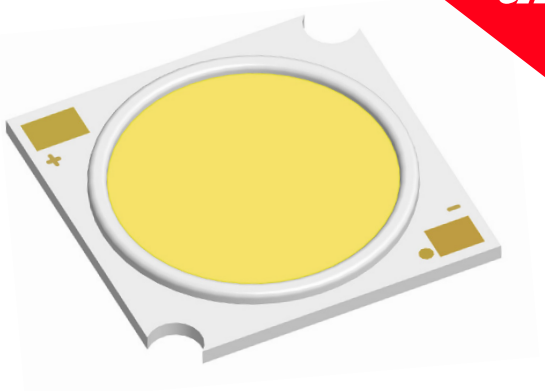
# МОЩНЫЙ СВЕТОДИОД ARPL-37W-TFA-1919-90



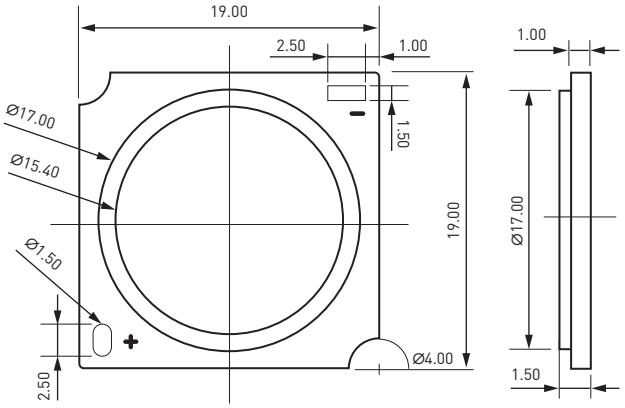
## FEATURES

- 4000K, CRI90, Light effect 127lm/w.
- CRI 70, 80, 90.
- High density LED light source.
- Smooth cooling channel.
- Color gamut distribution of products in compliance with Energy Star / ANSI standards.
- Standard 2SDCM, 3SDCM and 5SDCM color tolerance.
- DC low or high voltage drive.
- Positive company LOGO and product series.
- Comply with RoHS standards.
- More energy efficient than incandescent, halogen and fluorescent lamps.

## SUPERIORITY

- High brightness and light efficiency.
- High color saturation.
- Easy to use with solar and wind energy saving systems.
- Enhanced optical control.
- Greatly reduce the thermal resistance of the light source, improve the weather resistance quality of the light source.
- Reduce the cost of use.
- Reduce maintenance costs.
- No environmental disposal issues.

## MECHANICAL DIMENSION




Notes:
1. All dimension tolerance is ±0.15mm unless otherwise noted.
2. The Tc Test Point of the Product is at The N Pad.

## ELECTRO-OPTICAL CHARACTERISTICS AT $T_j$=85 °C

| Part Number | Typical Power (W) | Nominal CCT (K) | CRI | Pulsed Flux (lm) min | Pulsed Flux (lm) typ | Typical Voltage (V) | Nominal Current (mA) | Typical Efficacy (lm/W) |
|---|---|---|---|---|---|---|---|---|
| **ARPL-37W-TFA-1919-Warm3000-90** | | **3000** | | **4271** | **4649** | | | **118** |
| **ARPL-37W-TFA-1919-Day4000-90** | **37.8** | **4000** | **90** | **4628** | **5006** | **35** | **1080** | **127** |
| **ARPL-37W-TFA-1919-White6500-90** | | **6500** | | **4539** | **4917** | | | **125** |

1. Color temperature is defined according to ANSI C78.377-2015 standard.
2. The light source is tested with a DC power supply. Fix the light source on the radiator first and then start the test when the junction temperature Tj = 25 °C. The test parameters in actual use depend on the heat dissipation design of the luminaire and the ambient temperature of the actual test.
3. Typical test parameters are for reference only.
4. The allowable tolerance of our company for luminous flux is ±7%, the allowable tolerance of voltage is ±2%, and the allowable tolerance of Ra is clearly within +2.
5. The test current provided in the list is for reference only.

## ELECTRICAL CHARACTERISTICS

| Part Number | Drive Current (mA) | Forward Voltage Pulsed, Tj=85°C (V) min | typ | max | Typical Coefficient Of Forward Voltage ΔVf/ΔTj (mV/°C) | Typical Thermal Resistance Junction to Case Rj-c (°C/W) |
|---|---|---|---|---|---|---|
| **ARPL-37W-TFA-1919-90** | **1080** | **33.6** | **35.4** | **37.2** | **–16** | **0.29** |

1. Color temperature is defined according to ANSI C78.377-2015 standard.
2. The light source is tested with a DC power supply. Fix the light source on the radiator first and then start the test when the junction temperature Tj = 25 °C. The test parameters in actual use depend on the heat dissipation design of the luminaire and the ambient temperature of the actual test.
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4. The allowable tolerance of our company for luminous flux is ±7%, the allowable tolerance of voltage is ±2%, and the allowable tolerance of Ra is clearly within +2.
5. The test current provided in the list is for reference only.

