC

BRIDGELUX RS-SERIES

CA11401_BRITNEY-M
CA11402_BRITNEY-W
CA12900_BRITNEY-XW*



MIRELLA
D= 50 MM
METALLIZED PC

CITIZEN CLL010 / CLL020

C12476_MIRELLA-50-S
C12477_MIRELLA-50-M
C12478_MIRELLA-50-W
CN12483_MIRELLA-50-S-DL
CN12484_MIRELLA-50-M-DL
CN12485_MIRELLA-50-W-DL

SHARP MEGAZENIGATA

C12476_MIRELLA-50-S
C12477_MIRELLA-50-M
C12478_MIRELLA-50-W
CN12483_MIRELLA-50-S-DL
CN12484_MIRELLA-50-M-DL
CN12485_MIRELLA-50-W-DL

CREE XM-L

C12480_MIRELLA-50-S-PIN
C12481_MIRELLA-50-M-PIN
C12482_MIRELLA-50-W-PIN
CN12486_MIRELLA-50-S-PIN-DL
CN12487_MIRELLA-50-M-PIN-DL
CN12488_MIRELLA-50-W-PIN-DL

PHILIPS LUMILEDS LUXEON M

C12480_MIRELLA-50-S-PIN
C12481_MIRELLA-50-M-PIN
C12482_MIRELLA-50-W-PIN
CN12486_MIRELLA-50-S-PIN-DL
CN12487_MIRELLA-50-M-PIN-DL
CN12488_MIRELLA-50-W-PIN-DL



LENINA
D= 74 MM
METALLIZED PC

BRIDGELUX ES

CN12600_LENINA-S
CN12601_LENINA-M
CN12602_LENINA-W
CN12603_LENINA-S-DL
CN12604_LENINA-M-DL
CN12605_LENINA-W-DL
CN12960_LENINA-XW*

CREE CXA20

CN12638_LENINA-S
CN12639_LENINA-M
CN12640_LENINA-W
CN12641_LENINA-S-DL
CN12642_LENINA-M-DL
CN12643_LENINA-W-DL
CN12959_LENINA-XW*

SHARP MEGAZENIGATA

CN12644_LENINA-S
CN12645_LENINA-M
CN12646_LENINA-W
CN12647_LENINA-S-DL
CN12648_LENINA-M-DL
CN12649_LENINA-W-DL
CN12962_LENINA-XW*

CITIZEN CL-L340

CN12650_LENINA-S
CN12651_LENINA-M
CN12652_LENINA-W
CN12653_LENINA-S-DL
CN12654_LENINA-M-DL
CN12655_LENINA-W-DL
CN12969_LENINA-XW*

CITIZEN CLL030

CN12700_LENINA-S
CN12701_LENINA-M
CN12702_LENINA-W
CN12703_LENINA-S-DL
CN12704_LENINA-M-DL
CN12705_LENINA-W-DL
CN12963_LENINA-XW*

CITIZEN CLL040

CN12706_LENINA-S
CN12707_LENINA-M
CN12708_LENINA-W
CN12709_LENINA-S-DL
CN12710_LENINA-M-DL
CN12711_LENINA-W-DL
CN12965_LENINA-XW*

OSRAM SOLERIQ E30

CN13110_LENINA-S
CN13111_LENINA-M
CN13112_LENINA-W
CN13113_LENINA-S-DL
CN13114_LENINA-M-DL
CN13115_LENINA-W-DL
CN13204_LENINA-XW

* Hyper-Reflective white PC

REFLECTORS



LENINA
D= 74 MM
METALLIZED PC

BRIDGELUX RS

CN12656_LENINA-S
CN12657_LENINA-M
CN12658_LENINA-W
CN12659_LENINA-S-DL
CN12660_LENINA-M-DL
CN12661_LENINA-W-DL
CN12961_LENINA-XW*

NICHIA COB204 / COB-L110

CN12918_LENINA-S
CN12919_LENINA-M
CN12920_LENINA-W
CN12921_LENINA-S-DL
CN12922_LENINA-M-DL
CN12923_LENINA-W-DL
CN12968_LENINA-XW*



