ATMOSS LIGHTING

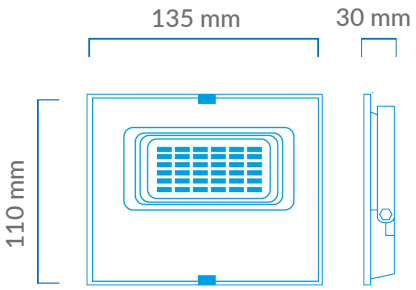
Used
OSRAM
LED Chips

# PROYECTOR EXTERIOR
# LED 2200LM
# 20W

E

20 W | 2200 LÚMENES | Used OSRAM LED Chips | 120º

| | |
|---|---|
| **Referencia** | **ref.PRY-135** |
| Potencia | 20W |
| Color de luz | 3200K |
| Lúmenes | 2200 lm |
| Ángulo | 120º |
| IP | IP67 |
| Voltaje | AC 180-265V |
| Hercios | 50/60 Hz |
| Clase | CLASE II |
| Chip | OSRAM |
| Factor de Potencia | FP>0.50 |
| Rotación | 140º |
| IK | 08 |




3 AÑOS GARANTIA | NO UV/IR | NOT DIMMABLE | INSTANT FULL LIGHT | 25.000h | 50.000h ON OFF | CE | RoHS 2002/95/EC | Hg 0,0mg | $CO_2$

Calle los Mecánicos, 5 - 03130 - Pol. Ind. - Santa Pola (Alicante) España
Telf. +34 966 693 404 - atmoss@atmoss.es - **www.atmoss.es**

## ESPECIFICACIONES:

· POTENCIA: 20W
· RANGO DE TENSIÓN: 180-265V AC 50/60Hz
· GRADO IP: IP67
· PESO: 338gr

## INSTRUCCIONES GENERALES Y RECOMENDACIONES DE SEGURIDAD:

· Se recomienda evitar mirar la luz de muy cerca y en forma directa por su alta intensidad lumínica y evitar encandilamiento innecesario.

· Debe instalarse en un lugar ventilado, nunca dentro de una caja o habitáculo estanco.

· El reflector se enfría naturalmente por convección de aire.

· Este producto está preparado para resistir a la intermperie.

· Para limpieza, asegurarse de que la luminaria esté desconectada de la red eléctrica. No utilizar hidrolavadoras a la hora de su limpieza ya que si bien su grado de estanqueidad es IP65 el agua a alta presión puede dañar el sellado.

· No instalar bajo el agua u otro tipo de líquidos.

· Cambiar el vidrio templado en caso de rotura.

· Esta unidad es fácilmente reparable, incluso en su lugar de instalación siempre por personal cualificado.

· La distancia entre el reflector y cualquier objeto debe ser de al menos 1 metro.

## LIMPIEZA:

Antes de limpiar el reflector, desconectarlo de la red de alimentación y esperar hasta que el mismo se enfríe lo suficiente. Esto evita que el vidrio templado cambie bruscamente su temperatura y se dañe.

Limpiar con un paño ligeramente húmedo para remover la suciedad acumulada.

Recomendamos que la instalación sea realizada por una persona cualificada y autorizada.
Asegúrese de desconectar la corriente antes de realizar la instalación.

## MANTENIMIENTO:

· Verificar la conexión, el cableado y la carcasa del reflector de LED si están dañados antes de usar.

· Sólo requiere ser limpiado con un paño cuando se note sucio, para mejorara la luminosidad.

## INSTRUCCIONES DE MONTAJE EN PARED:

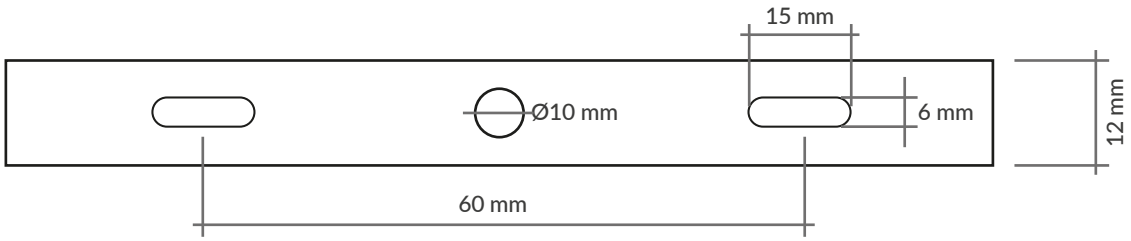
1. Debe ser instalado por personal cualificado.

2. Sólo debe ser montado sobre superficies francas, sin grietas y sin humedad.

3. Posición de montaje: La luminaria debería ser instalada mediante tarugos (tipo Fischer).

4. Marcar las posiciones de los huecos sobre la pared. Agujerear sobre las posiciones marcadas anteriormente. Atornillar sobre la pared con los tornillos adecuados.

## DISTANCIA DE ANCLAJE



# GW JTLRS1.EM

## DURIS® E 2835

The compact, mid-power DURIS® E 2835 LED with an industry standard footprint. Optimum lumen packages for retrofit applications and a truly cost optimize product. It is the ideal choice for all indoor General Lighting applications.

## Applications

- Downlights/Spotlights
- Lamp Retrofits

## Features:

- Package: white SMT package, colored diffused silicone resin
- Typ. Radiation: 120° (Lambertian emitter)
- Color temperature: 2200K - 6500K
- CRI: 70 (min.), 82 (typ.)
- Lumen maintenance: Test results according to IESNA LM-80 available
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)
- Luminous Flux: typ. 126 lm @ 2700 K
- Luminous efficacy: typ. 137 lm/W @ 2700 K



OSRAM Opto Semiconductors

## Ordering Information

| Type | Color temperature | Luminous Flux [1] $I_F$ = 100 mA $\Phi_V$ | Ordering Code |
|---|---|---|---|
| GW JTLRS1.EM-KZLY-XX510-1 | 2200 K | 100.0 ... 150.0 lm | Q65113A0681 |
| GW JTLRS1.EM-K4L3-XX58-1 | 2700 K | 120.0 ... 170.0 lm | Q65113A0040 |
| GW JTLRS1.EM-K5L4-XX57-1 | 3000 K | 125.0 ... 170.0 lm | Q65113A0674 |
| GW JTLRS1.EM-K5L4-XX56-1 | 3500 K | 125.0 ... 170.0 lm | Q65113A0673 |
| GW JTLRS1.EM-LVL5-XX55-1 | 4000 K | 130.0 ... 170.0 lm | Q65113A0680 |
| GW JTLRS1.EM-LVL5-XX53-1 | 5000 K | 130.0 ... 170.0 lm | Q65113A0678 |
| GW JTLRS1.EM-LVL5-XX52-1 | 5700 K | 130.0 ... 170.0 lm | Q65113A0679 |
| GW JTLRS1.EM-LVL5-XX51-1 | 6500 K | 130.0 ... 170.0 lm | Q65113A0677 |

## Maximum Ratings

| Parameter | Symbol | | Values |
|---|---|---|---|
| Operating Temperature | $T_{op}$ | min.<br>max. | -40 °C<br>100 °C |
| Storage Temperature | $T_{stg}$ | min.<br>max. | -40 °C<br>100 °C |
| Junction Temperature | $T_j$ | max. | 125 °C |
| Forward Current<br>$T_J$ = 25 °C | $I_F$ | min.<br>max. | 10 mA<br>120 mA |
| Surge Current<br>t ≤ 10 µs; D = 0.005 ; $T_J$ = 25 °C | $I_{FS}$ | max. | 200 mA |
| ESD withstand voltage<br>acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2) | $V_{ESD}$ | | 2 kV |

