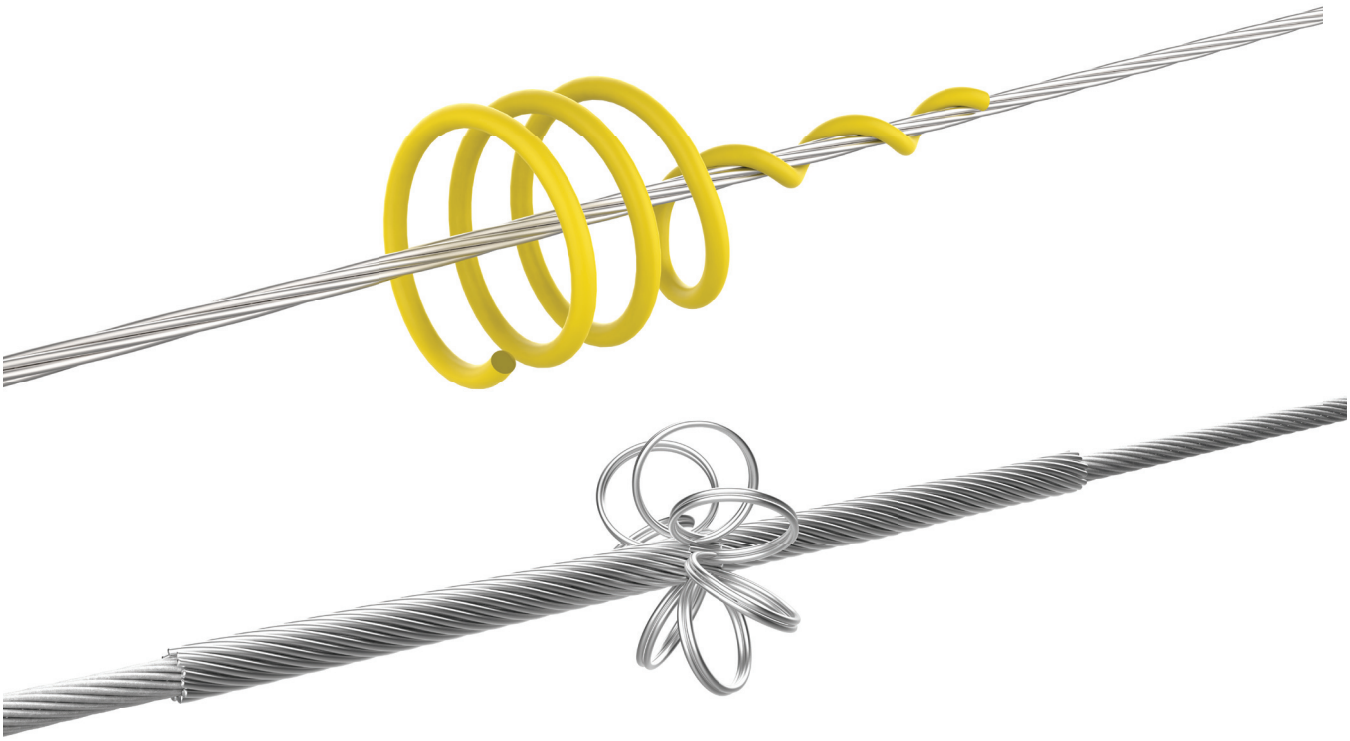


BIRD-FLIGHT™ DIVERTER

The **BIRD-FLIGHT Diverter (BFD)** is designed to make overhead lines and guyed structures visible to birds and provides an economical means of reducing the hazard to both lines and birds. For low- and medium-voltage construction, the BFD is installed directly to the phase conductors (bare or jacketed). For high voltages, it is typically used on the shield wire and/or OPGW cable.

The **Plastic BFD** is manufactured from rigid, high-impact PVC possessing excellent chemical resistance and tensile strength properties. The BFD will retain good physical characteristics over a range of temperatures. For most OHSW and OPGW applications, the BFD can be installed robotically.