LENA-WAS
D= 111 MM
METALLIZED PC

BRIDGELUX BXRA ES / RS

CN13161_LENINA-WAS
CN13160_LENINA-WAS
CN13171_LENINA-WAS-DL
CN13170_LENINA-WAS-DL

CITIZEN CLL030

CN13163_LENINA-WAS
CN13173_LENINA-WAS-DL

CITIZEN CLL040

CN13164_LENINA-WAS
CN13174_LENINA-WAS-DL

CREE CXA2011

CN13193_LENINA-WAS
CN13194_LENINA-WAS-DL

OSRAM SOLERIQ E30

CN13166_LENINA-WAS
CN13176_LENINA-WAS-DL

SHARP MEGAZENIGATA

CN13162_LENINA-WAS
CN13172_LENINA-WAS-DL



LENA
D= 111 MM
METALLIZED PC

NICHIA COB110 / 204

CN12099_LENINA-S
CN12110_LENINA-S-DL
CN12162_LENINA-M
CN12165_LENINA-M-DL
CN12100_LENINA-W
CN12111_LENINA-W-DL

CITIZEN CL-L340

CN12101_LENINA-S
CN12112_LENINA-S-DL
CN12161_LENINA-M
CN12166_LENINA-M-DL
CN12102_LENINA-W
CN12113_LENINA-W-DL

CITIZEN CLL030

CN12712_LENINA-S
CN12713_LENINA-M
CN12714_LENINA-W
CN12718_LENINA-S-DL
CN12719_LENINA-M-DL
CN12720_LENINA-W-DL

CITIZEN CLL040

CN12715_LENINA-S
CN12716_LENINA-M
CN12717_LENINA-W
CN12721_LENINA-S-DL
CN12722_LENINA-M-DL
CN12723_LENINA-W-DL

CREE CXA20

CN12107_LENINA-S-DL
CN12163_LENINA-M
CN12167_LENINA-M-DL
CN12108_LENINA-W
CN12109_LENINA-W-DL

BRIDGELUX ES-SERIES

CN12157_LENINA-S
CN12159_LENINA-S-DL
CN12164_LENINA-M
CN12168_LENINA-M-DL
CN12158_LENINA-W
CN12160_LENINA-W-DL

BRIDGELUX RS-SERIES

CN12301_LENINA-S
CN12304_LENINA-S-DL
CN12302_LENINA-M
CN12305_LENINA-M-DL
CN12303_LENINA-W
CN12306_LENINA-W-DL



LENA
D= 111 MM
METALLIZED PC

SHARP MEGAZENIGATA

CN12293_LENINA-S
CN12296_LENINA-S-DL
CN12294_LENINA-M
CN12297_LENINA-M-DL
CN12295_LENINA-W
CN12298_LENINA-W-DL

PHILIPS LUMILEDS LUXEON K

CN12293_LENINA-S
CN12296_LENINA-S-DL
CN12294_LENINA-M
CN12297_LENINA-M-DL
CN12295_LENINA-W
CN12298_LENINA-W-DL

OSRAM SOLERIQ E30

CN12293_LENINA-S
CN12296_LENINA-S-DL
CN12294_LENINA-M
CN12297_LENINA-M-DL
CN12295_LENINA-W
CN12298_LENINA-W-DL



LENA-X-WAS
D= 111 MM
HYPER-REFLECTIVE PC

CITIZEN CLL040

CN13101_LENINA-X-WAS



LENA
D= 111 MM
METALLIZED PC

CITIZEN CL-340

CN12367_LENINA-FRESNEL



MULTIPLE LENSES



SATU
D= 21.8 MM (3UP)
PMMA

CREE XP-E / XP-G

C11916_SATU-S
C11917_SATU-O
C11602_SATU-M
C11544_SATU-W

PHILIPS LUMILEDS

LUXEON REBEL

C11916_SATU-S
C11917_SATU-O
C11602_SATU-M
C11544_SATU-W

OSRAM OSOLON

C11916_SATU-S
C11917_SATU-O
C11602_SATU-M
C11544_SATU-W

NICHIA NCS19 / NVS19

C11916_SATU-S
C11917_SATU-O
C11602_SATU-M
C11544_SATU-W

SEOUL Z5

C11916_SATU-S
C11917_SATU-O
C11602_SATU-M
C11544_SATU-W

SHARP DOUBLE DOME

C11916_SATU-S
C11917_SATU-O
C11602_SATU-M
C11544_SATU-W



CUTE-3
D= 35 MM (3UP)
PMMA

CREE XP-E / XP-G

C10754_CUTE-3-SS
C11333_CUTE-3-SS
C10755_CUTE-3-M
C11334_CUTE-3-M
C10756_CUTE-3-W

CREE XT-E

C10754_CUTE-3-SS
C11333_CUTE-3-SS
C10755_CUTE-3-M
C11334_CUTE-3-M
C10756_CUTE-3-W

PHILIPS LUMILEDS

LUXEON REBEL / REBEL ES

C10754_CUTE-3-SS
C10755_CUTE-3-M
C10756_CUTE-3-W

NICHIA NCS19 / NVS19

C10754_CUTE-3-SS
C11333_CUTE-3-SS
C10755_CUTE-3-M
C11334_CUTE-3-M
C10756_CUTE-3-W

OSRAM OSOLON

C10754_CUTE-3-SS
C10755_CUTE-3-M
C10756_CUTE-3-W

SHARP DOUBLE DOME

C10754_CUTE-3-SS
C10755_CUTE-3-M
C10756_CUTE-3-W

CREE XM-L

C10754_CUTE-3-SS
C11333_CUTE-3-SS
C10755_CUTE-3-M
C11334_CUTE-3-M
C10756_CUTE-3-W

SEOUL Z5

C10754_CUTE-3-SS
C10755_CUTE-3-M
C10756_CUTE-3-W

OSRAM PLATINUM/ DRAGON+

C10710_CUTE-3-S
C10711_CUTE-3-M
C10712_CUTE-3-W



GT3
D= 35 MM (3UP)
PMMA

CREE XP-E / XP-G

C10891_GT3-S
C10892_GT3-M
C10893_GT3-W
C11624_GT3-WW

PHILIPS LUMILEDS

LUXEON REBEL / REBEL ES

C10891_GT3-S
C10892_GT3-M
C10893_GT3-W
C11624_GT3-WW

OSRAM OSOLON