## Characteristics

$I_F$ = 100 mA; $T_J$ = 25 °C

| Parameter | Symbol | | Values |
|---|---|---|---|
| Viewing angle at 50% $I_V$ | 2φ | typ. | 120 ° |
| Forward Voltage [2] | $V_F$ | min.<br>typ.<br>max. | 8.00 V<br>9.20 V<br>9.40 V |
| Reverse current [3] | $I_R$ | | Not designed for reverse operation |
| Color Rendering Index [4] | CRI | min.<br>typ. | 80<br>82 |
| Electrical thermal resistance junction/solderpoint with efficiency $\eta_e$ = 35 % | $R_{thJS\ elec.}$ | typ. | 13 K / W |

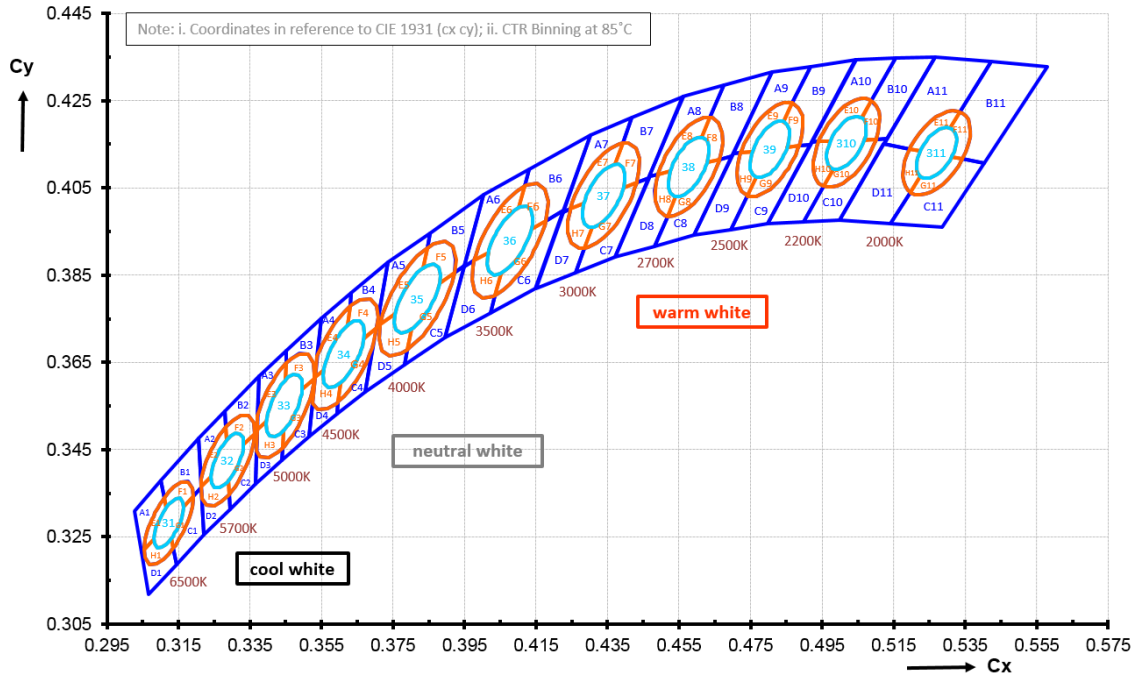
## Brightness Groups

| Group | Luminous Flux [1] $I_F$ = 100 mA min. $\Phi_V$ | Luminous Flux [1] $I_F$ = 100 mA max. $\Phi_V$ |
|---|---|---|
| KZ | 100.0 lm | 105.0 lm |
| K1 | 105.0 lm | 110.0 lm |
| K2 | 110.0 lm | 115.0 lm |
| K3 | 115.0 lm | 120.0 lm |
| K4 | 120.0 lm | 125.0 lm |
| K5 | 125.0 lm | 130.0 lm |
| LV | 130.0 lm | 135.0 lm |
| LW | 135.0 lm | 140.0 lm |
| LX | 140.0 lm | 145.0 lm |
| LY | 145.0 lm | 150.0 lm |
| LZ | 150.0 lm | 155.0 lm |
| L1 | 155.0 lm | 160.0 lm |
| L2 | 160.0 lm | 165.0 lm |
| L3 | 165.0 lm | 170.0 lm |

## Forward Voltage Groups

| Group | Forward Voltage [2] min. $V_F$ | Forward Voltage [2] max. $V_F$ |
|---|---|---|
| C1 | 8.00 V | 8.20 V |
| C2 | 8.20 V | 8.40 V |
| D1 | 8.40 V | 8.60 V |
| D2 | 8.60 V | 8.80 V |
| E1 | 8.80 V | 9.00 V |
| E2 | 9.00 V | 9.20 V |
| F1 | 9.20 V | 9.40 V |

## Chromaticity Coordinate Groups [5)]



## Chromaticity Coordinate Groups

| CCT | Center Cx | Center Cy | 3step a | 3step b | 5step a | 5step b | Ø |
|---|---|---|---|---|---|---|---|
| 2200 K | 0.5020 | 0.4156 | 0.0072 | 0.0040 | 0.0120 | 0.0067 | 39.9 |
| 2700 K | 0.4577 | 0.4098 | 0.0080 | 0.0041 | 0.0133 | 0.0068 | 54.1 |
| 3000 K | 0.4339 | 0.4032 | 0.0086 | 0.0042 | 0.0142 | 0.0069 | 53.7 |
| 3500 K | 0.4077 | 0.3929 | 0.0093 | 0.0042 | 0.0155 | 0.0069 | 53.9 |
| 4000 K | 0.3818 | 0.3796 | 0.0094 | 0.0041 | 0.0157 | 0.0068 | 53.4 |
| 5000 K | 0.3446 | 0.3551 | 0.0081 | 0.0035 | 0.0135 | 0.0059 | 59.8 |
| 5700 K | 0.3287 | 0.3425 | 0.0072 | 0.0032 | 0.0119 | 0.0052 | 58.8 |
| 6500 K | 0.3123 | 0.3282 | 0.0066 | 0.0027 | 0.0110 | 0.0045 | 58.1 |

