

# DRAGONpuck

## LED Modules for Accent Lighting Applications



The DRAGONpuck LED module by SYLVANIA bridges the gap between the requirements of white light illumination and the capabilities of LED technology. These modules provide bright and intense illumination for accent lighting applications.

The DRAGONpuck module consists of three hi-flux LEDs mounted on a metal substrate circuit board and an optical lens. The module is more efficient than incandescent or halogen light sources with a similar luminous intensity. DRAGONpuck is optimally paired with OSRAM OPTOTRONIC® constant current power supplies.

### Key Features & Benefits

- Compact hi-flux LED light source with an on-board optic for accent lighting applications
- Small, innovative light source design for compact fixtures
- Simple assembly to metallic heat sink surface with an M3x8 screw
- Luminous intensity up to 900 candelas for white light
- No ultraviolet or infrared radiation
- Dimensions (Height x Diameter) 0.48in x 1.38in
- Pre-wired with a 7.9 inch polarized cable
- Optimal operations with OPTOTRONIC constant current power supplies
- Service life of up to 50,000 hours when temperature at Tc Point is maintained at 40°C
- Higher efficacy than incandescent or halogen light sources
- Heat sink is available that has been specifically designed for the DRAGONpuck module
- RoHS compliant

### Product Offering

Ordering Description	Wattage (W)	Color
DRAGONpuck/OS/DP3/W3F-727	3.6	2700K
DRAGONpuck/OS/DP3/W2-733*	3.6	3300K
DRAGONpuck/OS/DP3/W2-847*	3.6	4700K
DRAGONpuck/OS/DP3/W3F-854	3.6	5400K
DRAGONpuck/OS/DP3/W2-854*	3.6	5400K
DRAGONpuck/OS/DP3/W2-865*	3.6	6500K
DRAGONpuck/OS/DP3/A1	2.4	Red
DRAGONpuck/OS/DP3/Y1	2.4	Yellow
DRAGONpuck/OS/DP3/V1	3.6	Green
DRAGONpuck/OS/DP3/B1	3.6	Blue

\*Limited Availability

### Application Information

#### Applications

Task lighting – reading lights, under cabinet lighting  
 Accent lighting – cove lighting, outdoor/landscape lighting  
 Street lighting  
 Refrigeration and freezer display case lighting  
 Vehicle cabin lighting – RV, truck, boat, airplane  
 Solar powered installations

## Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	Date

## Ordering Information

Item Number	Ordering Description	Module Diameter (in.)	No. of LEDs	Power (W)	Voltage (Vdc)	Current per module (A)	Color** (wavelength)	Typical Luminous* Intensity (cd)	Beam Angle (degrees)
70281	DRAGONpuck/OS/DP3/W3F-727	1.38	3	3.6	10.3	0.35	2700K	630	16
70142	DRAGONpuck/OS/DP3/W2-733***	1.38	3	3.6	10.3	0.35	3300K	230	20
70120	DRAGONpuck/OS/DP3/W2-847***	1.38	3	3.6	10.3	0.35	4700K	285	20
70169	DRAGONpuck/OS/DP3/W3F-854	1.38	3	3.6	10.3	0.35	5400K	900	16
70107	DRAGONpuck/OS/DP3/W2-854***	1.38	3	3.6	10.3	0.35	5400K	285	20
70108	DRAGONpuck/OS/DP3/W2-865***	1.38	3	3.6	10.3	0.35	6500K	285	20
70121	DRAGONpuck/OS/DP3/A1	1.38	3	2.4	6.9	0.35	617 nm	215	16
70124	DRAGONpuck/OS/DP3/Y1	1.38	3	2.4	6.9	0.35	587 nm	215	16
70123	DRAGONpuck/OS/DP3/V1	1.38	3	3.6	10.3	0.35	505 nm	285	16
70122	DRAGONpuck/OS/DP3/B1	1.38	3	3.6	10.3	0.35	470 nm	100	16

\* All data is related to entire module measured at Tc Point of 25°C. Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process. End users need to take into account the lumen depreciation as the temperature rises with various thermal management solutions installed.

\*\*CRI >70 for all 3300K. All other white color temperatures have a CRI >80. Due to the special conditions of the manufacturing processes of LEDs, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

\*\*\* Limited availability, check with your SYLVANIA representative for more details.