C10891_GT3-S
C10892_GT3-M
C10893_GT3-W
C11624_GT3-WW

NICHIA NCS19 / NVS19

C10891_GT3-S
C10892_GT3-M
C10893_GT3-W
C11624_GT3-WW

SHARP DOUBLE DOME

C10891_GT3-S
C10892_GT3-M
C10893_GT3-W
C11624_GT3-WW

SEOUL Z5

C10891_GT3-S
C10892_GT3-M
C10893_GT3-W
C11624_GT3-WW



MULTIPLE LENSES



ANNA-3
D= 40 MM (3UP)
PMMA

CREE XP-E / XP-G

C11710_ANNA-40-3-S
C11711_ANNA-40-3-M
C11712_ANNA-40-3-W

CREE XB-D

C11711_ANNA-40-3-M
C11712_ANNA-40-3-W

OSRAM OSLON

C11710_ANNA-40-3-S
C11711_ANNA-40-3-M
C11712_ANNA-40-3-W

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**

C11710_ANNA-40-3-S
C11711_ANNA-40-3-M
C11712_ANNA-40-3-W

NICHIA NCS19 / NVS19

C11710_ANNA-40-3-S
C11711_ANNA-40-3-M
C11712_ANNA-40-3-W

SEOUL Z5

C11710_ANNA-40-3-S
C11711_ANNA-40-3-M
C11712_ANNA-40-3-W

SHARP DOUBLE DOME

C11710_ANNA-40-3-S
C11711_ANNA-40-3-M
C11712_ANNA-40-3-W



ANNA-4
D= 40 MM (4UP)
PMMA

CREE XP-E / XP-G

C11793_ANNA-40-4-S
C11794_ANNA-40-4-M
C11795_ANNA-40-4-W

CREE XB-D

C11794_ANNA-40-4-M
C11795_ANNA-40-4-W

OSRAM OSLON

C11793_ANNA-40-4-S
C11794_ANNA-40-4-M
C11795_ANNA-40-4-W

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**

C11793_ANNA-40-4-S
C11794_ANNA-40-4-M
C11795_ANNA-40-4-W

NICHIA NCS19 / NVS19

C11793_ANNA-40-4-S
C11794_ANNA-40-4-M
C11795_ANNA-40-4-W

SEOUL Z5

C11793_ANNA-40-4-S
C11794_ANNA-40-4-M
C11795_ANNA-40-4-W

SHARP DOUBLE DOME

C11793_ANNA-40-4-S
C11794_ANNA-40-4-M
C11795_ANNA-40-4-W



CUTE-4
D= 35 MM (4UP)
PMMA

CREE MX6 / MX3

C10812_CUTE-4-M
C10813_CUTE-4-W

NICHIA 6Nx83 / 3Nx83

C10812_CUTE-4-M
C10813_CUTE-4-W



MULTIPLE LENSES



GT4
D= 35 MM (4UP)
PMMA

CREE XP-E / XP-G

C10921_GT4-S
C10922_GT4-M
C10923_GT4-W
C10975_GT4-WW

CREE XB-D

C10921_GT4-S
C10922_GT4-M
C10923_GT4-W
C10924_GT4-WW

PHILIPS LUMILEDS

LUXEON REBEL

C10971_GT4-S
C10972_GT4-M
C10973_GT4-W
C10974_GT4-WW

PHILIPS LUMILEDS

LUXEON REBEL ES

C10921_GT4-S
C10922_GT4-M
C10923_GT4-W
C10975_GT4-WW

OSRAM OSOLON

C10921_GT4-S
C10922_GT4-M
C10923_GT4-W
C10975_GT4-WW

NICHIA NCS19 / NVS19

C10971_GT4-S
C10972_GT4-M
C10973_GT4-W
C10974_GT4-WW

SHARP DOUBLE DOME

C10921_GT4-S
C10922_GT4-M
C10923_GT4-W
C10975_GT4-WW

SEOUL Z5

C10921_GT4-S
C10922_GT4-M
C10923_GT4-W
C10975_GT4-WW



ANNA-5
D= 40 MM (5UP)
PMMA

CREE XP-E / XP-G

C11713_ANNA-40-5-S
C11714_ANNA-40-5-M
C11715_ANNA-40-5-W

CREE XB-D

C11714_ANNA-40-5-M
C11715_ANNA-40-5-W

OSRAM OSOLON

C11713_ANNA-40-5-S
C11714_ANNA-40-5-M
C11715_ANNA-40-5-W

PHILIPS LUMILEDS

LUXEON REBEL / REBEL ES

C11713_ANNA-40-5-S
C11714_ANNA-40-5-M
C11715_ANNA-40-5-W

NICHIA NCS19 / NVS19

C11713_ANNA-40-5-S
C11714_ANNA-40-5-M
C11715_ANNA-40-5-W

SEOUL Z5

C11713_ANNA-40-5-S
C11714_ANNA-40-5-M
C11715_ANNA-40-5-W

SHARP DOUBLE DOME

C11713_ANNA-40-5-S
C11714_ANNA-40-5-M
C11715_ANNA-40-5-W



ANNA-6
D= 40 MM (6UP)
PMMA

CREE XP-E / XP-G

C11805_ANNA-40-6-S
C11806_ANNA-40-6-M
C11807_ANNA-40-6-W

CREE XB-D

C11806_ANNA-40-6-M
C11807_ANNA-40-6-W

OSRAM OSOLON

C11805_ANNA-40-6-S
C11806_ANNA-40-6-M
C11807_ANNA-40-6-W

PHILIPS LUMILEDS LUXEON

REBEL / REBEL ES

C11805_ANNA-40-6-S
C11806_ANNA-40-6-M
C11807_ANNA-40-6-W

NICHIA NCS19 / NVS19

C11805_ANNA-40-6-S
C11806_ANNA-40-6-M
C11807_ANNA-40-6-W

SEOUL Z5

C11805_ANNA-40-6-S
C11806_ANNA-40-6-M
C11807_ANNA-40-6-W

SHARP DOUBLE DOME

C11805_ANNA-40-6-S
C11806_ANNA-40-6-M
C11807_ANNA-40-6-W



MULTIPLE LENSES



ANNA-7
D= 40 MM (7UP)
PMMA

CREE XP-E / XP-G
C11716_ANNA-40-7-S
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W