| | | 1 | | 2 | | 3 | | 4 | | 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CCT | Group | Cx | Cy | Cx | Cy | Cx | Cy | Cx | Cy | Cx | Cy |
| 2200 K | A | 0.5155 | 0.4347 | 0.5044 | 0.4344 | 0.4921 | 0.4156 | 0.4941 | 0.4156 | 0.5088 | 0.4249 |
| | B | 0.5155 | 0.4347 | 0.5265 | 0.4350 | 0.5132 | 0.4163 | 0.5101 | 0.4161 | 0.5088 | 0.4249 |
| | C | 0.5132 | 0.4163 | 0.4998 | 0.3975 | 0.4898 | 0.3971 | 0.4955 | 0.4054 | 0.5101 | 0.4161 |
| | D | 0.4955 | 0.4054 | 0.4941 | 0.4156 | 0.4921 | 0.4156 | 0.4798 | 0.3967 | 0.4898 | 0.3971 |
| | E | 0.5088 | 0.4249 | 0.4941 | 0.4156 | 0.4973 | 0.4157 | 0.5061 | 0.4210 | | |
| | F | 0.5088 | 0.4249 | 0.5101 | 0.4161 | 0.5068 | 0.4160 | 0.5061 | 0.4210 | | |
| | G | 0.5101 | 0.4161 | 0.4955 | 0.4054 | 0.4981 | 0.4093 | 0.5068 | 0.4158 | | |
| | H | 0.4981 | 0.4093 | 0.4973 | 0.4157 | 0.4941 | 0.4156 | 0.4955 | 0.4054 | | |
| 2700 K | A | 0.4675 | 0.4285 | 0.4561 | 0.4259 | 0.4467 | 0.4076 | 0.4491 | 0.4081 | 0.4637 | 0.4212 |
| | B | 0.4675 | 0.4285 | 0.4811 | 0.4315 | 0.4698 | 0.4123 | 0.4663 | 0.4115 | 0.4637 | 0.4212 |
| | C | 0.4698 | 0.4123 | 0.4591 | 0.3941 | 0.4482 | 0.3917 | 0.4517 | 0.3984 | 0.4663 | 0.4115 |
| | D | 0.4517 | 0.3984 | 0.4491 | 0.4081 | 0.4467 | 0.4076 | 0.4372 | 0.3892 | 0.4482 | 0.3917 |
| | E | 0.4637 | 0.4212 | 0.4491 | 0.4081 | 0.4526 | 0.4088 | 0.4613 | 0.4166 | | |
| | F | 0.4637 | 0.4212 | 0.4663 | 0.4115 | 0.4628 | 0.4108 | 0.4613 | 0.4166 | | |
| | G | 0.4663 | 0.4115 | 0.4517 | 0.3984 | 0.4541 | 0.4030 | 0.4628 | 0.4108 | | |
| | H | 0.4541 | 0.4030 | 0.4526 | 0.4088 | 0.4491 | 0.4081 | 0.4517 | 0.3984 | | |
| 3000 K | A | 0.4418 | 0.4211 | 0.4302 | 0.4171 | 0.4226 | 0.3995 | 0.4246 | 0.4002 | 0.4393 | 0.4153 |
| | B | 0.4418 | 0.4211 | 0.4561 | 0.4259 | 0.4465 | 0.4073 | 0.4432 | 0.4062 | 0.4393 | 0.4153 |
| | C | 0.4465 | 0.4073 | 0.4372 | 0.3892 | 0.4261 | 0.3856 | 0.4285 | 0.3911 | 0.4432 | 0.4062 |
| | D | 0.4285 | 0.3911 | 0.4246 | 0.4002 | 0.4226 | 0.3995 | 0.4149 | 0.3819 | 0.4261 | 0.3856 |
| | E | 0.4393 | 0.4153 | 0.4246 | 0.4002 | 0.4283 | 0.4014 | 0.4371 | 0.4105 | | |
| | F | 0.4393 | 0.4153 | 0.4432 | 0.4062 | 0.4395 | 0.4050 | 0.4371 | 0.4105 | | |
| | G | 0.4432 | 0.4062 | 0.4285 | 0.3911 | 0.4307 | 0.3960 | 0.4395 | 0.4050 | | |
| | H | 0.4307 | 0.3960 | 0.4283 | 0.4014 | 0.4246 | 0.4002 | 0.4285 | 0.3911 | | |
| 3500 K | A | 0.4131 | 0.4093 | 0.4003 | 0.4034 | 0.3949 | 0.3871 | 0.3977 | 0.3883 | 0.4118 | 0.4054 |
| | B | 0.4131 | 0.4093 | 0.4302 | 0.4171 | 0.4227 | 0.3997 | 0.4177 | 0.3975 | 0.4118 | 0.4054 |
| | C | 0.4227 | 0.3997 | 0.4149 | 0.3819 | 0.4022 | 0.3763 | 0.4036 | 0.3804 | 0.4177 | 0.3975 |
| | D | 0.4036 | 0.3804 | 0.3977 | 0.3883 | 0.3949 | 0.3871 | 0.3895 | 0.3707 | 0.4022 | 0.3763 |
| | E | 0.4118 | 0.4054 | 0.3977 | 0.3883 | 0.4017 | 0.3902 | 0.4102 | 0.4004 | | |
| | F | 0.4118 | 0.4054 | 0.4177 | 0.3975 | 0.4137 | 0.3956 | 0.4102 | 0.4004 | | |
| | G | 0.4177 | 0.3975 | 0.4036 | 0.3804 | 0.4052 | 0.3854 | 0.4137 | 0.3956 | | |
| | H | 0.4052 | 0.3854 | 0.4017 | 0.3902 | 0.3977 | 0.3883 | 0.4036 | 0.3804 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4000 K | A | 0.3853 | 0.3947 | 0.3737 | 0.3879 | 0.3704 | 0.3731 | 0.3714 | 0.3737 | 0.3845 | 0.3913 |
| | B | 0.3853 | 0.3947 | 0.4003 | 0.4034 | 0.3949 | 0.3871 | 0.3922 | 0.3855 | 0.3845 | 0.3913 |
| | C | 0.3949 | 0.3871 | 0.3895 | 0.3707 | 0.3783 | 0.3645 | 0.3791 | 0.3679 | 0.3922 | 0.3855 |
| | D | 0.3791 | 0.3679 | 0.3714 | 0.3737 | 0.3704 | 0.3731 | 0.3671 | 0.3583 | 0.3783 | 0.3645 |
| | E | 0.3845 | 0.3913 | 0.3714 | 0.3737 | 0.3756 | 0.3760 | 0.3834 | 0.3866 | | |
| | F | 0.3845 | 0.3913 | 0.3922 | 0.3855 | 0.3880 | 0.3832 | 0.3834 | 0.3866 | | |
| | G | 0.3922 | 0.3855 | 0.3791 | 0.3679 | 0.3802 | 0.3726 | 0.3880 | 0.3832 | | |
| | H | 0.3802 | 0.3726 | 0.3756 | 0.3760 | 0.3714 | 0.3737 | 0.3791 | 0.3679 | | |
| 5000 K | A | 0.3452 | 0.3678 | 0.3375 | 0.3619 | 0.3372 | 0.3528 | 0.3451 | 0.3648 | | |
| | B | 0.3452 | 0.3678 | 0.3550 | 0.3752 | 0.3532 | 0.3614 | 0.3530 | 0.3612 | 0.3451 | 0.3648 |
| | C | 0.3532 | 0.3614 | 0.3514 | 0.3480 | 0.3440 | 0.3426 | 0.3441 | 0.3454 | 0.3530 | 0.3612 |
| | D | 0.3441 | 0.3454 | 0.3369 | 0.3445 | 0.3366 | 0.3372 | 0.3440 | 0.3426 | | |
| | E | 0.3451 | 0.3648 | 0.3372 | 0.3528 | 0.3371 | 0.3496 | 0.3396 | 0.3514 | 0.3449 | 0.3609 |
| | F | 0.3451 | 0.3648 | 0.3530 | 0.3612 | 0.3496 | 0.3588 | 0.3449 | 0.3609 | | |
| | G | 0.3530 | 0.3612 | 0.3441 | 0.3454 | 0.3443 | 0.3493 | 0.3496 | 0.3588 | | |
| | H | 0.3443 | 0.3493 | 0.3396 | 0.3514 | 0.3371 | 0.3496 | 0.3369 | 0.3445 | 0.3441 | 0.3454 |
| 5700 K | A | 0.3280 | 0.3539 | 0.3205 | 0.3475 | 0.3212 | 0.3373 | 0.3283 | 0.3502 | | |
| | B | 0.3280 | 0.3539 | 0.3375 | 0.3619 | 0.3370 | 0.3493 | 0.3363 | 0.3486 | 0.3283 | 0.3502 |
| | C | 0.3370 | 0.3493 | 0.3366 | 0.3372 | 0.3294 | 0.3314 | 0.3291 | 0.3348 | 0.3363 | 0.3486 |
| | D | 0.3291 | 0.3348 | 0.3215 | 0.3337 | 0.3221 | 0.3255 | 0.3294 | 0.3314 | | |
| | E | 0.3283 | 0.3502 | 0.3212 | 0.3373 | 0.3213 | 0.3365 | 0.3242 | 0.3388 | 0.3284 | 0.3471 |
| | F | 0.3283 | 0.3502 | 0.3363 | 0.3486 | 0.3332 | 0.3462 | 0.3284 | 0.3471 | | |
| | G | 0.3363 | 0.3486 | 0.3291 | 0.3348 | 0.3290 | 0.3379 | 0.3332 | 0.3462 | | |
| | H | 0.3291 | 0.3348 | 0.3215 | 0.3337 | 0.3213 | 0.3365 | 0.3242 | 0.3388 | 0.3290 | 0.3379 |
| 6500 K | A | 0.3102 | 0.3379 | 0.3027 | 0.3310 | 0.3047 | 0.3214 | 0.3054 | 0.3220 | 0.3110 | 0.3340 |
| | B | 0.3102 | 0.3379 | 0.3205 | 0.3475 | 0.3213 | 0.3363 | 0.3192 | 0.3344 | 0.3110 | 0.3340 |
| | C | 0.3213 | 0.3363 | 0.3221 | 0.3255 | 0.3144 | 0.3187 | 0.3136 | 0.3224 | 0.3192 | 0.3344 |
| | D | 0.3136 | 0.3224 | 0.3054 | 0.3220 | 0.3047 | 0.3214 | 0.3067 | 0.3118 | 0.3144 | 0.3187 |
| | E | 0.3110 | 0.3340 | 0.3054 | 0.3220 | 0.3082 | 0.3245 | 0.3115 | 0.3317 | | |
| | F | 0.3110 | 0.3340 | 0.3192 | 0.3344 | 0.3165 | 0.3319 | 0.3115 | 0.3317 | | |
| | G | 0.3192 | 0.3344 | 0.3136 | 0.3224 | 0.3131 | 0.3247 | 0.3165 | 0.3319 | | |
| | H | 0.3136 | 0.3224 | 0.3054 | 0.3220 | 0.3082 | 0.3245 | 0.3131 | 0.3247 | | |