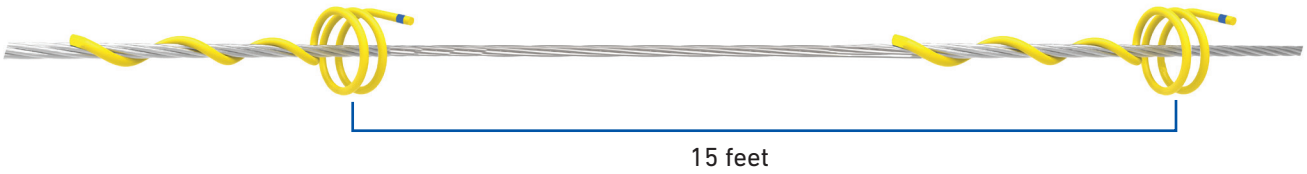
The **Aluminum BFD** is manufactured from a high strength, corrosion-resistant aluminum alloy material. It is designed for use on conductors operated at elevated temperatures (up to 250˚C).

FEATURES AND BENEFITS

- Lightweight, economical, and easily applied by hand or hot stick
- Positive grip prevents product from moving along the span
- Long service life without deterioration of material properties
- Minimal wind resistance
- Manufactured from gray or yellow high-impact PVC with UV protection or aluminum alloy for high temperature requirements (contact PLP for other color options)
- For voltages up to 230 kV. Contact PLP for 345 kV applications.
- Meets **UL 94 V-0** flammability requirements
- Robotically installed versions available for the plastic BFD

SPACING

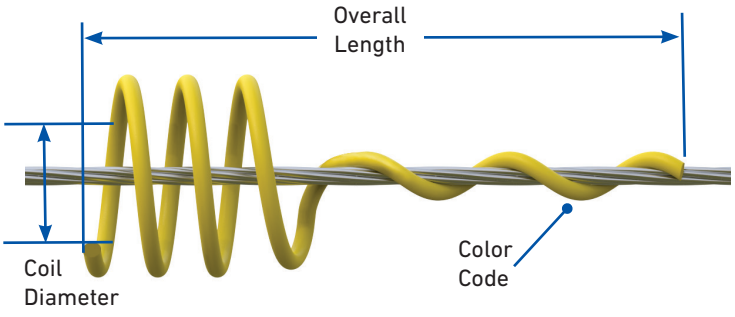
Horizontal Line Layout



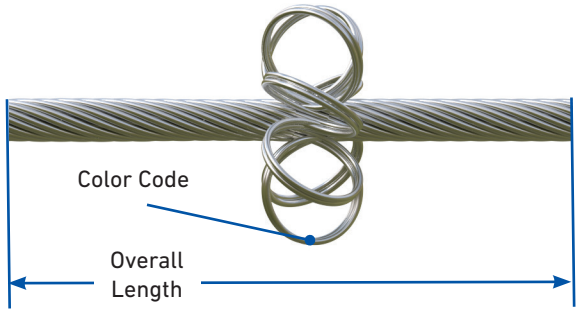
For optimal results, spacing distances are generally recommended at 15-foot intervals, but is dependent upon local conditions. Since wind resistance is very limited, a sufficient number of BIRD-FLIGHT Diverters can be used to ensure adequate visibility without creating stresses on the line. When marking multiple cables in a span, overall visibility is improved by staggering the placement between cables.

NOTE: See Appendix for additional Horizontal Line Layouts on medium voltage, three phase, and one phase.

SPECIFICATIONS



Plastic



Aluminum

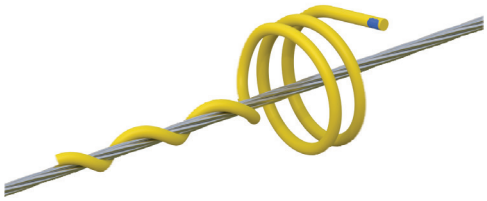
BIRD-FLIGHT Diverter

Characteristics	Description	
	Plastic (PVC)	Aluminum
Length	Distance product covers the conductor	
Color Code	Identifies the conductor diameter ranges for colors corresponding to tabular information on catalog pages	
Coil Diameter	Internal diameter of diverter coil	Approximately 4 inches
Application Voltage	Gray and Yellow; 230 kV and below Semi-Conductive 345 kV	230 kV and below
Thermal Rating	125°C Continuous	250°C Continuous

BIRD-FLIGHT DIVERTER ROBOTIC INSTALLATIONS

LineFly™ Robot

Offered as a service in partnership with FulcrumAir, installations of PLP's BIRD-FIGHT Diverters utilizing the revolutionary LineFly™ robot provide utility asset owners with dramatic improvements in workplace safety and project efficiency while also reducing environmental disruptions. Using proprietary systems jointly developed by FulcrumAir and PLP, the robotic system quickly delivers precision installations of PLP's BIRD-FLIGHT Diverters, positioning them within inches of any predetermined distance.



