



Lighting Design Lab

Alternative Roadway Lights

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Alternative Roadway Lights

Background- In the past few years the number of inquiries to the Lab about LED lighting has grown exponentially. Quite a few of them are about LED roadway lighting.

In an effort to determine how some of these products perform; on their own, and compared to existing products that they might be replacing, the Lab set up a test.

As a baseline comparison, we installed a 100 watt high pressure sodium (HPS) “cobra head” style street light (Type II), in our mock-up facility and took foot candle measurements at 2 foot intervals on the floor.

We were able to measure to 2 mounting heights to the side and over one mounting height forward (we did not measure behind the fixture).

The actual foot candle values are not important, it is just the relative quantity and distribution patterns that are of interest.

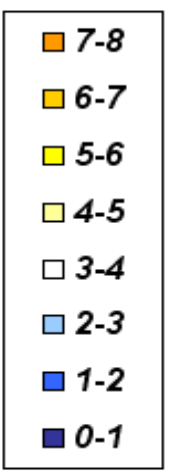
Following are the results of our testing on the various products.

Note that most of the alternative products are a nominal 70 watt lamping (+/- 10)

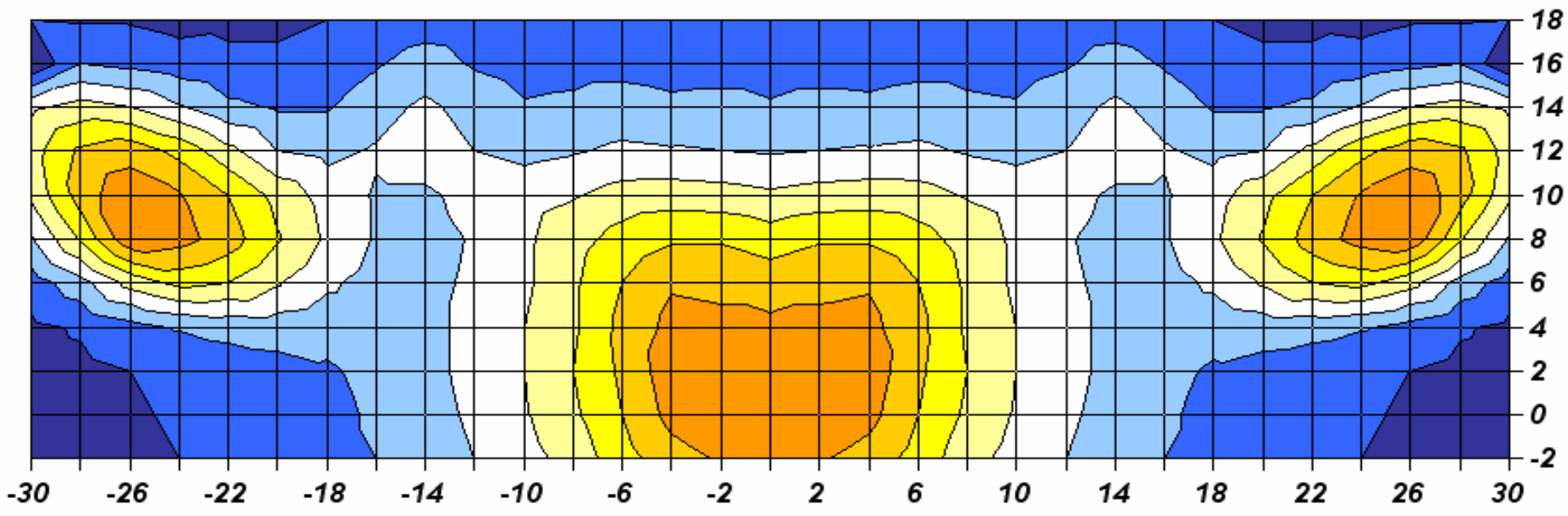


High Pressure Sodium @ 15ft

System Watts: 133



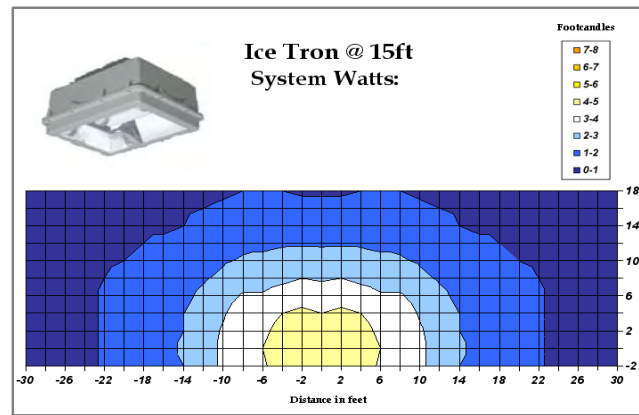
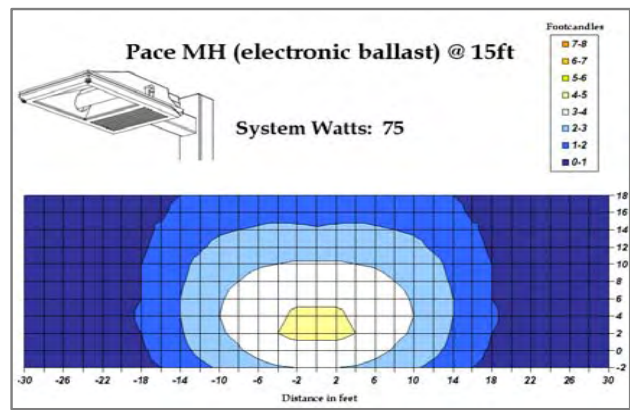
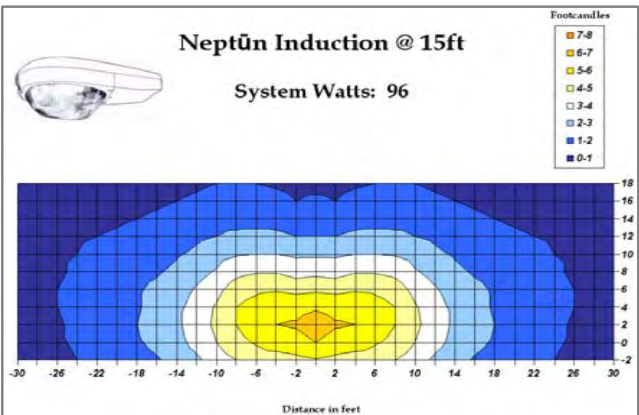
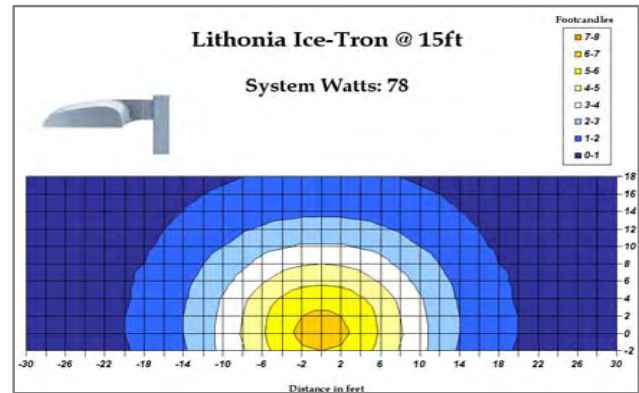
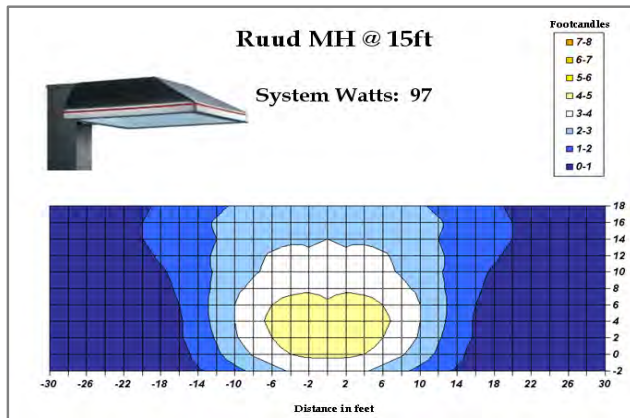
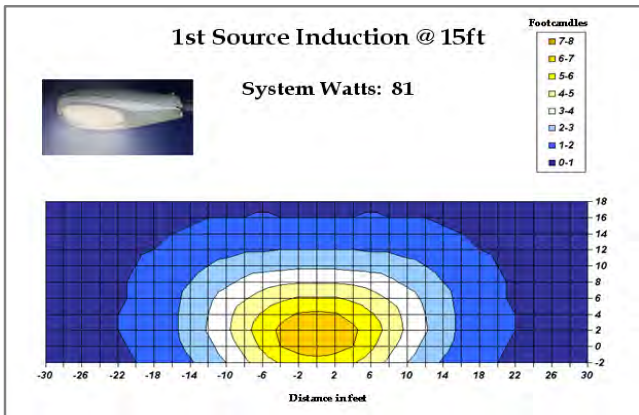
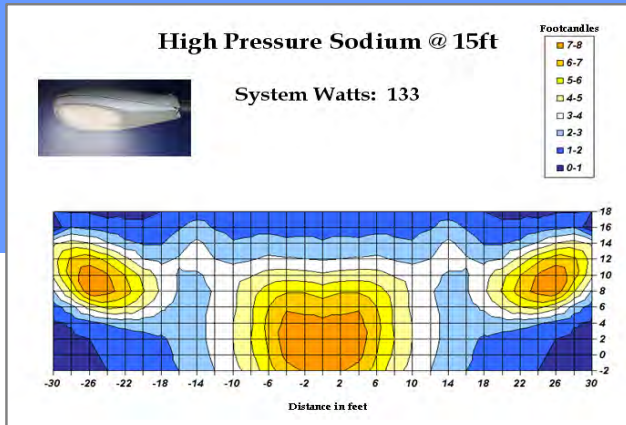
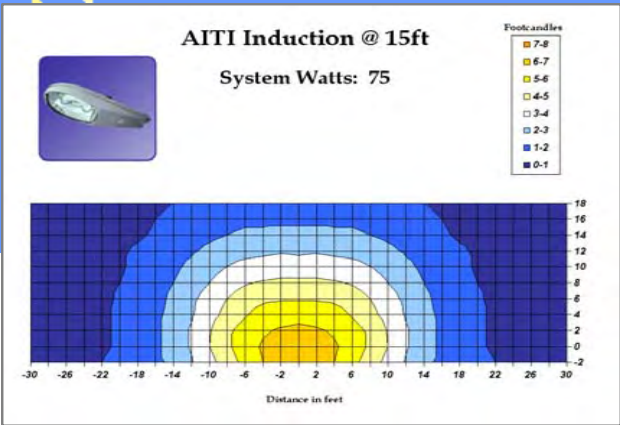
Footcandles



Distance in feet

Data are to indicate trends only and not rigorous scientific testing

Induction, Metal halide, and High pressure sodium.

