

Product Information Bulletin

DRAGONpuck® LED Module



The new OSRAM SYLVANIA DRAGONpuck LED module for spotlighting applications.

With the addition of its new DRAGONpuck LED modules, OSRAM SYLVANIA is rapidly bridging the gap between the requirements of white light illumination and the capabilities of LED technology. These new modules offer bright and intense light for spotlighting applications such as landscape lighting, display shelves, under cabinet lighting, reading lights and other general illumination applications.

The DRAGONpuck LED modules consist 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. It comes pre-wired with polarized wires for easy installation.

In continuing with its leadership in the lighting industry by providing complete system solutions, OSRAM SYLVANIA offers OPTOTRONIC constant current power supplies to operate the new DRAGONpuck modules.

- Compact hi-flux LED light source with an on-board optic for spot-lighting applications
- Luminous intensity of up to 285 candelas for white light
- Sleek, innovative light source design for compact fixtures
- Simple assembly to metallic heat-sink surface with an M3x8 screw
- Pre-wired with 7.9 inch polarized cables (red for +, black for -)
- Better efficacy than incandescent or halogen light sources
- Long service life when installed with proper thermal management
- No ultraviolet or infrared radiation

Dimensions (H x Dia.): 0.48 in X 1.38 in

- Optimal operation with OPTOTRONIC®, constant current power supplies (Literature ordering code ECS052)
- Service life of up to 50,000 hours when temperature at Tc point is maintained at 40°C
- New White (W3) DRAGONpucks produce a higher luminous intensity and provide a more uniform white color
- Heatsink is available that has been specifically designed for the DRAGONpuck and HF Disk modules. (NAED 70136)

Product Availability

Product	Wattage (W)	Color
DRAGONpuck/OS/W3-733	3.6	White-3300K
DRAGONpuck/OS/W3-847	3.6	White-4700K
DRAGONpuck/OS/W3-854	3.6	White-5400K
DRAGONpuck/OS/W3-865	3.6	White-6500K
DRAGONpuck/OS/DP3/W2-733	3.6	White-3300K
DRAGONpuck/OS/DP3/W2-847	3.6	White-4700K
DRAGONpuck/OS/DP3/W2-854	3.6	White-5400K
DRAGONpuck/OS/DP3/W2-865	3.6	White-6500K
DRAGONpuck/OS/DP3/B1	3.6	Blue
DRAGONpuck/OS/DP3/V1	3.6	Verde
DRAGONpuck/OS/DP3/Y1	2.4	Yellow
DRAGONpuck/OS/DP3/A1	2.4	Red

Application Information

Applications

Task lighting – reading lights, under cabinet lighting
Accent lighting – cove lighting, outdoor/landscape lighting
Shelf lighting
Refrigerated and freezer display case lighting
Light box, backlit graphics, edge lighting
Vehicle cabin lighting – RV, truck, boat, airplane
Solar powered installations

Power Supply Information

The DRAGONpuck is presently compatible with the OT9/100-120/350 E (NAED 51525), OT9/10-24/350 DIM E (NAED 51526) and the OT3/120-240/350 power supply products. Contact your OSRAM SYLVANIA representative for specific information on these products and possible updates to this list.