## Ordering Guide

DRAGONpuck	7-8	65
Module Name	CRI	Color Temperature
	7 > 70	27 = 2700K
	8 > 80	33 = 3300K
		47 = 4700K
		54 = 5400K
		65 = 6500K

## Power Supply Information

### OPTOTRONIC® OT9/100-120/350 E or OT9/10-24/350 DIM E

LED Item Number	Color	No. of Modules per Supply
70281	White	2
70169	White	2
70142	White	2
70120	White	2
70107	White	2
70108	White	2
70121	Red	3
70124	Yellow	3
70123	Green	2
70122	Blue	2

### OPTOTRONIC® OT3/120-240/350

LED Item Number	Color	No. of Modules per Supply
70281	White	1
70169	White	1
70142	White	1
70120	White	1
70107	White	1
70108	White	1
70121	Red	1
70124	Yellow	1
70123	Green	1
70122	Blue	1

## Minimum and Maximum Ratings

Parameter	Symbol	Values
Operating Temperature at Tc Point	T <sub>op</sub>	-30... +85°C (-22 to +185°F)
Storage Temperature	T <sub>stg</sub>	-30... +85°C (-22 to +185°F)
Maximum Allowable Current (dc)	I <sub>max</sub>	350mA
Maximum Reverse Voltage	V <sub>R</sub>	0 Vdc

Notes:

- Exceeding maximum ratings may damage the LED module and cause potential safety hazards.
- Elevated operating temperatures can be expected to negatively impact the service life in terms of lumen output.

## Safety Information

**WARNING: ONLY QUALIFIED PERSONNEL SHOULD PERFORM INSTALLATION.**

**TO AVOID ELECTRICAL SHOCK OR COMPONENT DAMAGE, DISCONNECT POWER BEFORE ATTEMPTING INSTALLATION OF THE POWER SUPPLIES AND/OR MODULES.**

Failure to install the power supplies and/or LED modules in accordance with the National Electric Code (NEC), all applicable Federal, State and local electric codes as well as the specific Underwriter's Laboratories (UL) safety standards for the installation, location and application may cause serious personal injury, death, property damage and/or product malfunction.

These instructions are guidelines for installation of SYLVANIA LED modules and power supplies. Installation requirements may vary depending on the application. Licensed electricians should provide all installation services for connection of both primary and secondary (input/output) of the power supplies.

1. The LED module itself and all its components must not be mechanically stressed.
2. Assembly must not damage or destroy conducting paths on the circuit board.
3. Installation of LED modules (with power supplies) needs to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
4. Correct electrical polarity needs to be observed. Wrong polarity may destroy the module and will result in no light emission.
5. Serial connection is required for multiple pack assemblies. Do not exceed the maximum load of the power supply. See power supply ordering information for maximum allowed modules.
6. Pay attention to standard ESD precautions when installing the module.
7. Dimming of the DRAGONpuck is possible using the Pulse Width Modulation (PWM) functionality of the OPTOTRONIC OT 09/10-24/350 DIM/E. Dimming through the regulation of current amplitude will result in a spectral color shift.
8. Damage by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
9. Modules may be hot to touch. Use appropriate caution.

The LED Module incorporates no protection against short circuits, overload or overheating. Therefore it is necessary to operate the modules with an electronically stabilized power supply offering protection against the above mentioned safety risks.

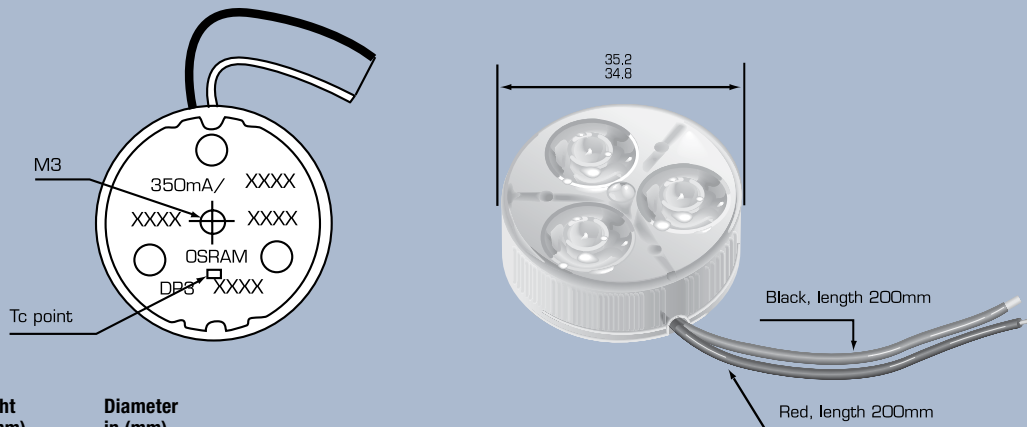
**OSRAM OPTOTRONIC power supplies are specifically designed with protection features for safe operation.**