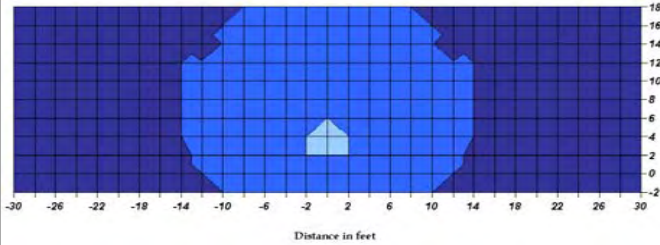
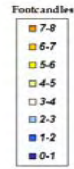


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LED fixtures

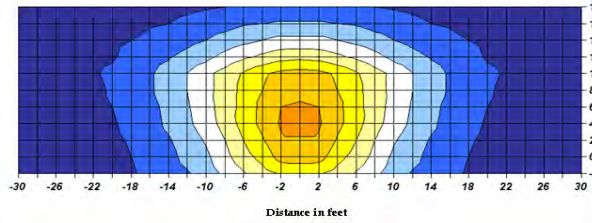
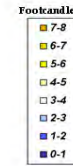
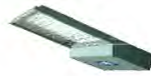
(new) Leotek @ 15ft

System Watts: 59



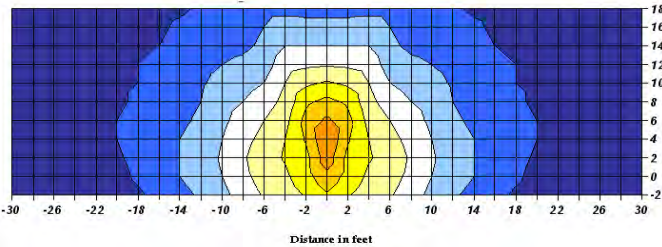
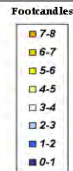
Leotek LED @ 15ft

System Watts: 62



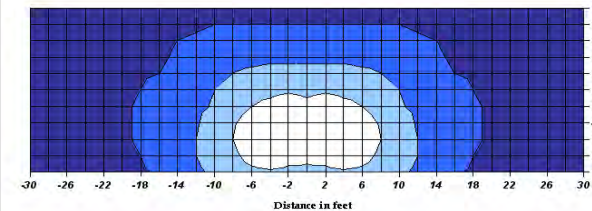
Relume R4800 @ 15ft

System Watts: 73



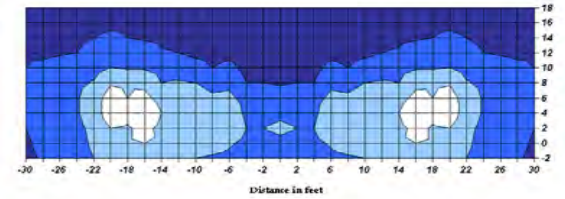
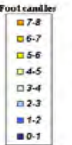
Relume R20 LED @ 15ft

System Watts: 69



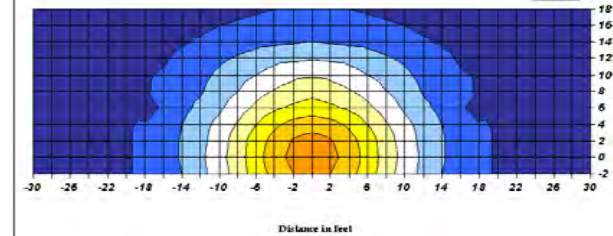
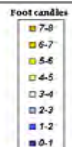
IntenCity LED @ 15ft

System Watts: 69



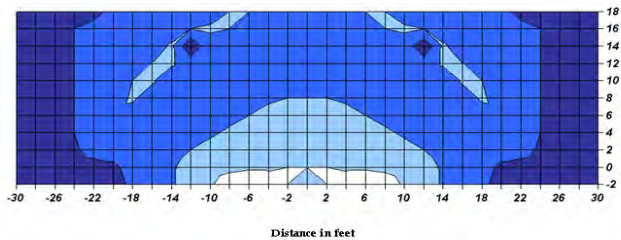
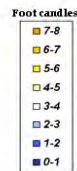
SOL LED @ 15ft