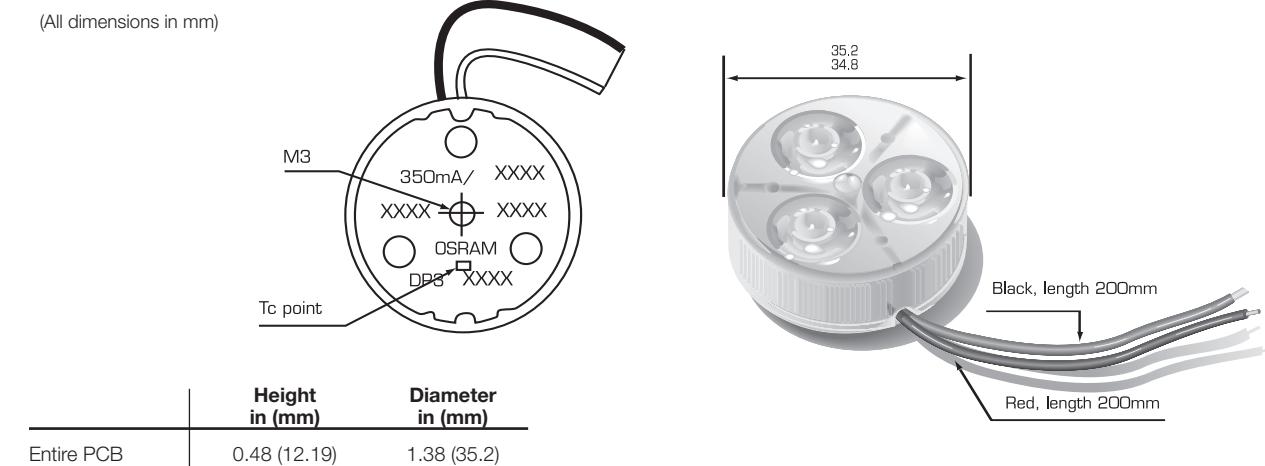
Maximum Ratings For DRAGONpuck® (all colors)

Parameter	Rating
Operating Temperature at Tc-Point	-30...+85°C (-22...+185°F)
Storage Temperature	-30...+85°C (-22...+185°F)
Maximum Allowable Current (dc)	350 mA
Maximum Reverse Voltage	0 V

Notes:

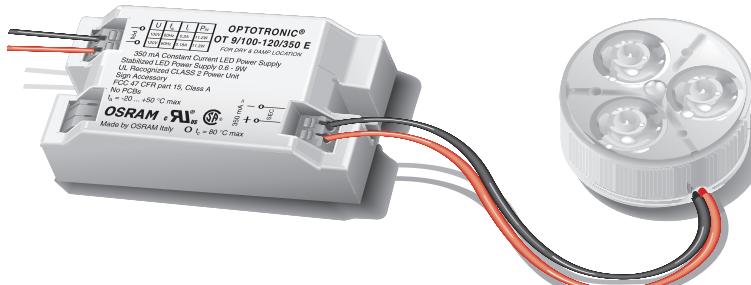
1. Exceeding maximum ratings may damage the LED module and cause potential safety hazards.
2. Elevated operating temperatures can be expected to negatively impact the service life in terms of lumen output.
3. Incorrect wiring (i.e. reverse polarity) with constant current power supplies may damage the LED module.
4. Not intended for use with constant voltage power supplies.

Dimensions

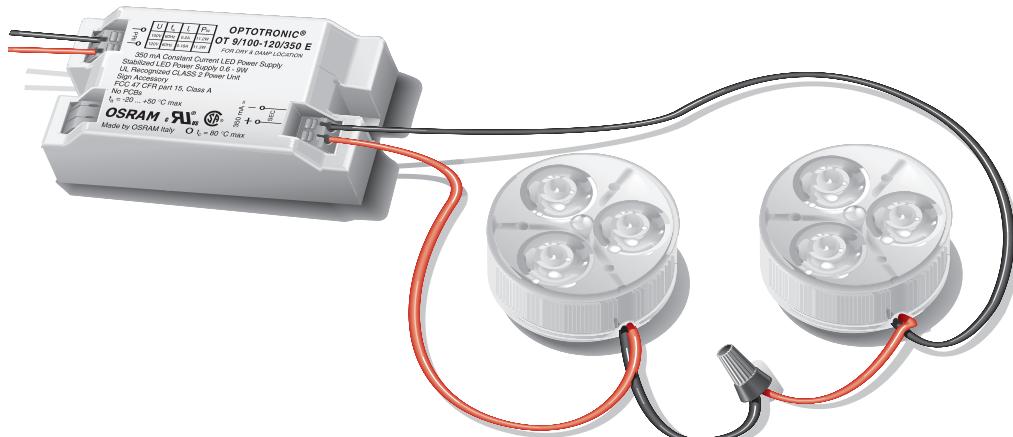


Wiring Diagrams

Single Connection



Multiple Puck Assembly



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 OSRAM 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 absolutely 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 are required 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 Information/Application Notes

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 luminaries. This application note is available from your OSRAM 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 OSRAM 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. In the end, the heat sink areas from the chart below only represent a starting point for initial design work while the Tc-Point temperature serves as the empirical test of proper thermal management. 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.