CREE XB-D
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W

OSRAM OSOLON
C11716_ANNA-40-7-S
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11716_ANNA-40-7-S
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W

NICHIA NCS19 / NVS19
C11716_ANNA-40-7-S
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W

SEOUL Z5
C11716_ANNA-40-7-S
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W

SHARP DOUBLE DOME
C11716_ANNA-40-7-S
C11717_ANNA-40-7-M
C11718_ANNA-40-7-W



ANNA-3
D= 50 MM (3UP)
PMMA

CREE XP-E / XP-G
C11606_ANNA-50-3-S
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W

CREE XB-D
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W

OSRAM OSOLON
C11606_ANNA-50-3-S
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11606_ANNA-50-3-S
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W

NICHIA NCS19 / NVS19
C11606_ANNA-50-3-S
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W

SEOUL Z5
C11606_ANNA-50-3-S
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W

SHARP DOUBLE DOME
C11606_ANNA-50-3-S
C11607_ANNA-50-3-M
C11608_ANNA-50-3-W



MARTHA / TUIJA
D= 50 MM (3UP)
PMMA

PLATINUM/DRAGON+
C10366_PLATINUM-3-SS
C10367_PLATINUM-3-M
C10365_PLATINUM-3-W

CREE XB-D
C11191_TUIJA-3-W
C11192_TUIJA-3-SS
C11193_TUIJA-3-M
C12150_TUIJA-3-M2

CREE XP-E / XP-G
C11192_TUIJA-3-SS
C11193_TUIJA-3-M
C11191_TUIJA-3-W

**PHILIPS LUMILEDS LUXEON
REBEL / REBEL ES**
C11192_TUIJA-3-SS
C11193_TUIJA-3-M
C11191_TUIJA-3-W

OSRAM OSOLON
C11193_TUIJA-3-M
C11192_TUIJA-3-SS
C11191_TUIJA-3-W

NICHIA NCS19 / NVS19
C11192_TUIJA-3-SS
C11193_TUIJA-3-M
C11191_TUIJA-3-W

SHARP DOUBLE DOME
C11192_TUIJA-3-SS
C11193_TUIJA-3-M
C11191_TUIJA-3-W

SEOUL Z5
C11192_TUIJA-3-SS
C11193_TUIJA-3-M
C11191_TUIJA-3-W



MULTIPLE LENSES



ANNA-4
D= 50 MM (4UP)
PMMA

CREE XP-E / XP-G

C11799_ANNA-50-4-S
C11800_ANNA-50-4-M
C11801_ANNA-50-4-W

CREE XB-D

C11800_ANNA-50-4-M
C11801_ANNA-50-4-W

OSRAM OSLON

C11799_ANNA-50-4-S
C11800_ANNA-50-4-M
C11801_ANNA-50-4-W

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

C11799_ANNA-50-4-S
C11800_ANNA-50-4-M
C11801_ANNA-50-4-W

NICHIA NCS19 / NVS19

C11799_ANNA-50-4-S
C11800_ANNA-50-4-M
C11801_ANNA-50-4-W

SEOUL Z5

C11799_ANNA-50-4-S
C11800_ANNA-50-4-M
C11801_ANNA-50-4-W

SHARP DOUBLE DOME

C11799_ANNA-50-4-S
C11800_ANNA-50-4-M
C11801_ANNA-50-4-W



ANNA-5
D= 50 MM (5UP)
PMMA

CREE XP-E / XP-G

C11612_ANNA-50-5-S
C11613_ANNA-50-5-M
C11614_ANNA-50-5-W

CREE XB-D

C11613_ANNA-50-5-M
C11614_ANNA-50-5-W

OSRAM OSLON

C11612_ANNA-50-5-S
C11613_ANNA-50-5-M
C11614_ANNA-50-5-W

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

C11612_ANNA-50-5-S
C11613_ANNA-50-5-M
C11614_ANNA-50-5-W

NICHIA NCS19 / NVS19

C11612_ANNA-50-5-S
C11613_ANNA-50-5-M
C11614_ANNA-50-5-W

SEOUL Z5

C11612_ANNA-50-5-S
C11613_ANNA-50-5-M
C11614_ANNA-50-5-W

SHARP DOUBLE DOME

C11612_ANNA-50-5-S
C11613_ANNA-50-5-M
C11614_ANNA-50-5-W



ANNA-6
D= 50 MM (6UP)
PMMA

CREE XP-E / XP-G

C11811_ANNA-50-6-S
C11812_ANNA-50-6-M
C11813_ANNA-50-6-W

CREE XB-D

C11812_ANNA-50-6-M
C11813_ANNA-50-6-W

OSRAM OSLON

C11811_ANNA-50-6-S
C11812_ANNA-50-6-M
C11813_ANNA-50-6-W

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

C11811_ANNA-50-6-S
C11812_ANNA-50-6-M
C11813_ANNA-50-6-W

NICHIA NCS19 / NVS19

C11811_ANNA-50-6-S
C11812_ANNA-50-6-M
C11813_ANNA-50-6-W

SEOUL Z5

C11811_ANNA-50-6-S
C11812_ANNA-50-6-M
C11813_ANNA-50-6-W

SHARP DOUBLE DOME

C11811_ANNA-50-6-S
C11812_ANNA-50-6-M
C11813_ANNA-50-6-W



MULTIPLE LENSES



ANNA-7
D= 50 MM (3UP)
PMMA

CREE XP-E / XP-G
C11670_ANNA-7-S
C11679_ANNA-7-M
C11682_ANNA-7-W

CREE XB-D
C11679_ANNA-7-M
C11682_ANNA-7-W

OSRAM OSLO
C11670_ANNA-7-S
C11679_ANNA-7-M
C11682_ANNA-7-W

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11670_ANNA-7-S
C11679_ANNA-7-M
C11682_ANNA-7-W