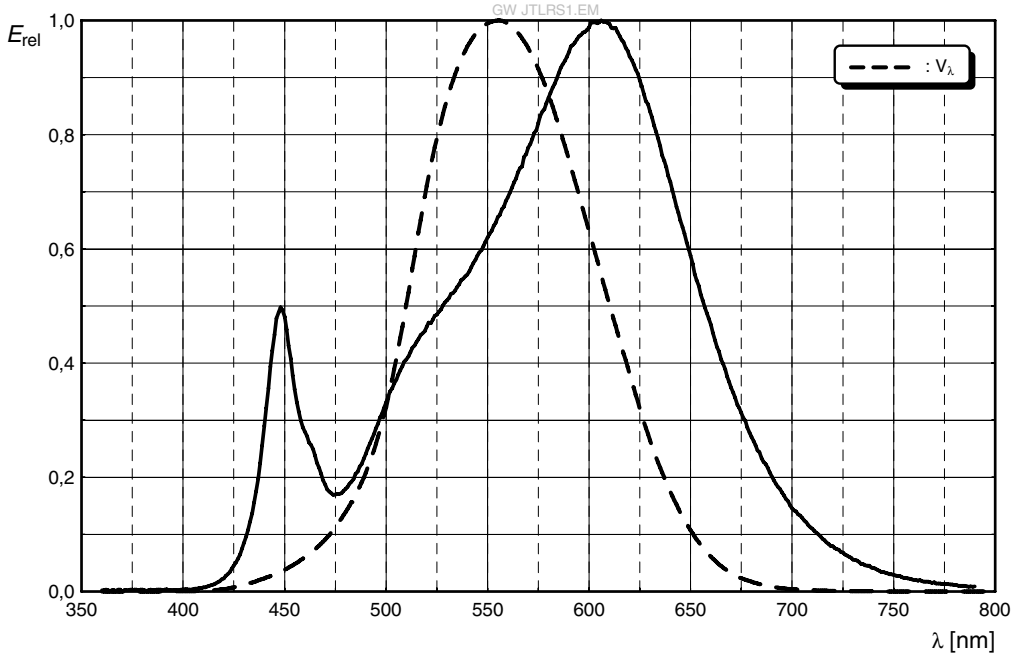
## Group Name on Label

**Example: K1-310-C1**

| Brightness | Color Chromaticity | Forward Voltage |
|---|---|---|
| K1 | 310 | C1 |

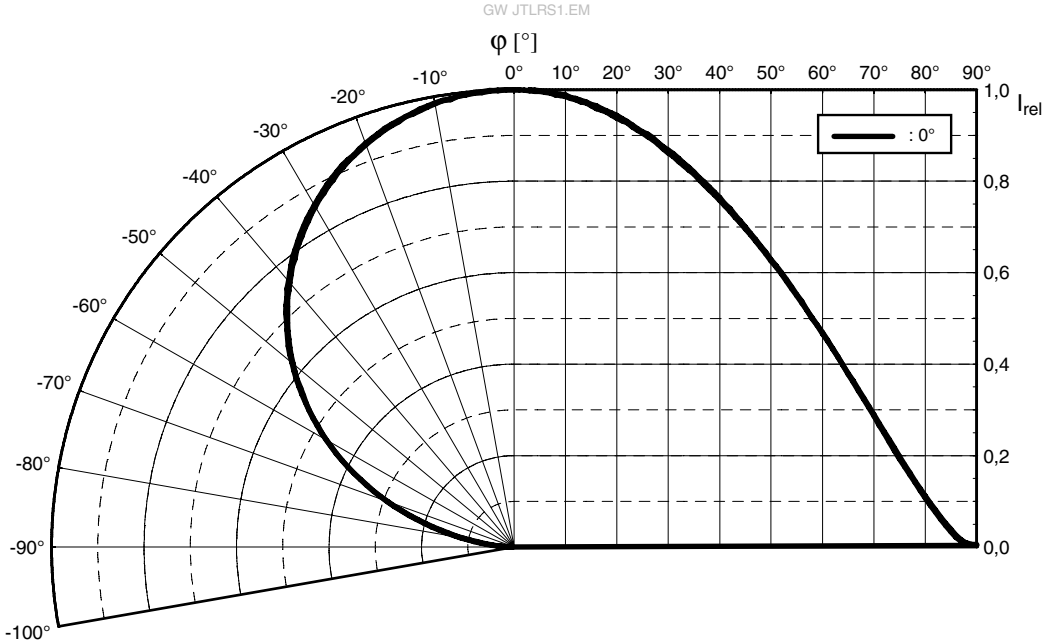
## Relative Spectral Emission [6)]