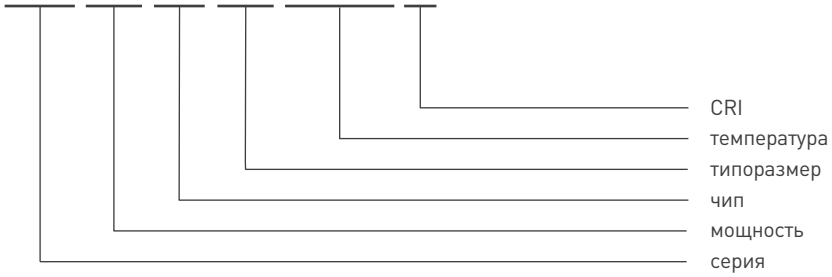
## ABSOLUTE MAXIMUM RATINGS

| Parameter | Maximum Rating |
|---|---|
| **LED Junction Temperature (Tj)** | **125** |
| **Storage Temperature** | **–35... +120** |
| **Operating Temperature** | **–30... +105** |
| **Soldering Temperature** | **350 °C/3-5S** |
| **Electrostatic Discharge (HBM)** | **2000V** |

1. Driven the arrays at higher currents, however lumen maintenance may be reduced.
2. Proper current derating must be observed to maintain junction temperature below the maximum.
3. Pulsed operation with a peak drive current equal to the stated peak pulsed forward current is acceptable if the pulse time is ≤1ms per cycle and the duty cycle is ≤10%.