System Watts: 73



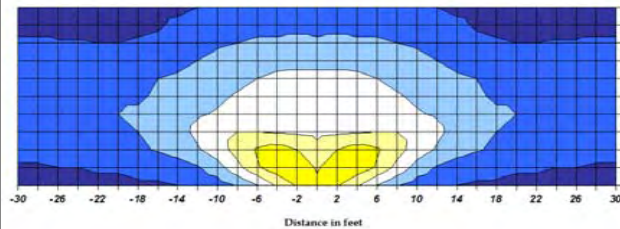
Beta LED @ 15ft

System Watts: 75



Beta- LEDway LED @ 15ft

System Watts: 76

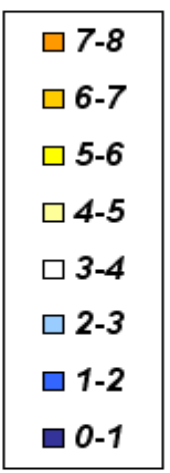


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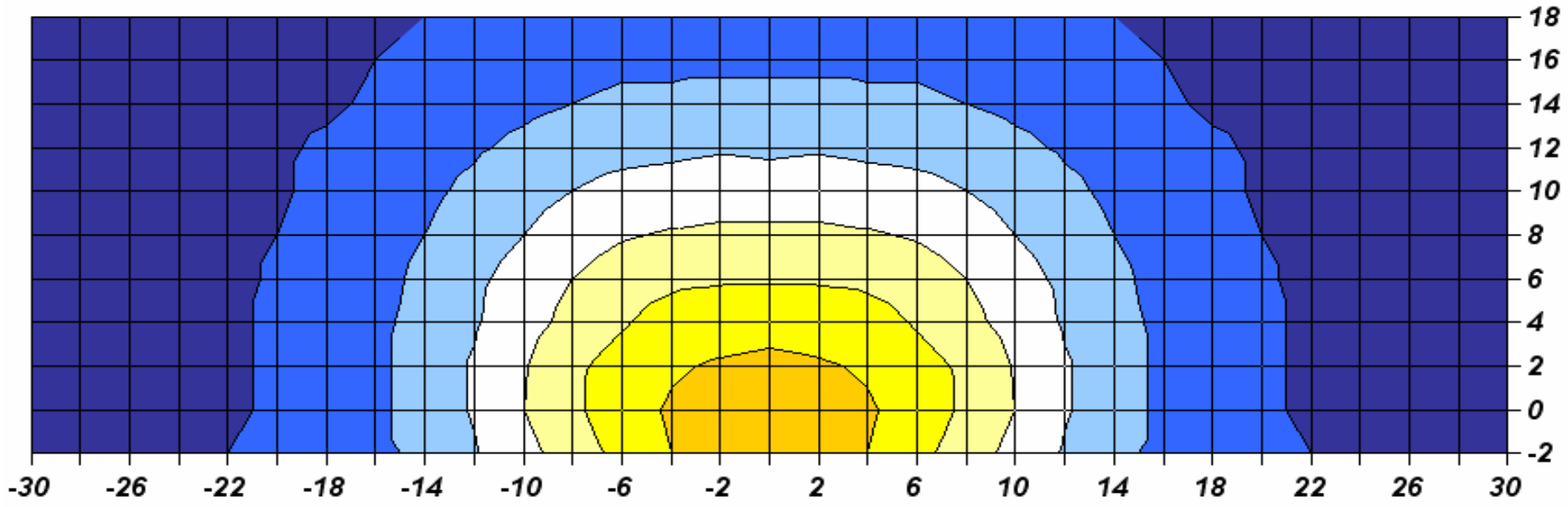


AITI Induction @ 15ft

System Watts: 75



Footcandles



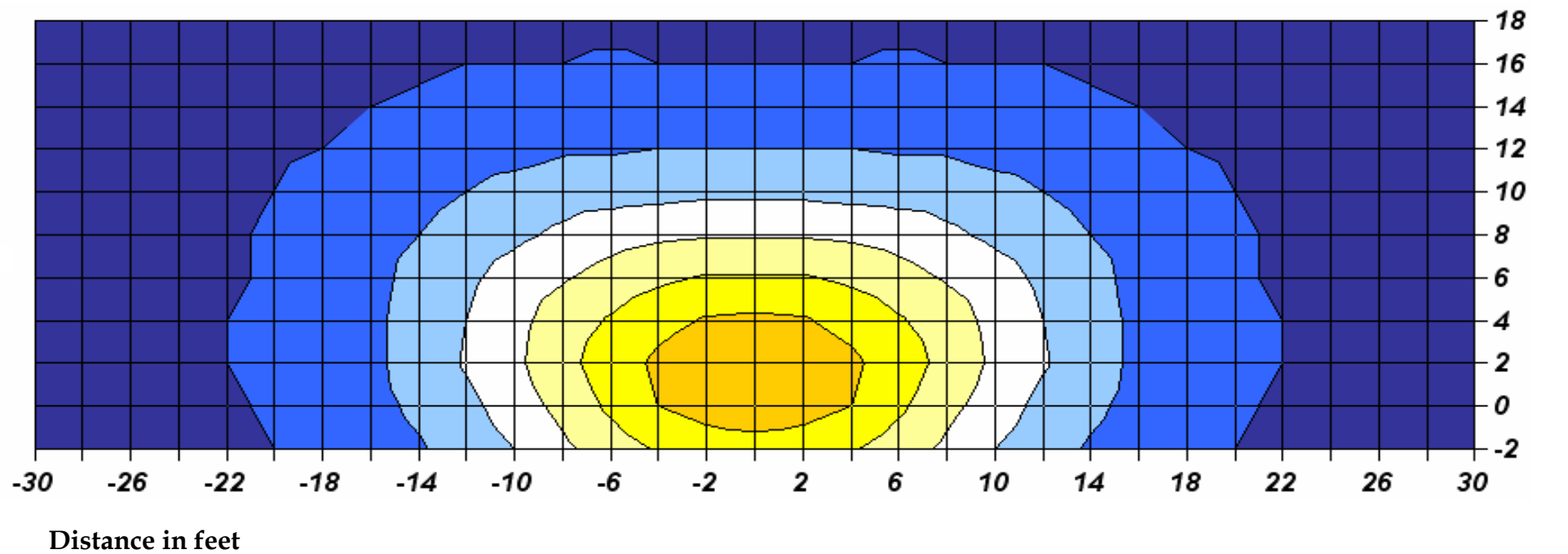
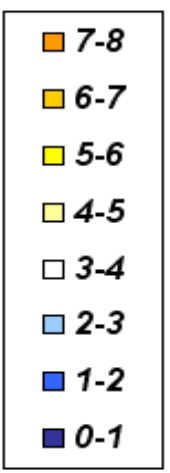
Distance in feet