$I_{rel} = f(\lambda)$; $I_F$ = 100 mA; $T_J$ = 25 °C



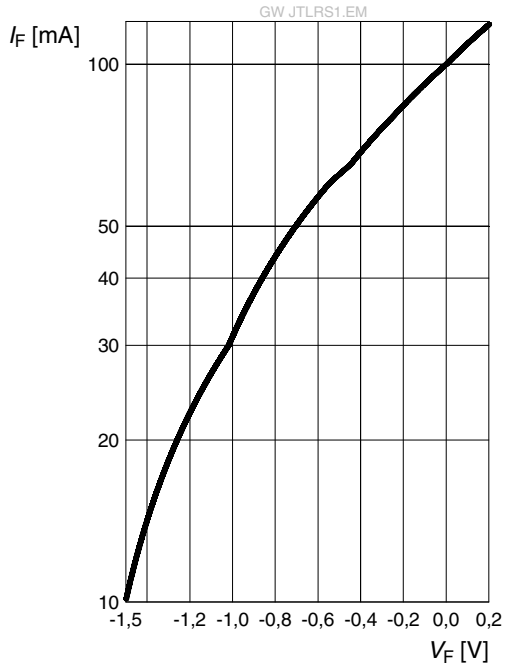

## Radiation Characteristics [6)]

$I_{rel} = f(\phi)$; $T_J$ = 25 °C



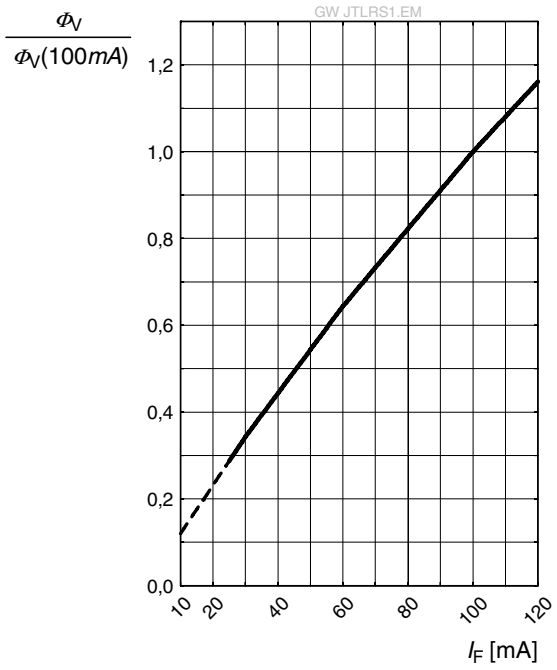
## Forward current [6), 7)]

$I_F = f(V_F)$; $T_J$ = 25 °C



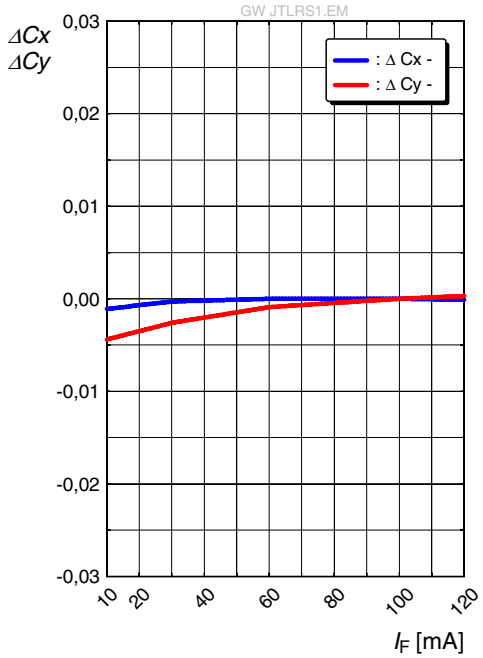

## Relative Luminous Flux [6), 7)]

$\Phi_v/\Phi_v(100\ mA) = f(I_F)$; $T_J$ = 25 °C



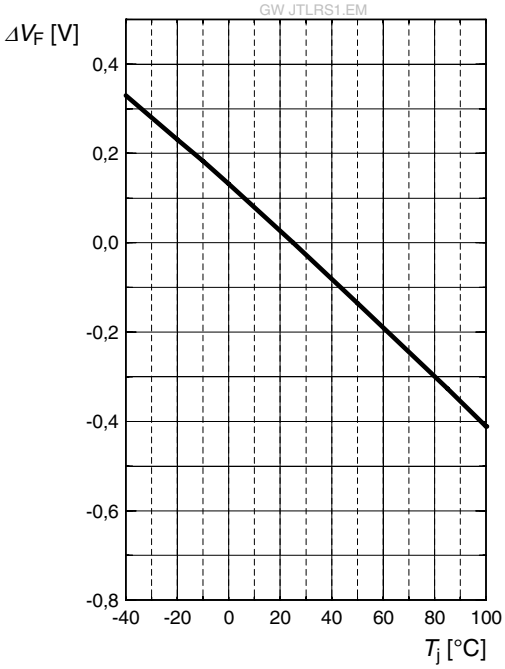

## Chromaticity Coordinate Shift [6)]

$\Delta Cx, \Delta Cy = f(I_F)$; $T_J$ = 25 °C



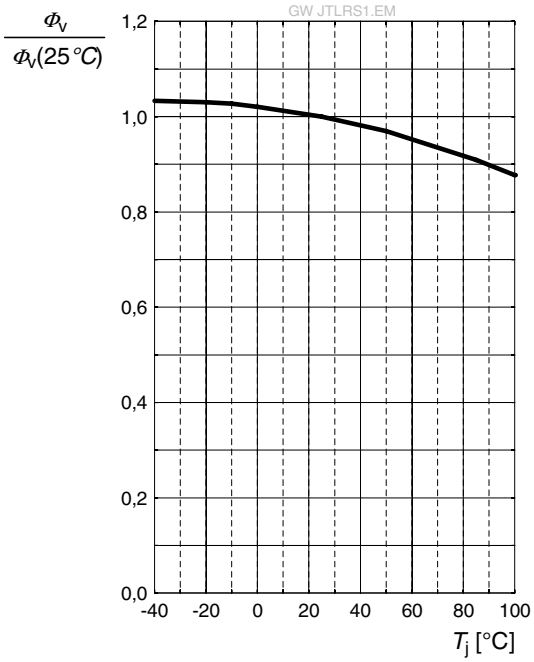
## Forward Voltage [6)]