# PRODUCT NOMENCLATURE

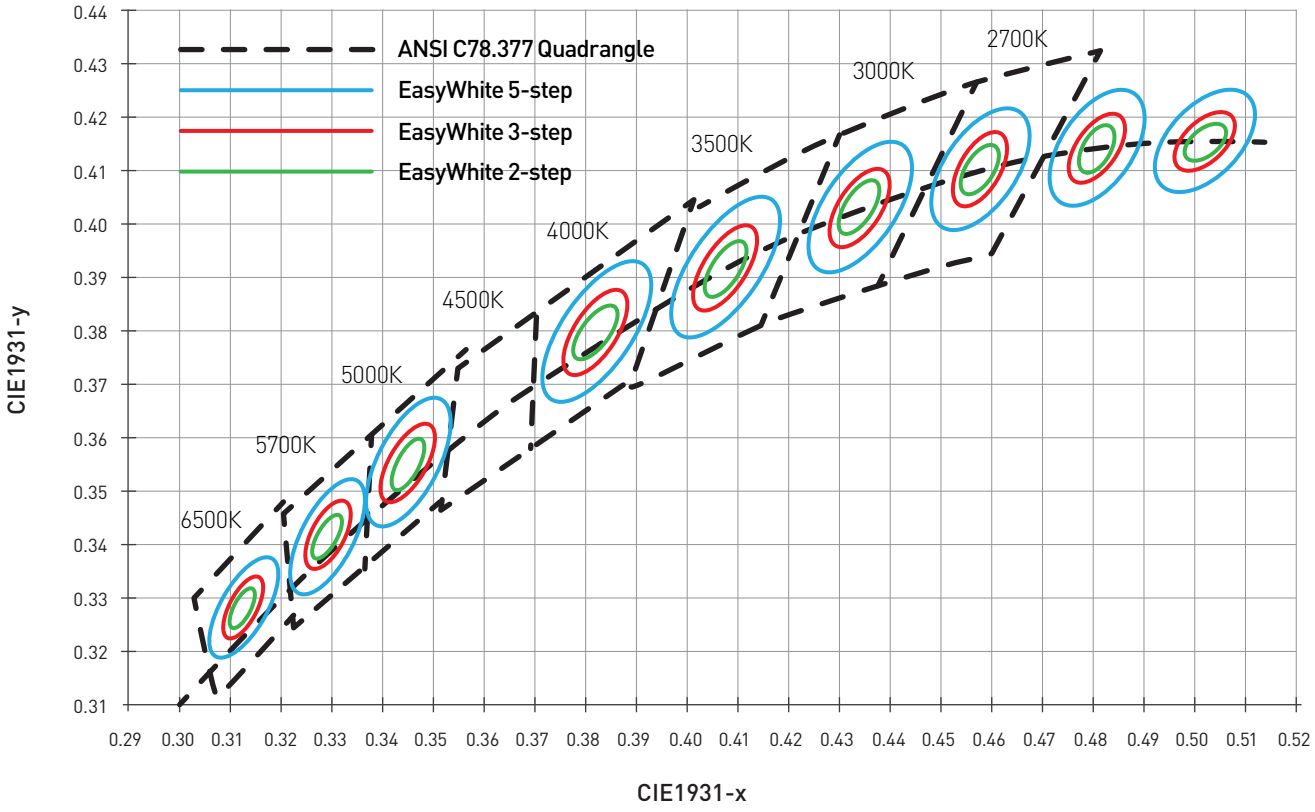
**ARPL-37W-TFA-1919-Day4000-90**




| Артикул | Наименование | Примечание |
|---|---|---|
| **036076** | **Мощный светодиод ARPL-37W-TFA-1919-Warm3000-90** | Мощный светодиод типа COB, размер 19×19 мм. Цвет свечения теплый (3000 K). Угол излучения 120°. Световой поток 4271-4649 лм при If=1080 мА, P=37.8 Вт. VF=35 В. CRI>90. |
| **036077** | **Мощный светодиод ARPL-37W-TFA-1919-Day4000-90** | Мощный светодиод типа COB, размер 19×19 мм. Цвет свечения дневной (4000 K). Угол излучения 120°. Световой поток 4628-5006 лм при If=1080 мА, P=37.8 Вт. VF=35 В. CRI>90. |
| **036078** | **Мощный светодиод ARPL-37W-TFA-1919-White6500-90** | Мощный светодиод типа COB, размер 19×19 мм. Цвет свечения белый (6500 K). Угол излучения 120°. Световой поток 4539-4917 лм при If=1080 мА, P=37.8 Вт. VF=35 В. CRI>90. |

# CHROMATICITY COORDINATE GROUPS

Graph of Test Bins in xy Color Space (Pulsed Test Conditions, $T_C$=25°C)

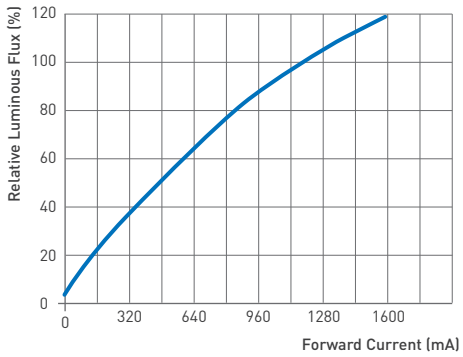



| Nominal CCT | Center Point | | MAJOR AXIS (a , b) | | | Ellipse Rotation Angel, θ |
|---|---|---|---|---|---|---|
| | X | y | 2-Step | 3-Step | 5-Step | |
| 3000 K | 0.4338 | 0.4030 | (0.0057, 0.0028) | (0.0086, 0.0042) | (0.0142, 0.0069) | 53.7 |
| 4000 K | 0.3818 | 0.3797 | (0.0063, 0.0027) | (0.0093, 0.0042) | (0.0157, 0.0068) | 53.4 |
| 6500 K | 0.3290 | 0.3417 | (0.0048, 0.0021) | (0.0072, 0.0032) | (0.0119, 0.0052) | 58.8 |

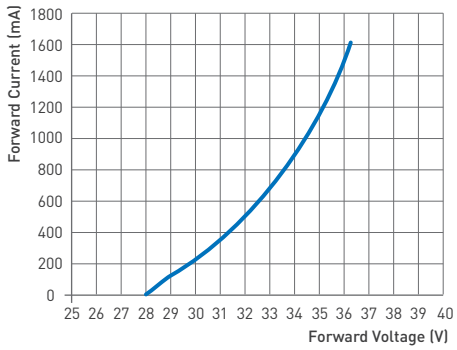
In the CIE 1931 color space, the product maintains a tolerance of ± 0.005 on the x and y coordinates.

# CHARACTERISTIC CURVES

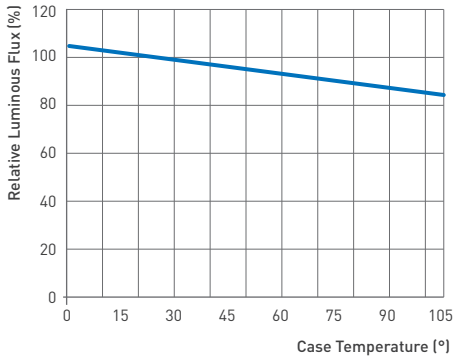
Relative Luminous Flux vs Forward Current