NICHIA NCS19 / NVS19
C11670_ANNA-7-S
C11679_ANNA-7-M
C11682_ANNA-7-W

SEOUL Z5
C11670_ANNA-7-S
C11679_ANNA-7-M
C11682_ANNA-7-W

SHARP DOUBLE DOME
C11670_ANNA-7-S
C11679_ANNA-7-M
C11682_ANNA-7-W



TAMPA
D= 38 MM (7UP)
PMMA

NICHIA 6Nx83 / 3Nx83
C10373_NIS83-MX-7-M
C10633_NIS83-MX-7-MD
C10585_NIS83-MX-7-W
C10586_NIS83-MX-7-WW

CREE MX6 / MX3
C10373_NIS83-MX-7-M
C10633_NIS83-MX-7-MD
C10585_NIS83-MX-7-W
C10586_NIS83-MX-7-WW

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11232_RER-7-MD
C11230_RER-7-W
C11231_RER-7-WW

**PHILIPS LUMILEDS
LUXEON A**
C12771_RER-7-S



PENTA
D= 35 MM (5UP)
PMMA

**OSRAM PLATINUM/
DRAGON+**
C10472_RER-5-M

CREE MX6 / MX3
C11281_NIS83-MX-5-D
C10472_RER-5-M
C10814_NIS83-MX-5-W

NICHIA 6Nx83 / 3Nx83
C11281_NIS83-MX-5-D
C10472_RER-5-M
C10814_NIS83-MX-5-W



MARTHA / DOLLY
D= 50 MM (3UP)
PMMA

PLATINUM/DRAGON+
C10268_TITANUM-3-S
CA10368_TITANUM-3-M

NICHIA 6Nx83 / 3Nx83
C10436_NIS83-MX-3-M
C10364_NIS83-MX-3-W

**PHILIPS LUMILEDS
LUXEON K2**
C10256_APOLLO-3-S
C10369_APOLLO-3-M

SEOUL P3 / SEOUL P4
C10257_LAIKA-3-S
CA10370_LAIKA-3-M
C10363_LAIKA-3-W

CREE MX6 / MX3
C10436_NIS83-MX-3-M
C10364_NIS83-MX-3-W



PENTA
D= 35 MM (5UP)
PMMA

**PHILIPS LUMILEDS
LUXEON REBEL**
C10472_RER-5-M

CREE XP-E / XP-G
F10390_PENTA-5-M
C10472_RER-5-M

SHARP DOUBLE DOME
F10390_PENTA-5-M
C10472_RER-5-M

SEOUL Z5
F10390_PENTA-5-M
C10472_RER-5-M



MULTIPLE LENSES



QUAK
D= 50 MM (4UP)
PMMA

CREE MC-E

C10702_ROCKET-4-W

PLATINUM/DAGON+

C10704_PLATINUM-4-OS
C10703_PLATINUM-4-OM

NICHIA 6Nx83 / 3Nx83

C10385_NIS83-MX-4-SS
C10386_NIS83-MX-4-M
C10387_NIS83-MX-4-W

CREE MX6 / MX3

C10385_NIS83-MX-4-SS
C10386_NIS83-MX-4-M
C10387_NIS83-MX-4-W



MELODY
D= 50,6 MM
PMMA

CREE XP-G / XB-D / XT-E / XM-L

C12782_MELODY-4-M

LUXEON M

C12782_MELODY-4-M

LUXEON A

C12782_MELODY-4-M

OSRAM OSOLON SQ

C12782_MELODY-4-M

NICHIA NVS19

C12782_MELODY-4-M



ANGIE
D= 34 MM (4UP)
PMMA

CREE XP-E / XP-G

C12285_ANGIE-S
C12286_ANGIE-M
C12287_ANGIE-M2
C12288_ANGIE-W

OSRAM OSOLON

C12285_ANGIE-S
C12286_ANGIE-M
C12287_ANGIE-M2
C12288_ANGIE-W

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

C12285_ANGIE-S
C12286_ANGIE-M
C12287_ANGIE-M2
C12288_ANGIE-W

NICHIA NCS19 / NVS19

C12285_ANGIE-S
C12286_ANGIE-M
C12287_ANGIE-M2
C12288_ANGIE-W

SEOUL Z5

C12285_ANGIE-S
C12286_ANGIE-M
C12287_ANGIE-M2
C12288_ANGIE-W

SHARP DOUBLE DOME

C12285_ANGIE-S
C12286_ANGIE-M
C12287_ANGIE-M2
C12288_ANGIE-W



MELODY
D= 50,6 MM
PMMA

CREE XP-G / XB-D / XT-E / XM-L

C13095_MELODY-3-M

LUXEON A / REBEL / REBEL ES

C12782_MELODY-4-M

OSRAM OSOLON SSL 80 / 150

C12782_MELODY-4-M



SANDRA
D= 70 MM (12UP)
PMMA

CREE XP-E / XP-G

C11814_SANDRA-12-M
C11700_SANDRA-12-W

OSRAM OSOLON

C11814_SANDRA-12-M
C11700_SANDRA-12-W

NICHIA NCS19 / NVS19

C11814_SANDRA-12-M
C11700_SANDRA-12-W