Improved Workplace Safety

- Reduces lineworker exposure to safety hazards
- Eliminates the need for helicopter installations

Enhanced Project Efficiency

- More cost-effective than traditional installation methods
- Multiple robots can be used simultaneously for rapid construction completion
- Spans covered in a matter of minutes

Precision Product Installations

- Installs BIRD-FLIGHT Diverters at precise locations, ensuring optimal visual alert for avian species

Reduced Environmental Disruptions

- Battery-powered propulsion drones provide a significantly quieter and more environmentally friendly method of installing diverters compared to using helicopters or bucket trucks

ORDERING INFORMATION

Select the appropriate BIRD-FLIGHT Diverter size.

- For use on bare and jacketed conductors, strand, and fiber optic cables
- Contact a PLP representative for more information regarding which product to select for a specific application.

BIRD-FLIGHT Diverter – PVC

Catalog Number		LineFly™ Robotic Installation	Conductor Diameter Range		Overall Length	Diverter Coil Outer Diameter	PVC Rod Diameter	Color Code
YELLOW	GRAY		Minimum	Maximum				
			in (mm)					
BFDMS3331	BFDMS3346	–	0.175 (4.4)	0.249 (6.3)	8.00 (203)	2.25 (57)	0.375 (9.53)	Black
BFDMS3155	BFDMS2921	–	0.250 (6.4)	0.349 (8.9)	8.50 (216)	2.50 (64)		Blue
BFDMS13152R	BFDMS13153R	Yes	0.312 (7.9)	0.349 (8.9)	10 (254)	4.25 (108)		Blue
BFDMS3164	BFDMS3355	–	0.350 (8.9)	0.449 (11.4)	9.5 (241)	2.75 (70)		Brown
BFDMS11135	BFDMS11060	–			12.37 (314)	4.25 (108)		Brown
BFDMS11135R	BFDMS11060R	Yes	0.350 (8.9)	0.449 (11.4)	11.5 (292)	4.25 (108)		Brown
BFDMS3341	BFDMS3366	–	0.450 (11.4)	0.599 (15.2)	14.5 (368)	4.25 (108)		Green
BFDMS3341R	BFDMS3366R	Yes	0.450 (11.4)	0.599 (15.2)	13.5 (343)	4.25 (108)		Green
BFDMS3344	BFDMS3371	–	0.600 (15.2)	0.770 (19.6)	17.00 (432)	4.25 (108)		Purple
BFDMS3345	BFDMS3376	–	0.771 (19.6)	0.858 (21.8)	15.00 (381)	4.25 (108)		Red
BFDMS3405	BFDMS11699	–	0.859 (21.8)	0.970 (24.6)	16.50 (419)	4.50 (114)		Orange
BFDMS11111	BFDMS12290	–	0.971 (24.7)	1.121 (28.5)	15.50 (394)	4.25 (108)		Pink
BFDMS11430		–	1.222 (31)	1.306 (33.2)	16.25 (412.8)	4.38 (111.3)	0.438 (11.13)	Gray
BFDMS11110		–	1.307 (33.2)	1.530 (38.7)	17.00 (431.8)	4.70 (119.3)		Black
BFDMS12351		–	1.531 (38.9)	1.786 (45.4)	20.00 (508)	4.88 (124)		White
BFDMS11566		–	1.787 (45.4)	2.100 (53.3)	23.00 (584.2)	5.25 (133.4)		Purple
BFDMS12603		–	2.101 (53.4)	2.500 (63.5)	26.00 (660.4)	5.25 (133.4)		Orange

NOTE: Catalog Numbers ending with "R" are for Robotic Installations. Please see page 22 for additional details on LineFly Robotic Installation.