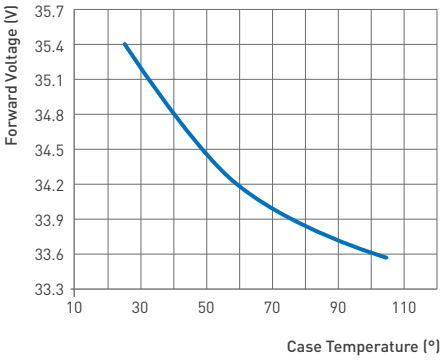

Forward Current vs. Forward Voltage




Relative Luminous Flux vs. CaseTemperature



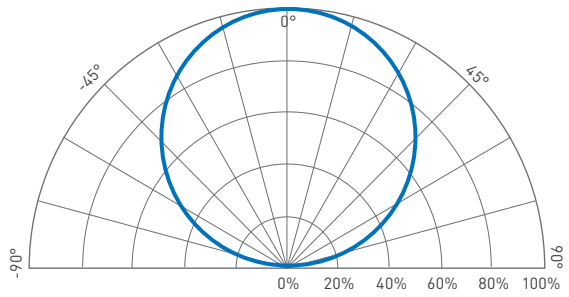

Forward Voltage vs. CaseTemperature



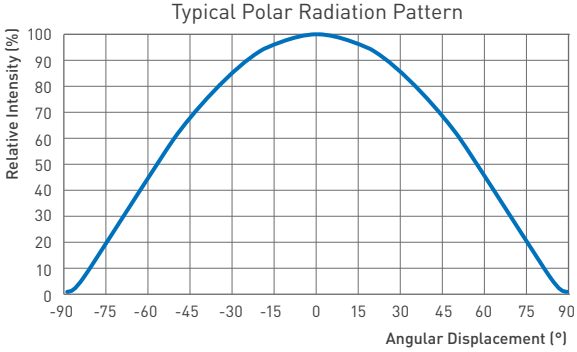

1. TYF does not recommend driving our LED arrays at high currents. Doing so may produce unpredictable results.
2. Products tested based on operation under DC and installed on a heat sink with thermal interface material to ensure Tj (junction temperature) =25 °C. Based on the establishment of the same party test device, the measured value also depends due to the thermal design conditions of the lamp and the exposed ambient temperature and other conditions.

# OPTICAL CURVES

Typical Spatial Radiation Pattern

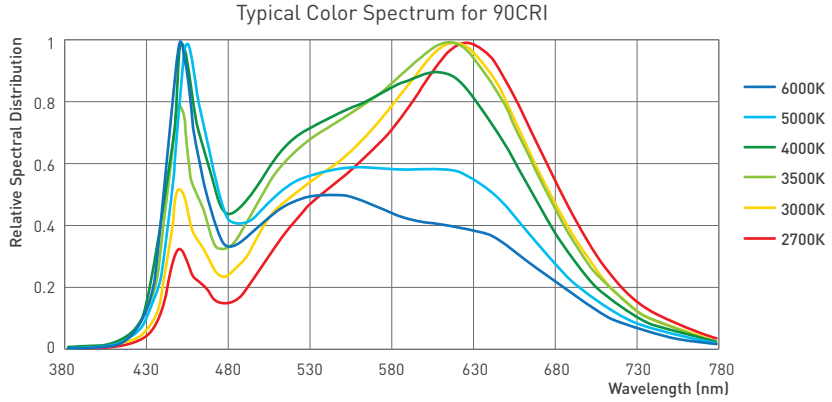



Typical Polar Radiation Pattern




Typical viewing angle is 120°. The viewing angle is defined as the off axis angle from the center line where intensity is ½ of the peak value.

Typical Color Spectrum for 90CRI




1. Color spectra measured at nominal current for Tj = Tc = 25°C.
2. Color spectra shown is 2700K and 6000K with CRI90.

# RELIABILITY TEST

| Test Item | REF. Standard | Test condition | Sample quantity | Failure quantity |
|---|---|---|---|---|
| Thermal Shock | **JESD22-A106** | **–40 ˚C (15min) ~ 100˚C (15min), 200 cycles** | **22** | **0** |
| High Temperature Storage | **JESD22-A103** | **Ta=120 ˚C, 1000h** | **22** | **0** |
| Low Temperature Storage | **JESD22-A119** | **Ta=–40 ˚C, 1000h** | **22** | **0** |
| High Temperature High Humidity Life Test | **JESD22-A101** | **Ta=85 ˚C, RH>=85%, 1000h** | **22** | **0** |
| High Temperature Life Test | **JESD22-A108** | **Ta=105 ˚C, IF=1080mA@1 pcs 1000h** | **22** | **0** |
| Low Temperature Life Test | **JESD22 -A108** | **Ta=–40˚C, IF=1080mA@1 pcs 1000h** | **22** | **0** |