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1st Source Induction @ 15ft

System Watts: 81

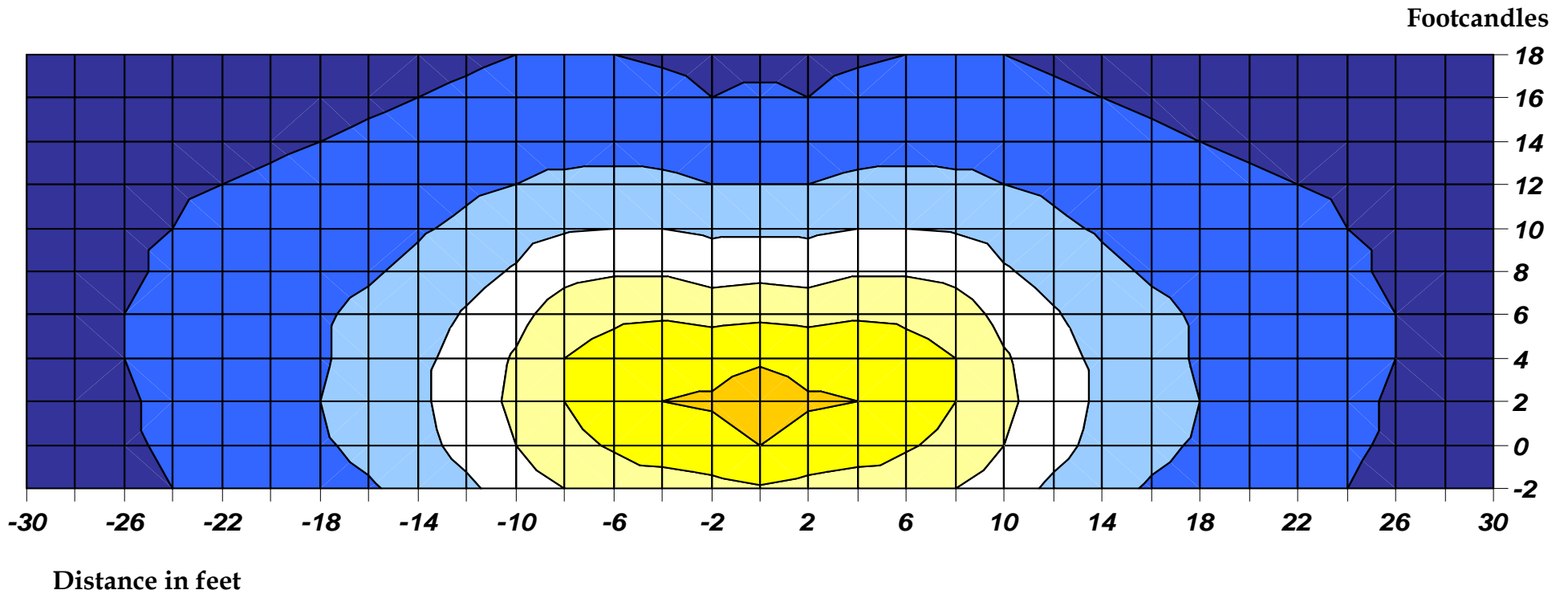
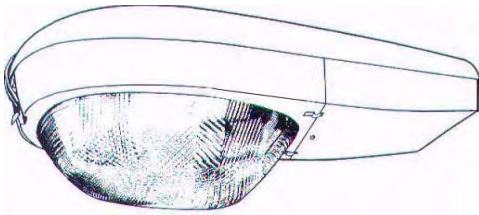
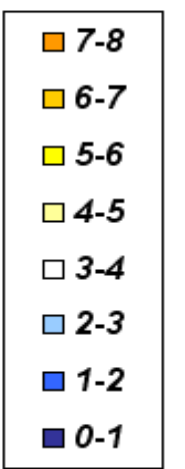