Ordering and Specification Information

Item Number	Ordering Abbreviation	Color	Number of LEDs	Current (mA)*	Power (W)*	Radiance Angle (°)*	Wavelength(nm) Color Temp (K)*	Lum. Intensity (cd)*
70167	DRAGONpuck/OS/W3-733	White	3	350	3.6	16	3300K	600
70168	DRAGONpuck/OS/W3-847	White	3	350	3.6	16	4700K	900
70169 [†]	DRAGONpuck/OS/W3-854	White	3	350	3.6	16	5400K	900
70170 [†]	DRAGONpuck/OS/W3-865	White	3	350	3.6	16	6500K	900
70142 ^{**}	DRAGONpuck/OS/DP3/W2-733	White	3	350	3.6	20	3300K	230
70120	DRAGONpuck/OS/DP3/W2-847	White	3	350	3.6	20	4700K	285
70107	DRAGONpuck/OS/DP3/W2-854	White	3	350	3.6	20	5400K	285
70108	DRAGONpuck/OS/DP3/W2-865	White	3	350	3.6	20	6500K	285
70122	DRAGONpuck/OS/DP3/B1	Blue	3	350	3.6	16	470 nm	100
70123	DRAGONpuck/OS/DP3/V1	Verde	3	350	3.6	16	505 nm	285
70124	DRAGONpuck/OS/DP3/Y1	Yellow	3	350	2.4	16	587 nm	215
70121	DRAGONpuck/OS/DP3/A1	Red	3	350	2.4	16	617 nm	215

*All data are related to the entire module.

**CRI>70 for the 3300K. All other white color temperatures have a CRI>80. Due to the special conditions of the manufacturing processes of LED, 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.

Packaging information: Case qty: 16pcs Min. order qty: 16pcs

[†]Please contact your OSRAM SYLVANIA representative on availability.

Power Supply Ordering Information

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

OPTOTRONIC® OT3/120-240/350

LED Item Number	Color	No. of Modules per Supply	LED Item Number	Color	No. of Modules per Supply
70108	White	2	70108	White	1
70107	White	2	70107	White	1
70120	White	2	70120	White	1
70142	White	2	70142	White	1
70121	Red	3	70121	Red	1
70124	Yellow	3	70124	Yellow	1
70123	Verde	2	70123	Verde	1
70122	Blue	2	70122	Blue	1
70170	White	2	70170	White	1
70169	White	2	70169	White	1
70167	White	2	70167	White	1
70168	White	2	70168	White	1

OSRAM SYLVANIA
National Customer
Service and Sales Center
18725 N. Union Street
Westfield, IN 46074

Industrial Commercial

Phone: 1-800-255-5042
Fax: 1-800-255-5043

National Accounts

Phone: 1-800-562-4671
Fax: 1-800-562-4674

OEM/Specialty Markets

Phone: 1-800-762-7191
Fax: 1-800-762-7192

Display/Optic

Phone: 1-888-677-2627
Fax: 1-800-762-7192

In Canada
OSRAM SYLVANIA LTD.
Headquarters
2001 Drew Road
Mississauga, ON L5S 1S4

Industrial Commercial

Phone: 1-800-263-2852
Fax: 1-800-667-6772

Special Markets

Phone: 1-800-265-2852
Fax: 1-800-667-6772

Visit our website: www.sylvania.com

Ordering Guide

DRAGONpuck	/	OS	/	DP3	/	W2-865
DRAGONpuck	/	OSRAM	/	ID number	/	Color code- Color Temperature W2/W3-865= White, 6500 K W2/W3-854= White, 5400 K W2/W3-847= White, 4700 K W2/W3-733= White, 3300 K
						A1= Red Y1= Yellow V1= Verde B1= Blue

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