

Phoenix® fixtures lighten the burden for dragline operators

For decades Florida has been a leading supplier of phosphate, accounting at times for as much as 25% of the global supply. Raw phosphate rock is processed into phosphoric acid, a primary ingredient in fertilizers. The South Fort Meade Mine in Florida is owned by the Mosaic Company, the world's second largest fertilizer manufacturer.



Dragline at South Fort Meade Mine in Florida.



Draglines operating at night require performance lighting.

Weighing several million pounds, and with booms up to 350 feet long, draglines undergo constant shock and vibration as each massive bucket is dropped, dragged, swung, and emptied. Operating through the night, draglines require exceedingly durable and reliable lighting fixtures to ensure safe and efficient operation.

Strategic lighting improves operations

At the South Fort Meade Mine in Florida, nighttime dragline operators were battling eye fatigue and discomfort glare caused by inadequate lighting. One operator explained, "I don't think there's anything more aggravating to me than to have to do something and not be able to see it." In addition, the existing light fixtures, not designed with mining applications in mind, required frequent unscheduled maintenance and were a considerable source of aggravation for maintenance personnel. When the time came to retrofit a dragline, mine staff, working with P&H MinePro, approached Phoenix Products for a solution. With long experience providing lighting solutions to the mining industry, Phoenix Products set about to find answers.

At a Glance:

Project:
Dragline at phosphate mine

Location:
South Fort Meade Mine,
Florida

Product Used:
Phoenix MRSE Series
1000-watt Heavy-duty
Floodlights with lamp
gloves and metal halide
lamps. Installed on the
dragline boom.

Number Installed:
18 MRSE
Heavy-duty Floodlights
with lamp gloves

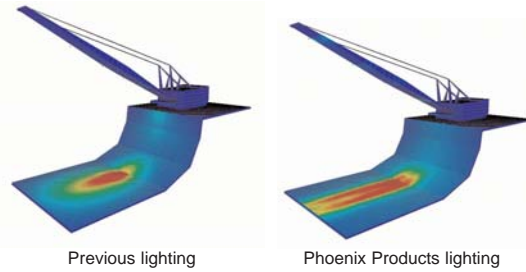


MRSE mounted on dragline at South Fort Meade Mine

PHOENIX®

Floodlights, designed for mining equipment, with proven performance

Phoenix performed a lighting study for the dragline and found that a more strategic lighting plan could indeed significantly improve operator visibility -- without adding to the number of fixtures. Phoenix showed they could deliver more uniform light to eliminate glare and eye fatigue problems. Phoenix also proposed using a specially-colored lamp to emphasize the color of the phosphate vein to help operators discern ore from overburden.



Previously operators had to look through an illuminated haze and drop their bucket beyond, into a darker work area at the end of the boom. *Without adding fixtures*, Phoenix was able to provide more uniform lighting.



A specially-colored lamp emphasizes the color of the matrix, helping operators discern ore from overburden.

For the application, Phoenix selected the MRSE Series fixture. Designed specifically for use on heavy mining equipment, the MRSE has several performance features designed to extend lamp life in rough service operations. Among these is a free-floating multi-plane lamp diaphragm that isolates the lamp from shock and vibration. The MRSE Series also features a three position shock absorber that holds the top of the lamp and a stabilizing lamp glove at its base to provide further isolation from shock and vibration. The result is a significantly longer lamp life that greatly reduces the costs associated with maintenance and lamp replacement. 14 of the MRSE's were installed on the dragline boom to illuminate the work area beneath and provide peripheral lighting. Installed in one of the fixtures was a specially-colored lamp designed to emphasize the blue-green color of the matrix, the vein containing phosphate rock.

Mine personnel report significant improvements

Dragline operators now report that they are better able to identify the "matrix", the layer of material rich in phosphate. Mine personnel estimate that visibility has improved by "about 25% - at least." About the operators, the mine reports, "They can see what they're doing, so they do a better job." In addition, preventative maintenance personnel indicate that they are enjoying much better reliability. After months of operation, one mine official volunteers, "We haven't had the first problem with them and my PM (preventative maintenance) guy is really tickled with them."



MRSE Series

In an industry where every minute counts, it pays to have the most effective, longest lasting lighting fixtures to minimize downtime. The corrosion-resistant, water-tight MRSE Series is known throughout the mining industry for its reliable service, exceptional durability, and superior quality.

The MRSE Series also features:

- Marine-grade cast aluminum housing that provides excellent corrosion resistance
- 7/32" thick heavy-duty tempered glass that withstands thermal shock
- 1/4" thick steel reinforced mounting bracket that provides stable and durable support
- High temperature silicone and EPDM gaskets that provide a positive seal against dirt and moisture

About Phoenix Products

Headquartered in Milwaukee, Wisconsin, Phoenix Products Company, Inc. is a leading manufacturer of exterior lighting products that can withstand harsh, high-shock and vibration environments, and extreme weather conditions for the architectural, industrial, mining, loading dock, and marine industries.

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Durability by Design

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