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Neptūn Induction @ 15ft

System Watts: 96

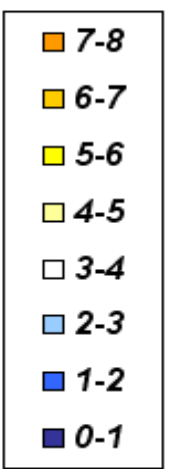


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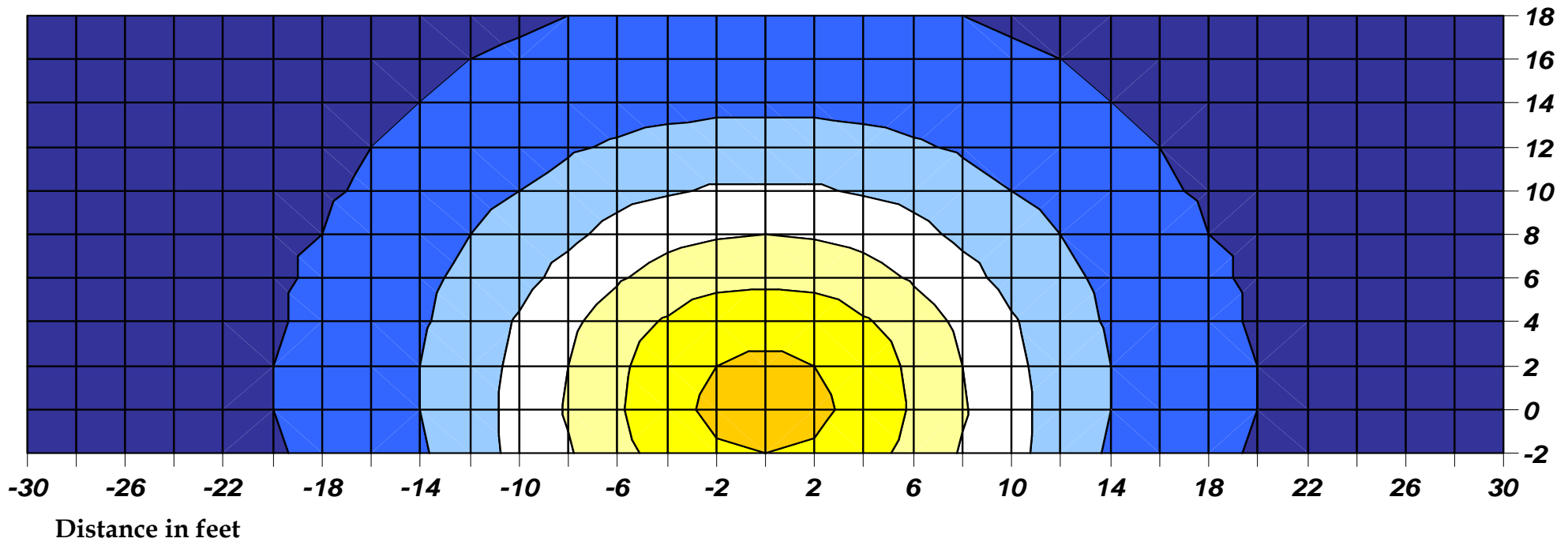


Lithonia Icetron @ 15ft

System Watts: 78



Footcandles

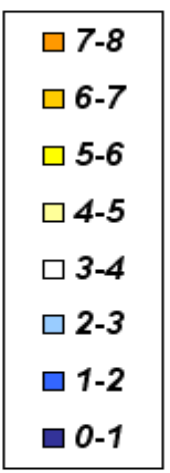


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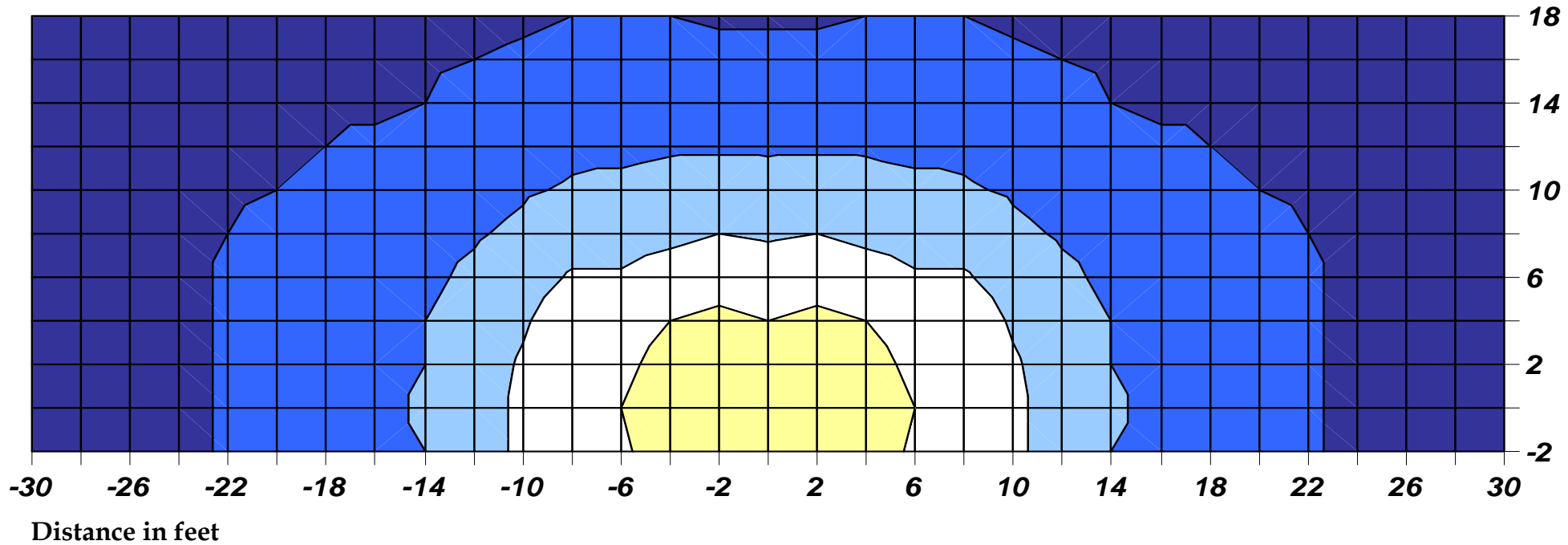