$\Delta V_F = V_F - V_F(25\ °C) = f(T_j);\ I_F = 100\ mA$



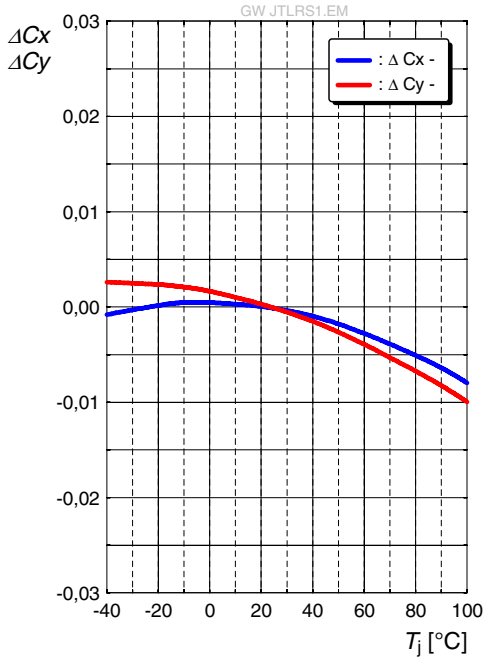

## Relative Luminous Flux [6)]

$\Phi_v/\Phi_v(25\ °C) = f(T_j);\ I_F = 100\ mA$



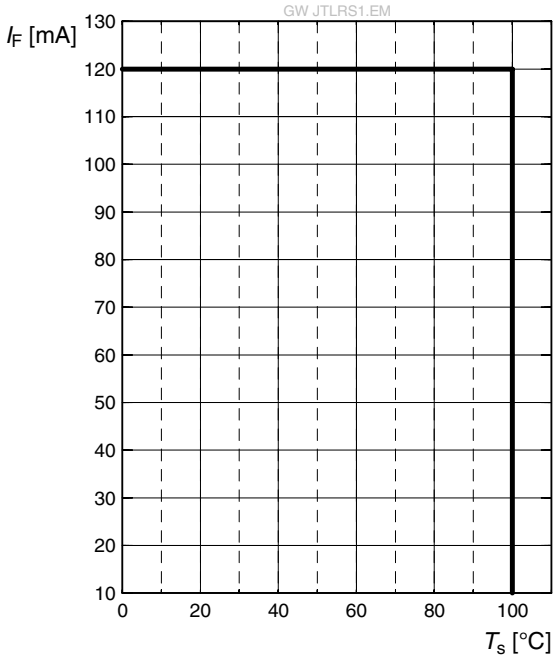

## Chromaticity Coordinate Shift [6)]

$\Delta Cx, \Delta Cy = f(T_j);\ I_F = 100\ mA$

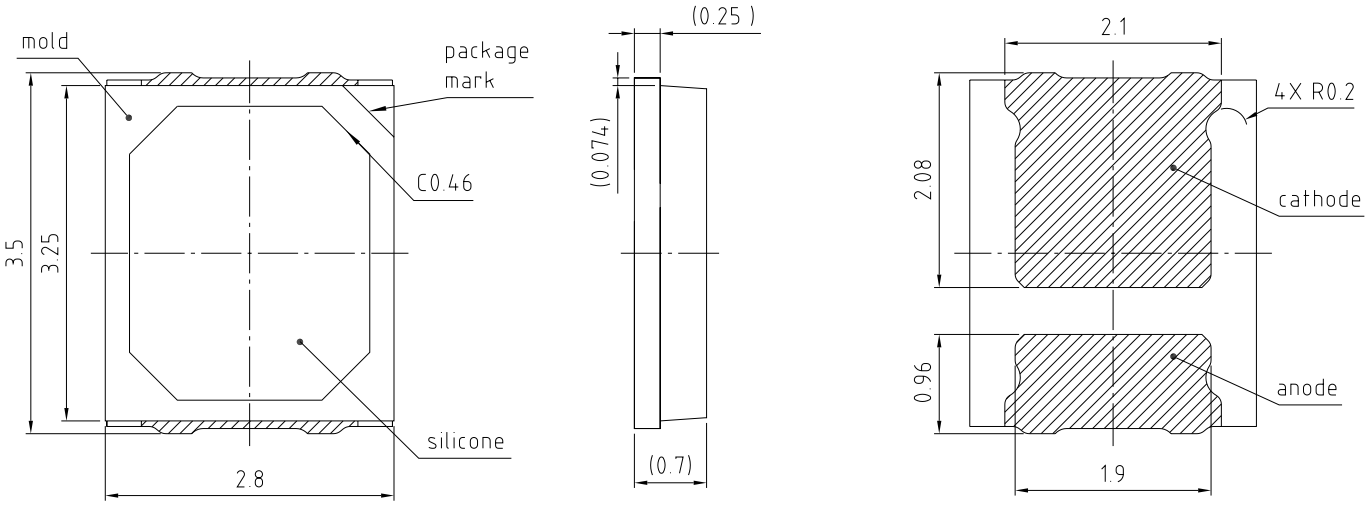


## Max. Permissible Forward Current

$I_F = f(T)$



## Dimensional Drawing [8)]




general tolerance ±0.1

lead finish Ag

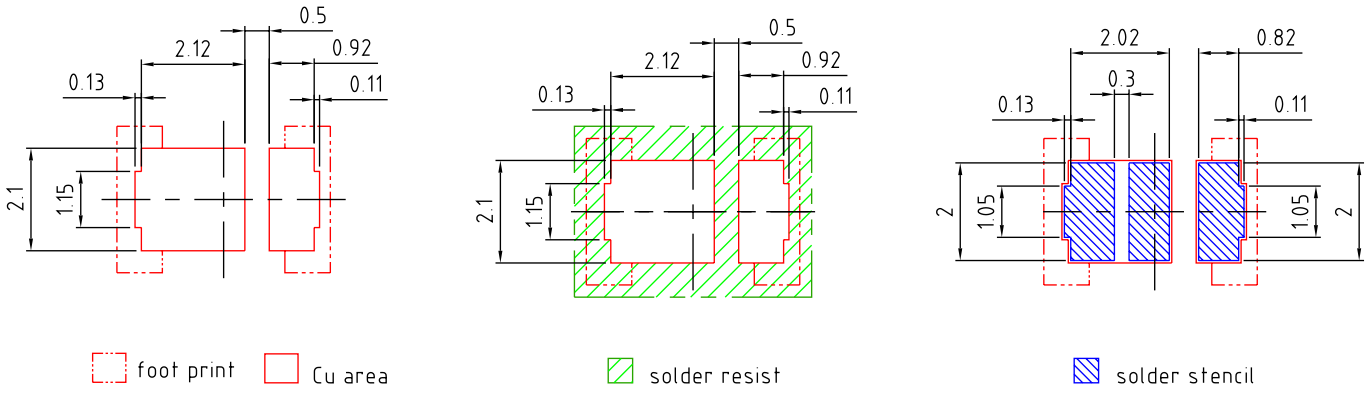
C67062-A0284-A1..-02

## Further Information:

**Approximate Weight:** 20.0 mg

**Package marking:** Cathode

## Recommended Solder Pad [8)]

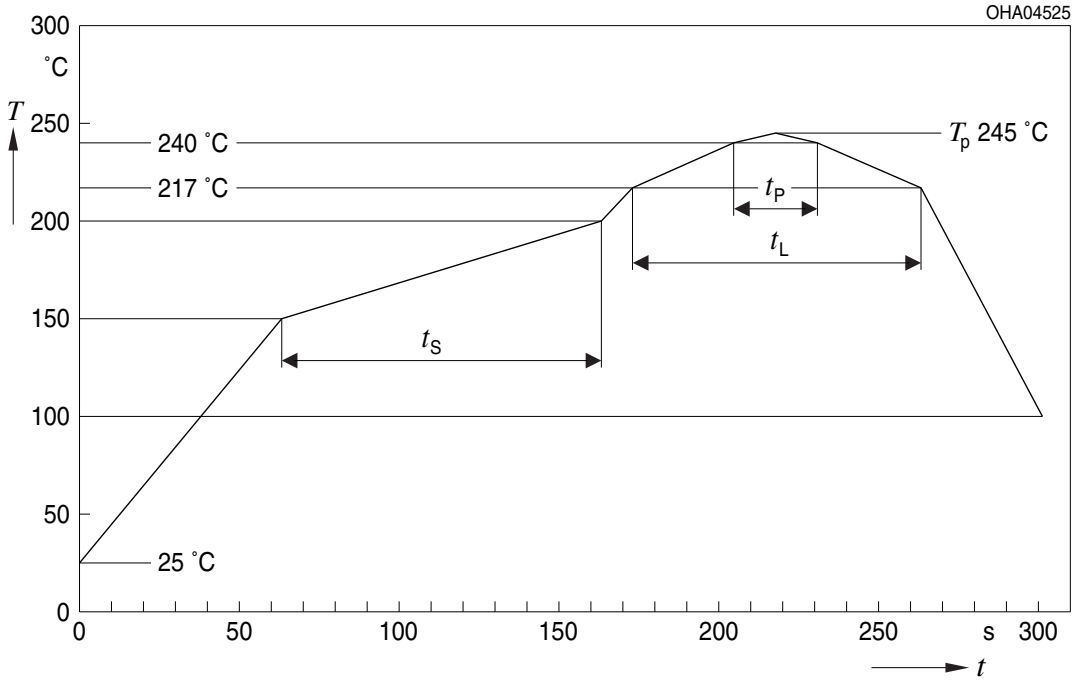



E067.0346.04-01

For superior solder joint connectivity results we recommend soldering under standard nitrogen atmosphere. Package not suitable for ultra sonic cleaning.