PHILIPS LUMILEDS LUXEON REBEL / REBEL ES

C11814_SANDRA-12-M
C11700_SANDRA-12-W

SEOUL Z5

C11814_SANDRA-12-M
C11700_SANDRA-12-W

SHARP DOUBLE DOME

C11814_SANDRA-12-M
C11700_SANDRA-12-W



EMY
D= 50 MM (6UP)
PMMA

NICHIA 6Nx83 / 3Nx83

C10535_NIS83-MX-6-S

CREE MX6 / MX3

C10535_NIS83-MX-6-S



MULTIPLE LENSES



PETUNIA
D= 29.5MM X 46.5MM
PMMA

CREE XP-G / XP-E / XB-D
C12528_PETUNIA

OSRAM OSLOON SQ / 150
C12528_PETUNIA

PHILIPS LUMILEDS LUXEON A
C12528_PETUNIA

NICHIA NVS19
C12528_PETUNIA



VIRPI
D= 75MM X 75MM
PMMA

CREE XP-G / XT-E / XB-D
C12607_VIRPI-S
C12608_VIRPI-M
C12609_VIRPI-W

OSRAM OSLOON SQ
C12607_VIRPI-S
C12608_VIRPI-M
C12609_VIRPI-W

PHILIPS LUMILEDS LUXEON A
C12607_VIRPI-S
C12608_VIRPI-M
C12609_VIRPI-W

PHILIPS LUMILEDS LUXEON REBEL ES
C12607_VIRPI-S
C12608_VIRPI-M
C12609_VIRPI-W

NICHIA NVS19
C12607_VIRPI-S
C12608_VIRPI-M
C12609_VIRPI-W

ZOOMABLE OPTICS



ZOWIE-MINI
D= 14,83 MM
PMMA

CREE XP-G / XP-E
CC13052_ZOWIE-MINI

OSRAM OSLOON SQ EC
CC13052_ZOWIE-MINI

PHILIPS LUMILEDS LUXEON A
CC13052_ZOWIE-MINI

NICHIA NVS19
CC13052_ZOWIE-MINI



ZOWIE-MAXI
D= 65,4 MM
PMMA

CREE XP-G / XP-E / XM-L
CP13054_ZOWIE-MAXI

OSRAM OSLOON SQ EC
CP13054_ZOWIE-MAXI

PHILIPS LUMILEDS LUXEON A
CP13054_ZOWIE-MAXI

NICHIA NVS19
CP13054_ZOWIE-MAXI



STREET LIGHTING



STRADA-C/C2
15.5 MM X 19.6MM
PMMA

CREE XP-E / XP-G
C11252_STRADA-C2
CA11253_STRADA-C2

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11252_STRADA-C2
CA11253_STRADA-C2

NICHIA NCS19 / NVS19
C11252_STRADA-C2
CA11253_STRADA-C2

OSRAM OSOLON
C11252_STRADA-C2
CA11253_STRADA-C2

SHARP DOUBLE DOME
C11252_STRADA-C2
CA11253_STRADA-C2

SEOUL Z5
C11252_STRADA-C2
CA11253_STRADA-C2

NICHIA 6Nx83 / 3Nx83
C11277_STRADA-C
CA11348_STRADA-C

CREE MX6 / MX3
C11277_STRADA-C
CA11348_STRADA-C

**OSRAM PLATINUM /
DRAGON+**
C10915_STRADA-C
CA10916_STRADA-C



STRADA-DW
15.4 MM X 19.6 MM
PMMA

CREE XP-E / XP-G
C11255_STRADA-DW
CA11256_STRADA-DW

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11255_STRADA-DW
CA11256_STRADA-DW

NICHIA NCS19 / NVS19
C11255_STRADA-DW
CA11256_STRADA-DW

OSRAM OSOLON
C11255_STRADA-DW
CA11256_STRADA-DW

SHARP DOUBLE DOME
C11255_STRADA-DW
CA11256_STRADA-DW

SEOUL Z5
C11255_STRADA-DW
CA11256_STRADA-DW

NICHIA 6Nx83 / 3Nx83
C11242_STRADA-DW
CA11243_STRADA-DW

CREE MX6 / MX3
C11242_STRADA-DW
CA11243_STRADA-DW

**OSRAM PLATINUM /
DRAGON+**
C11132_STRADA-DW
CA11180_STRADA-DW



STRADA-B/B2
15.4 MM X 19.6 MM
PMMA

OSRAM OSOLON
C10949_STRADA-B2
CA10950_STRADA-B2

**OSRAM PLATINUM /
DRAGON+**
C10908_STRADA-B
CA10914_STRADA-B

CREE XP-E / XP-G
C10926_STRADA-B
CA10927_STRADA-B

C10949_STRADA-B2
CA10950_STRADA-B2

NICHIA NCS19 / NVS19
C10949_STRADA-B2
CA10950_STRADA-B2

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C10949_STRADA-B2
CA10950_STRADA-B2