When using power supplies other than OPTOTRONIC the following basic safety features should be verified in addition to any other application specific concerns and local safety codes:

- Short circuit protection
- Overload protection
- Overheat protection
- Correct output voltage, including consideration for ripple and spikes.

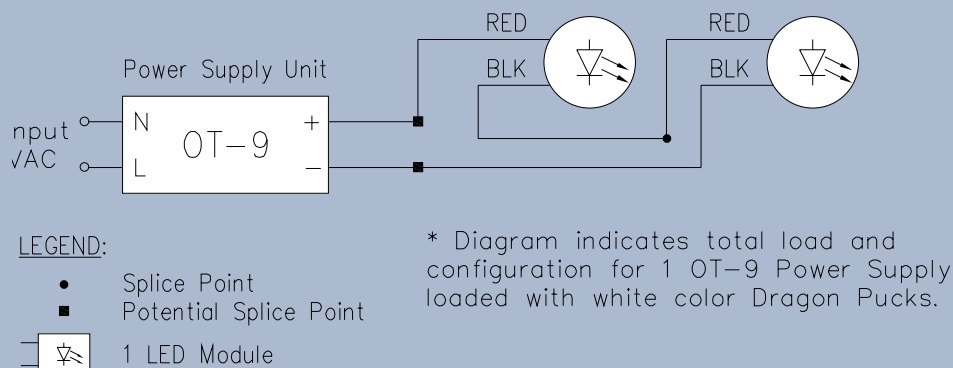
## Assembly Diagram

(All dimensions in mm)



	Height in (mm)	Diameter in (mm)
Entire PCB	0.48 (12.19)	1.38 (35.2)

## Wiring Diagram



## Assembly Information

1. The mounting of the module is facilitated by means of a M3x8 (8mm) screw which fits to a threaded hole in the rear of the DRAGONpuck housing. The length of the screw depends on the thickness of the heat sink used.
2. The module should be in good thermal contact with the designed metallic mounting surface. Use of an appropriate heat sink compound is recommended to eliminate air gaps.
3. To obtain maximum LED-lifetime please read carefully the recommended procedures concerning thermal management in our application note "Lifetime of LED-modules" before beginning construction of luminaires. This application note is available from your SYLVANIA representative.
4. Module is intended for use with 350 mA constant current drive condition as is provided by the OT9/100-120/350, OT9/10-24/350 DIM E and OT3/120-240/350 (see PIB ECS052R2 for details). The module is not intended for use with constant voltage power supplies, including other LED power supplies.
5. Installation of the DRAGONpuck must include provision for thermal management to avoid premature failure of the product and to obtain expected service life. Service life (i.e. lumen depreciation) is primarily a function of LED temperature which is to be monitored on the circuit board at the designated "Tc Point".
6. There is no exact installation prescription to obtaining an appropriate Tc Point temperature because every fixture design is different. In general, the DRAGONpuck module should be mounted to a clean, flat metal surface which has enough surface area to transfer the heat from the module to the surrounding air. The metal surface can be part of a conventional finned heat sink or can be part of the mass of the fixture itself.
7. Concerning fixture design, it is important to understand that once heat is transferred to a "heat sink", that heat must still be allowed to escape the "system". A heat sink transferring the thermal energy to the inside of an enclosed cavity may ultimately be of little use.
8. The fixture makers' strategy should be to design a prototype fixture and test that fixture in an appropriate ambient environment while monitoring the temperature at the Tc Point which should be allowed enough time to reach thermal equilibrium. Tc Point temperature can be measured with a standard thermocouple in direct contact with the circuit board at the Tc Point or by use of ML4C Series non-reversible OMEGALABELS® (www.omega.com) or equivalent.

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