## Reflow Soldering Profile

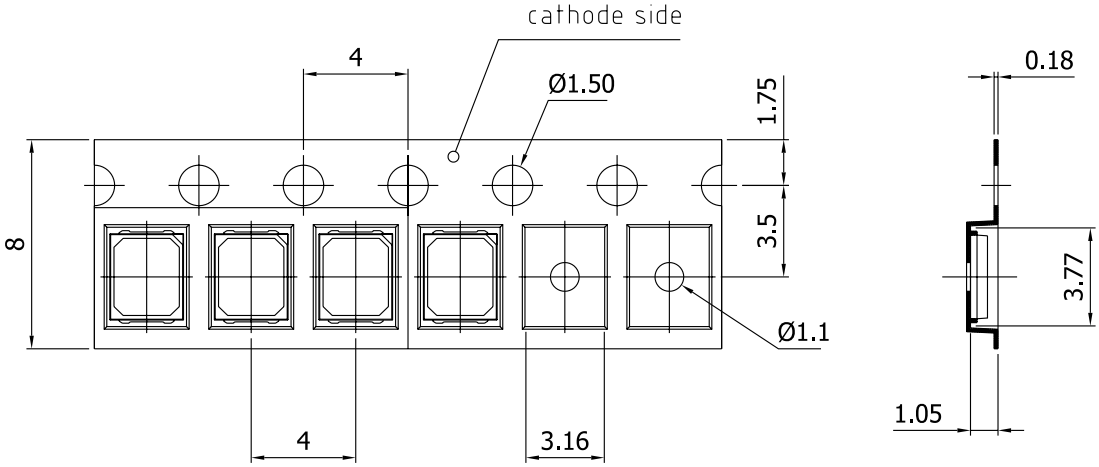
Product complies to MSL Level 3 acc. to JEDEC J-STD-020E




| Profile Feature | Symbol | Pb-Free (SnAgCu) Assembly | | | Unit |
|---|---|---|---|---|---|
| | | Minimum | Recommendation | Maximum | |
| Ramp-up rate to preheat*) 25 °C to 150 °C | | | 2 | 3 | K/s |
| Time $t_S$ $T_{Smin}$ to $T_{Smax}$ | $t_S$ | 60 | 100 | 120 | s |
| Ramp-up rate to peak*) $T_{Smax}$ to $T_P$ | | | 2 | 3 | K/s |
| Liquidus temperature | $T_L$ | | 217 | | °C |
| Time above liquidus temperature | $t_L$ | | 80 | 100 | s |
| Peak temperature | $T_P$ | | 245 | 260 | °C |
| Time within 5 °C of the specified peak temperature $T_P$ - 5 K | $t_P$ | 10 | 20 | 30 | s |
| Ramp-down rate* $T_P$ to 100 °C | | | 3 | 6 | K/s |
| Time 25 °C to $T_P$ | | | | 480 | s |

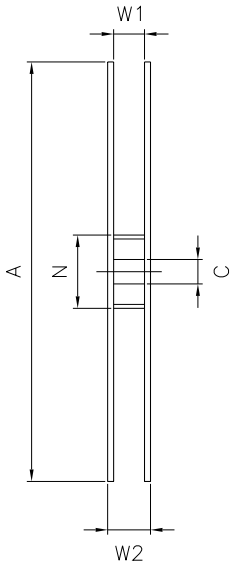
All temperatures refer to the center of the package, measured on the top of the component
* slope calculation DT/Dt: Dt max. 5 s; fulfillment for the whole T-range

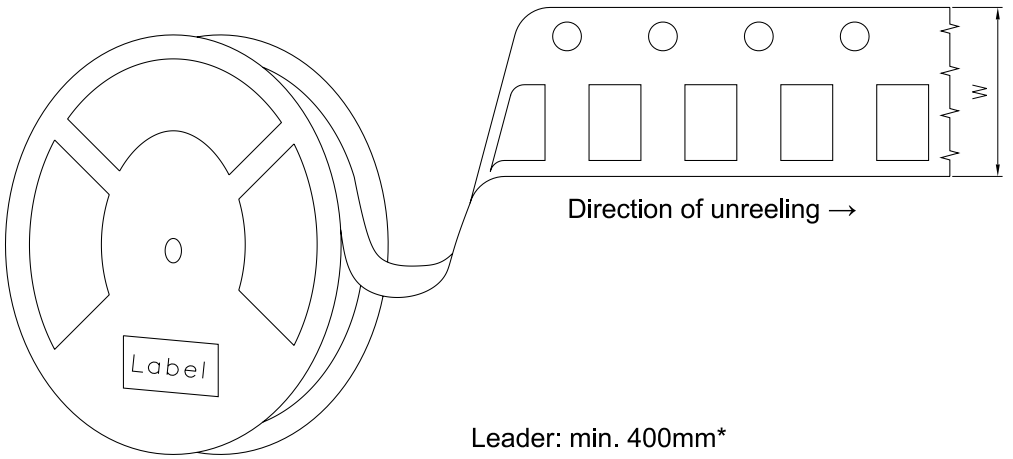
## Taping [8)]




C67062-A0204-B9-01

## Tape and Reel [9)]



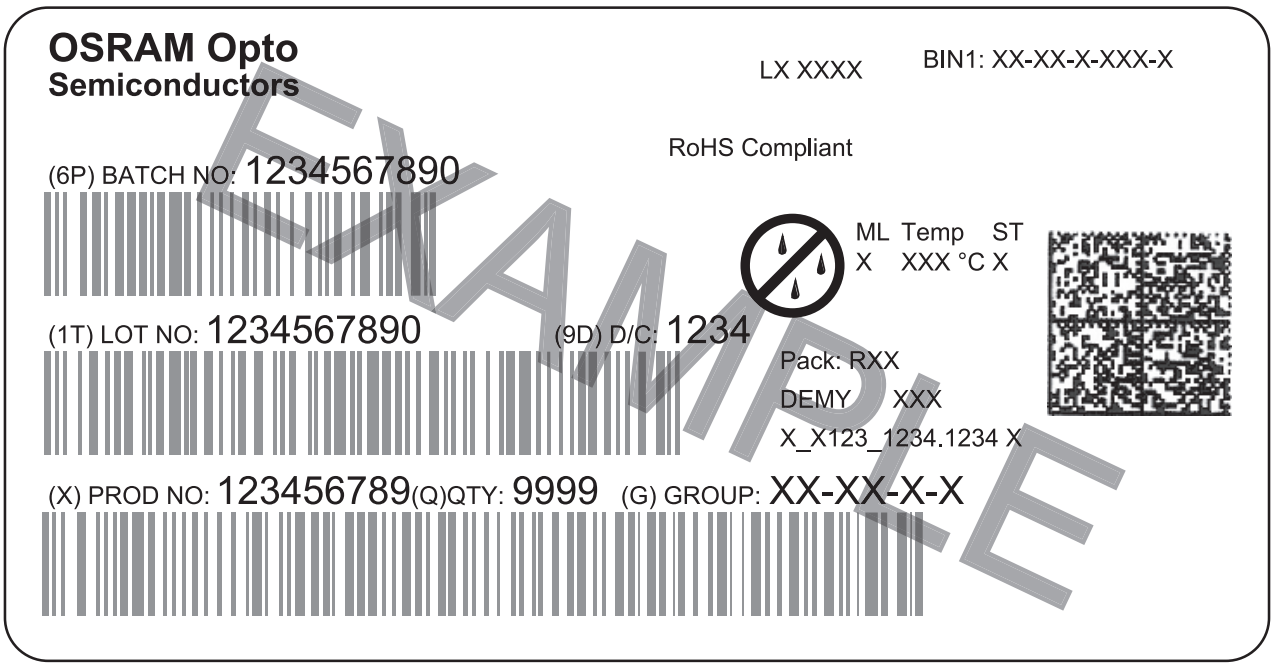




Leader: min. 400mm*
Trailer: min. 160mm*
*)Dimensions acc. to IEC 60286-3; EIA 481-E