SHARP DOUBLE DOME
C10949_STRADA-B2
CA10950_STRADA-B2

SEOUL Z5
C10926_STRADA-B
CA10927_STRADA-B

C10949_STRADA-B2
CA10950_STRADA-B2



STRADA-DN
15.4 MM X 19.6 MM
PMMA

NICHIA 6Nx83 / 3Nx83
C11244_STRADA-DN
CA11245_STRADA-DN

CREE MX6 / MX3
C11244_STRADA-DN
CA11245_STRADA-DN



STREET LIGHTING



STRADA-A
15.4 MM X 19.6 MM
PMMA

CREE XP-E / XP-G
C10818_STRADA-A
CA10823_STRADA-A

C12219_STRADA-A2
C12220_STRADA-A2

SEOUL Z5
C10818_STRADA-A
CA10823_STRADA-A

C12219_STRADA-A2
C12220_STRADA-A2

SHARP DOUBLE DOME
C12219_STRADA-A2
C12220_STRADA-A2

**OSRAM PLATINUM/
DRAGON+**
C10758_STRADA-A
CA10820_STRADA-A



STRADA-T-DW
15.5 MM X 19.6 MM
PMMA

CREE XP-E / XP-G
C11425_STRADA-T-DW
CA11426_STRADA-T-DW

CREE XB-D
C11425_STRADA-T-DW
CA11426_STRADA-T-DW

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11425_STRADA-T-DW
CA11426_STRADA-T-DW

OSRAM OSOLON
C11425_STRADA-T-DW
CA11426_STRADA-T-DW

NICHIA NCS19 / NVS19
C11425_STRADA-T-DW
CA11426_STRADA-T-DW

SHARP DOUBLE DOME
C11425_STRADA-T-DW
CA11426_STRADA-T-DW

SEOUL Z5
C11425_STRADA-T-DW
CA11426_STRADA-T-DW



STRADA-T-DW
15.5MM X 19.6 MM
PMMA

NICHIA 6Nx83 / 3Nx83
C12331_STRADA-T-DW
CA12333_STRADA-T-DW

CREE MX6 / MX3
C12331_STRADA-T-DW
CA12333_STRADA-T-DW



STRADA-FT
15.5 MM X 19.6 MM
PMMA

CREE XP-E / XP-G
C12049_STRADA-FT
CA12050_STRADA-FT

CREE XB-D
C12049_STRADA-FT
CA12050_STRADA-FT

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C12049_STRADA-FT
CA12050_STRADA-FT

OSRAM OSOLON
C12049_STRADA-FT
CA12050_STRADA-FT

NICHIA NCS19 / NVS19
C12049_STRADA-FT
CA12050_STRADA-FT

SEOUL Z5
C12049_STRADA-FT
CA12050_STRADA-FT

SHARP DOUBLE DOME
C12049_STRADA-FT
CA12050_STRADA-FT



STREET LIGHTING



STRADA-T-DN
15,5 MM X 19,6 MM
PMMA

CREE XP-E / XP-G
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

CREE XB-D
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

OSRAM OSOLON
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

NICHIA NCS19 / NVS19
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

SHARP DOUBLE DOME
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

SEOUL Z5
C11415_STRADA-T-DN
CA11416_STRADA-T-DN

NICHIA 6Nx83 / 3Nx83
C12329_STRADA-T-DN
CA12332_STRADA-T-DN

CREE MX6 / MX3
C12329_STRADA-T-DN
CA12332_STRADA-T-DN



STRADA-SQ-T-DWC
25,4 MM X 25,4 MM
PMMA

PHILIPS LUMILEDS LUXEON M
C12726_STRADA-SQ-T-DWC
CA12889_STRADA-SQ-T-DWC

CREE XM-L
C12726_STRADA-SQ-T-DWC
CA12889_STRADA-SQ-T-DWC



STRADA-FW
15,5 MM X 19,6 MM
PMMA

CREE XP-E / XP-G
C12086_STRADA-FW
CA12087_STRADA-FW

CREE XT-E
C12086_STRADA-FW
CA12087_STRADA-FW

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**
C12086_STRADA-FW
CA12087_STRADA-FW