Harris Icetron @ 15ft

System Watts: 73



Footcandles

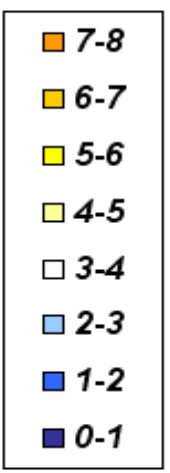


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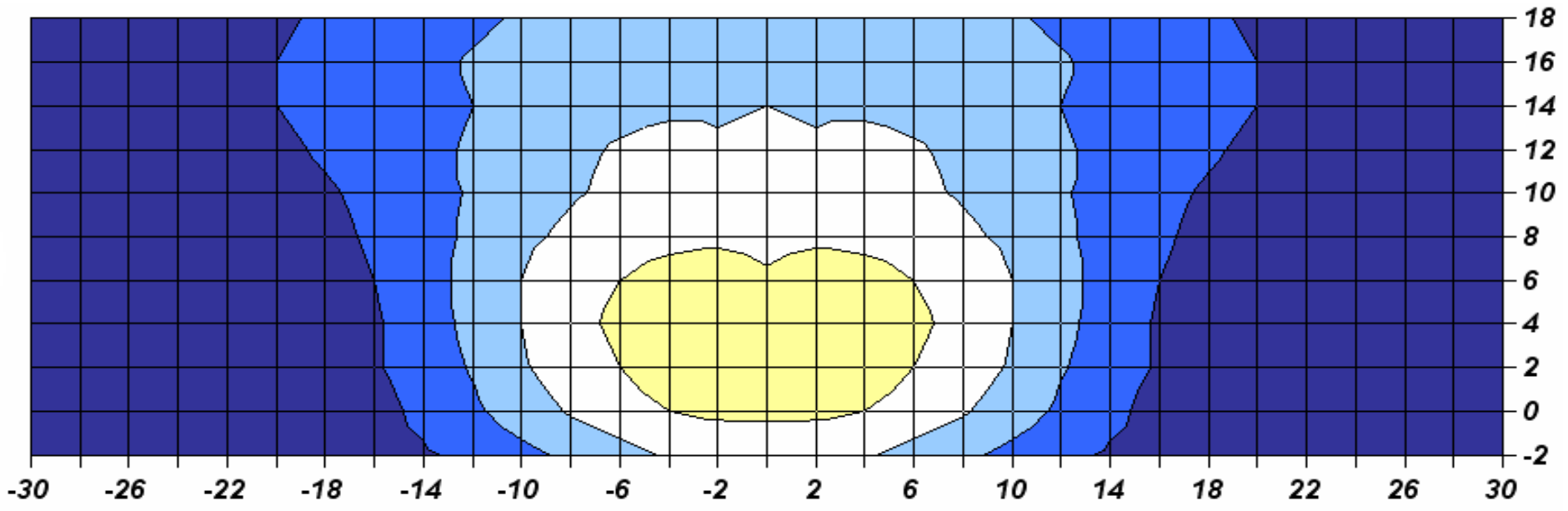


Ruud MH @ 15ft

System Watts: 97



Footcandles



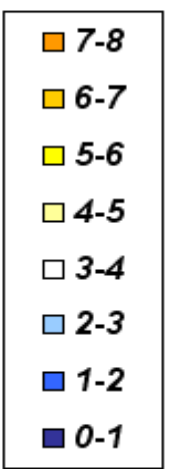
Distance in feet

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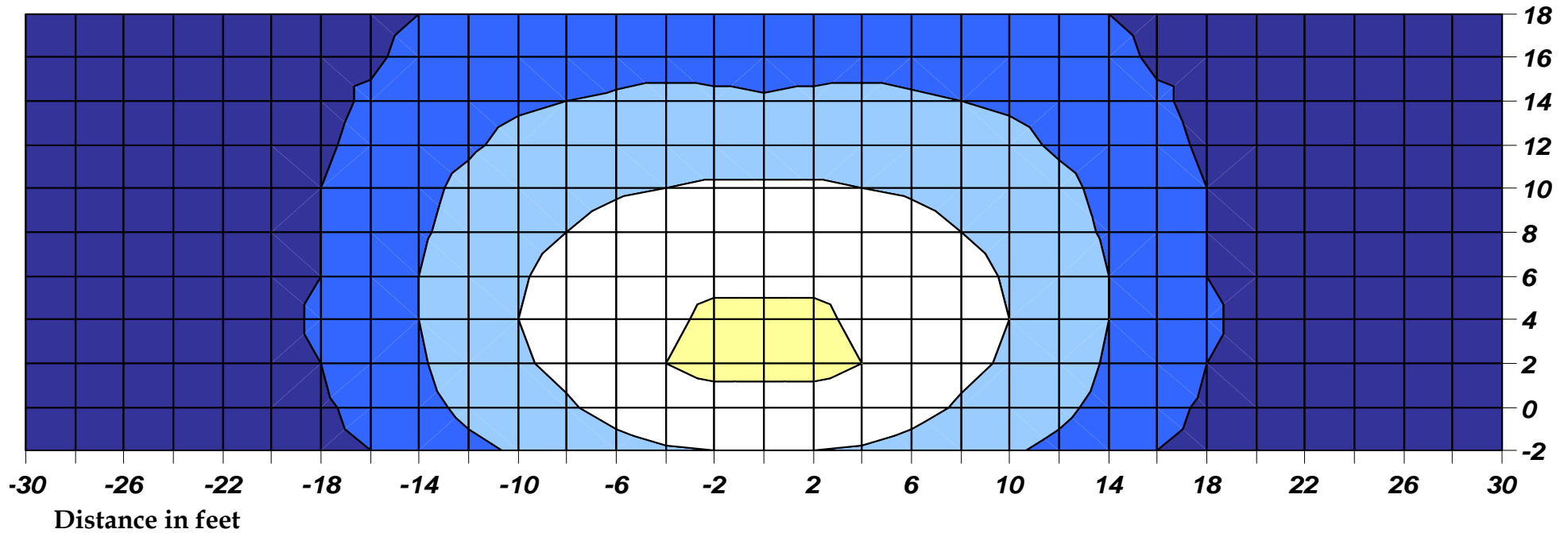
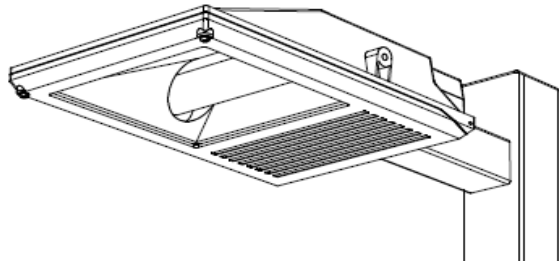