High-Temperature BIRD-FLIGHT Diverter

Catalog Number	Material		Conductor Diameter Range		Overall Length	Diverter Coil Outer Diameter	Color Code
			Minimum	Maximum			
			in (mm)				
BFDMS11543	Aluminum		0.800 (20.3)	0.850 (21.6)	26.00 (660)	4.00 (101)	Pink
BFDMS12679			1.100 (28.0)	1.165 (29.5)	37.00 (939)		Purple
BFDMS12645			1.300 (33.0)	1.350 (34.3)	43.00 (1092)		Red
BFDMS12687			1.565 (39.8)	1.635 (41.5)	54.00 (1371)		Black

NOTE: High-Temperature BIRD-FLIGHT Diverters are **NOT** LineFly Robot installable. Consult PLP for BIRD-FLIGHT Diverters for 345kV Phase Conductor application.

CONTACT A PLP REPRESENTATIVE

UNITED STATES

INTERNATIONAL

JAIME PALLARES
GLOBAL MARKET MANAGER
TRANSMISSION

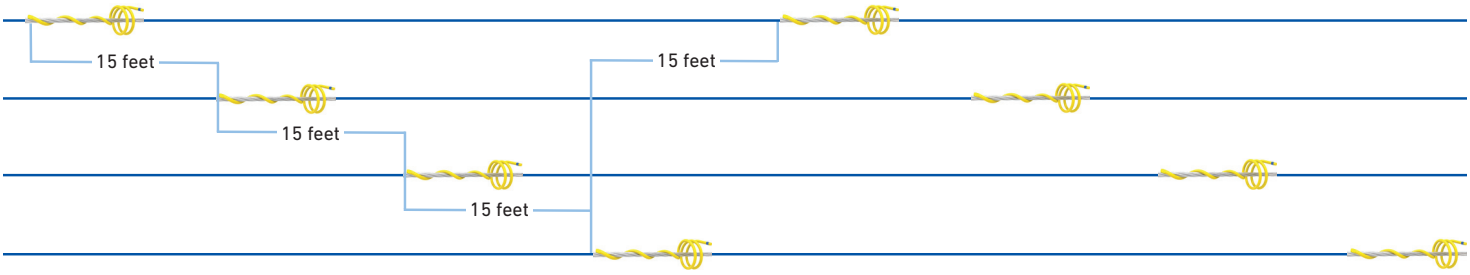
+34 95 499 72 23
jaime.pallares@plp.com

APPENDIX

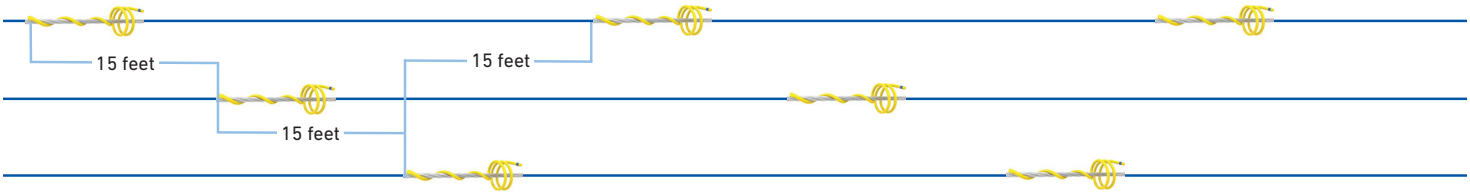
BIRD-FLIGHT™ DIVERTER, SWAN-FLIGHT™ DIVERTER, AND RAPTOR-CLAMP™ DIVERTER SPACING

Horizontal Line Layout

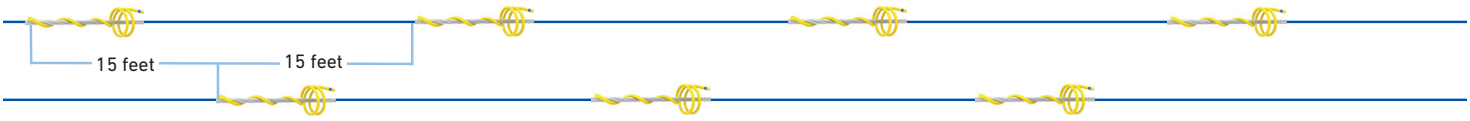
Medium Voltage



Three Phase



One Phase



BIRD-FLIGHT Diverters are shown in the diagram above, SWAN-FLIGHT Diverters and RAPTOR CLAMP™ Diverters are placed in the same positions. For optimal results, spacing distances are generally recommended at 15-foot intervals, depending upon local conditions.