OSRAM OSOLON
C12086_STRADA-FW
CA12087_STRADA-FW

NICHIA NCS19 / NVS19
C12086_STRADA-FW
CA12087_STRADA-FW

SEOUL Z5
C12086_STRADA-FW
CA12087_STRADA-FW

SHARP DOUBLE DOME
C12086_STRADA-FW
CA12087_STRADA-FW

NICHIA 6Nx83 / 3Nx83
C12226_STRADA-FW
CA12238_STRADA-FW

CREE MX6 / MX3
C12226_STRADA-FW
CA12238_STRADA-FW



STRADA-SQ-VSM
25,4 MM X 25,4 MM
PMMA

PHILIPS LUMILEDS LUXEON M
C12727_STRADA-SQ-VSM
CA12891_STRADA-SQ-VSM

CREE XM-L
C12727_STRADA-SQ-VSM
CA12891_STRADA-SQ-VSM



STRADA-SQ-T-DN
25,2 MM X 25,2 MM
PMMA

CREE XP-E / XP-G
C11816_STRADA-SQ-T-DN
CA11817_STRADA-SQ-T-DN

CREE XT-E
C11889_STRADA-SQ-T-DN
CA11890_STRADA-SQ-T-DN

CREE XM-L
C11889_STRADA-SQ-T-DN
CA11890_STRADA-SQ-T-DN

SEOUL Z5
C11816_STRADA-SQ-T-DN
CA11817_STRADA-SQ-T-DN

SHARP DOUBLE DOME
C11816_STRADA-SQ-T-DN
CA11817_STRADA-SQ-T-DN



STRADA-SQ-T-DW
25,2 MM X 25,2 MM
PMMA

CREE XP-E / XP-G
C11818_STRADA-SQ-T-DW
CA11819_STRADA-SQ-T-DW

CREE XT-E
C11891_STRADA-SQ-T-DW
CA11892_STRADA-SQ-T-DW
C11962_STRADA-SQ-T-DW
CA11963_STRADA-SQ-T-DW

CREE XM-L
C11891_STRADA-SQ-T-DW
CA11892_STRADA-SQ-T-DW
C11962_STRADA-SQ-T-DW
CA11963_STRADA-SQ-T-DW

SEOUL Z5
C11818_STRADA-SQ-T-DW
CA11819_STRADA-SQ-T-DW

SHARP DOUBLE DOME
C11818_STRADA-SQ-T-DW
CA11819_STRADA-SQ-T-DW



STREET LIGHTING



STRADA-K
19,6 MM X 15,5 MM
PMMA

CREE XP-G / XP-E / XT-E

/ XM-L

C12786_STRADA-K

CA12787_STRADA-K

**PHILIPS LUMILEDS LUXEON
REBEL / REBEL ES**

C12786_STRADA-K

CA12787_STRADA-K



STRADA-SQ-A-T
25 MM X 25 MM
PMMA

CREE XM-L

C12410_STRADA-SQ-A-T

CA12411_STRADA-SQ-A-T

C13118_STRADA-SQ-A-T

CA13119_STRADA-SQ-A-T

**PHILIPS LUMILEDS
LUXEON M**

C12410_STRADA-SQ-A-T

CA12411_STRADA-SQ-A-T

C13118_STRADA-SQ-A-T

CA13119_STRADA-SQ-A-T



STRADA 2X2-A-T
50 MM X 50 MM
PMMA

CREE XT-E

C12419_STRADA-2x2_A-T

CREE XM-L

C12419_STRADA-2x2_A-T



STRADA-T-6X1
25.2 MM X 120 MM
PMMA

CREE XP-E / XP-G

C11918_STRADA-T-6X1-DNW

C12449_STRADA-T-6X1-DWC

CREE XB-D

C11918_STRADA-T-6X1-DNW

C12449_STRADA-T-6X1-DWC

**PHILIPS LUMILEDS
LUXEON REBEL / REBEL ES**

C11918_STRADA-T-6X1-DNW

C12449_STRADA-T-6X1-DWC

NICHIA NCS19 / NVS19

C11918_STRADA-T-6X1-DNW

C12449_STRADA-T-6X1-DWC

SEOUL Z5

C11918_STRADA-T-6X1-DNW

C12449_STRADA-T-6X1-DWC

SHARP DOUBLE DOME

C11918_STRADA-T-6X1-DNW

C12449_STRADA-T-6X1-DWC



STRADA 2X2-DWC
50 MM X 50 MM
PMMA

CREE XT-E

C12362_STRADA_2X2-DWC

CREE XM-L

C12362_STRADA_2X2-DWC



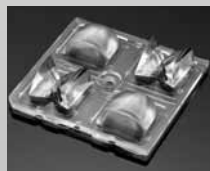
STRADA-IP-2X6-DWC
173 X 71,4 mm
PMMA

CREE XP-E / XP-G / XP-G2

CS12862_STRADA-IP-2X6-DWC

OSRAM OSLO SQUARE PC

CS12862_STRADA-IP-2X6-DWC



STRADA 2X2-DNW
50 MM X 50 MM
PMMA

CREE XT-E

C12360_2X2-DNW

CREE XM-L

C12360_2X2-DNW

Learn more about STRADA optics at

http://www.ledil.com/sites/default/files/Documents/Application%20notes/Strada_lens_guide.pdf



BEAM ANGLE RANGE (FWHM)

Spot (RS, SS, S)	3-18 degrees
Medium (D, M, M2)	19 - 35 degrees
Wide (W, W2)	36 - 45 degrees
Extra Wide (WW)	46 - 63 degrees
WWW	64 --> degrees
O	Oval
REC	Rectangular

PREFIXES

F = FI / optic or holder

FA = FI / assembled optic+holder / tape

FN = FI / unassembled optic+holder / no tape

FX = FI / unassembled optic+holder / tape

FP = FI / assembled optic+holder/no tape

FCA = FI / assembled optic+holder / tape

FCN = FI / unassembled optic+holder / no tape

FCX = FI / unassembled optic+holder / tape

FI = Finland, Country of Origin

C = CN / optic or holder

CA = CN / assembled optic+holder / tape

CN = CN / unassembled optic+holder / no tape

CX = CN / unassembled optic+holder / tape

CP = CN / assembled optic+holder / no tape

CN = China, Country of Origin

Qualification of LEDs with our optics occurs every day, please visit www.ledil.com for the latest information. Contact sales@ledil.com if you do not see an optic qualified for your LED of choice.

CREE XR

SEOUL P4 - ACHRICHE AX3221

PHILIPS LUMILEDS LUXEON I - III - K2

NICHIA 153 - 036 - 107

OSRAM DIAMOND DRAGON - OSTAR LIGHTING - IR OSTAR - OSTAR SMT





Our Company

The only true specialist in the field of secondary optics for high-power and lighting-class LEDs, LEDiL has been producing precision-engineered optics and reflectors since 2002 and now boasts nearly 1000 standard products optimized for use with LEDs produced by the world's prominent LED manufacturers.

Custom solutions are also commonly developed with minimal end-user tooling investment required. With production in Finland and China and a global network of authorized distributors, LEDiL's products are market-competitive and readily available.



Quality

Innovative and skillful designers engineer quality into every LEDiL optic. All our lenses are produced by a unique injection molding process, which ensures high optical quality, performance, lifetime and functionality. Our optics can work in extreme conditions.