## Reel Dimensions

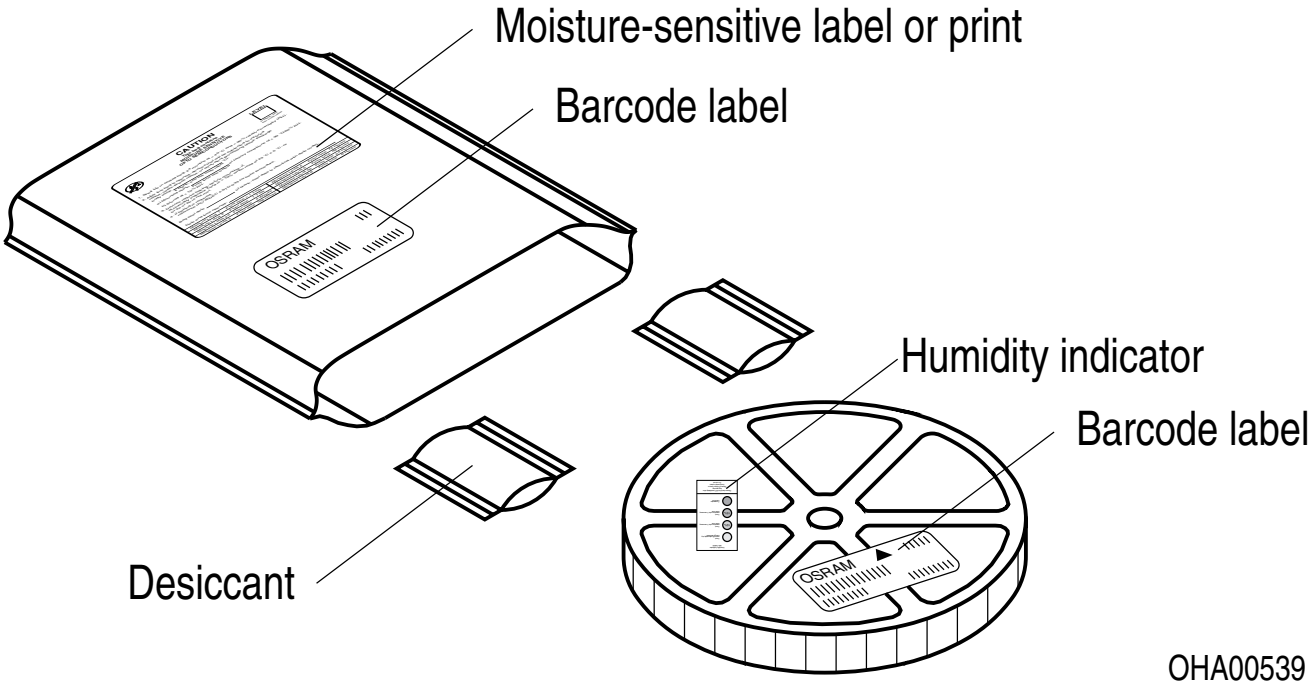
| A | W | $N_{min}$ | $W_1$ | $W_{2\,max}$ | Pieces per PU |
|---|---|---|---|---|---|
| 330 mm | 8 + 0.3 / - 0.1 mm | 60 mm | 8.4 + 2 mm | 14.4 mm | 10000 |

## Barcode-Product-Label (BPL)




OHA04563

## Dry Packing Process and Materials [8)]




OHA00539

Moisture-sensitive product is packed in a dry bag containing desiccant and a humidity card according JEDEC-STD-033.

## Notes

The evaluation of eye safety occurs according to the standard IEC 62471:2006 (photo biological safety of lamps and lamp systems). Within the risk grouping system of this IEC standard, the device specified in this data sheet falls into the class **low risk (exposure time 100 s)**. Under real circumstances (for exposure time, conditions of the eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. When looking at bright light sources (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment, and even accidents, depending on the situation.

Subcomponents of this device contain, in addition to other substances, metal filled materials including silver. Metal filled materials can be affected by environments that contain traces of aggressive substances. Therefore, we recommend that customers minimize device exposure to aggressive substances during storage, production, and use. Devices that showed visible discoloration when tested using the described tests above did show no performance deviations within failure limits during the stated test duration. Respective failure limits are described in the IEC60810.

This device is designed for specific/recommended applications only. Please consult OSRAM Opto Semiconductors Sales Staff in advance for detailed information on other non-recommended applications (e.g. automotive).

Change management for this component is aligned with the requirements of the lighting market.

For further application related information please visit www.osram-os.com/appnotes

## Disclaimer

**Attention please!**
The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.
For information on the types in question please contact our Sales Organization.
If printed or downloaded, please find the latest version on the OSRAM OS website.

**Packing**
Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

**Product and functional safety devices/applications or medical devices/applications**
OSRAM OS components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.
OSRAM OS products are not qualified at module and system level for such application.

In case buyer – or customer supplied by buyer – considers using OSRAM OS components in product safety devices/applications or medical devices/applications, buyer and/or customer has to inform the local sales partner of OSRAM OS immediately and OSRAM OS and buyer and /or customer will analyze and coordinate the customer-specific request between OSRAM OS and buyer and/or customer.

## Glossary

1) **Brightness:** Brightness values are measured during a current pulse of typically 10 ms, with a tolerance of +/- 7%.

2) **Forward Voltage:** The Forward voltage is measured during a current pulse duration of typically 1 ms with a tolerance of ± 0.05V .

3) **Reverse Operation:** Not designed for reverse operation. Continuous reverse operation can cause migration and damage of the device.

4) **Color reproduction index:** Color reproduction index values (CRI-RA) are measured during a current pulse of typically 10 ms and with a tolerance of ±2.

5) **Chromaticity coordinate groups:** Chromaticity coordinates are measured during a current pulse of typically 25 ms, with an internal reproducibility of ±0.005 and an expanded uncertainty of ±0.01 (acc. to GUM with a coverage factor of k = 3).

6) **Typical Values:** Due to the special conditions of the manufacturing processes of semiconductor devices, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.

7) **Characteristic curve:** In the range where the line of the graph is broken, you must expect higher differences between single devices within one packing unit.

8) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ±0.1 and dimensions are specified in mm.

9) **Tape and Reel:** All dimensions and tolerances are specified acc. IEC 60286-3 and specified in mm.

## Revision History

| Version | Date | Change |
|---|---|---|
| 1.5 | 2019-11-04 | New Layout<br>Schematic Transportation Box<br>Dimensions of Transportation Box |
| 1.6 | 2020-02-28 | Features<br>Ordering Information<br>Dimensional Drawing |

**Published by OSRAM Opto Semiconductors GmbH**
**Leibnizstraße 4, D-93055 Regensburg**
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