Pace MH (electronic ballast) @ 15ft

System Watts: 75



Footcandles

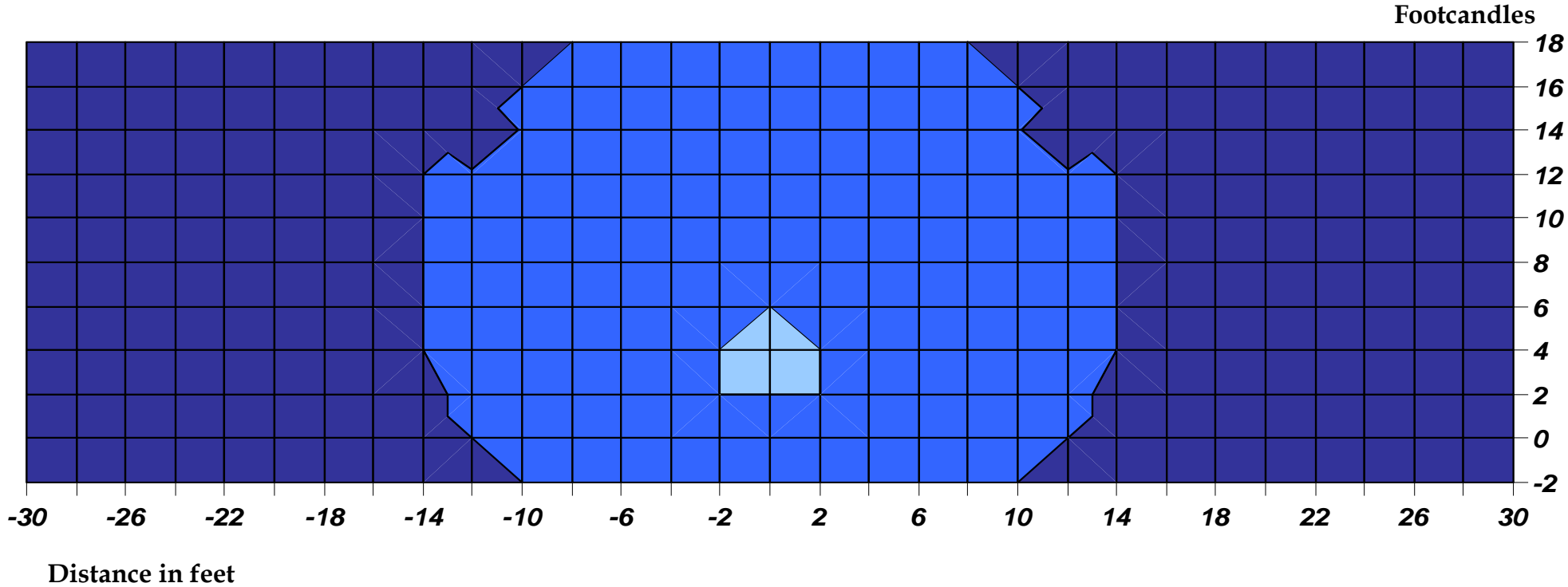
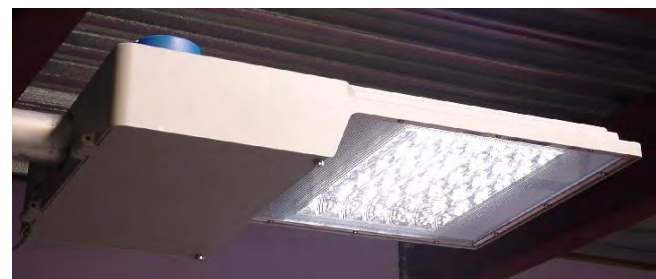
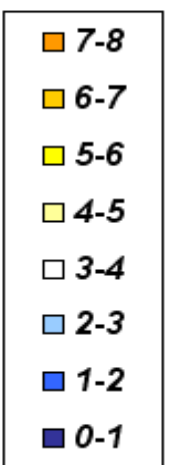


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(new) Leotek @ 15 ft

System Watts: 59

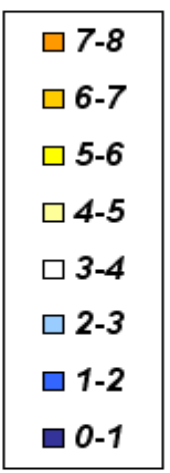


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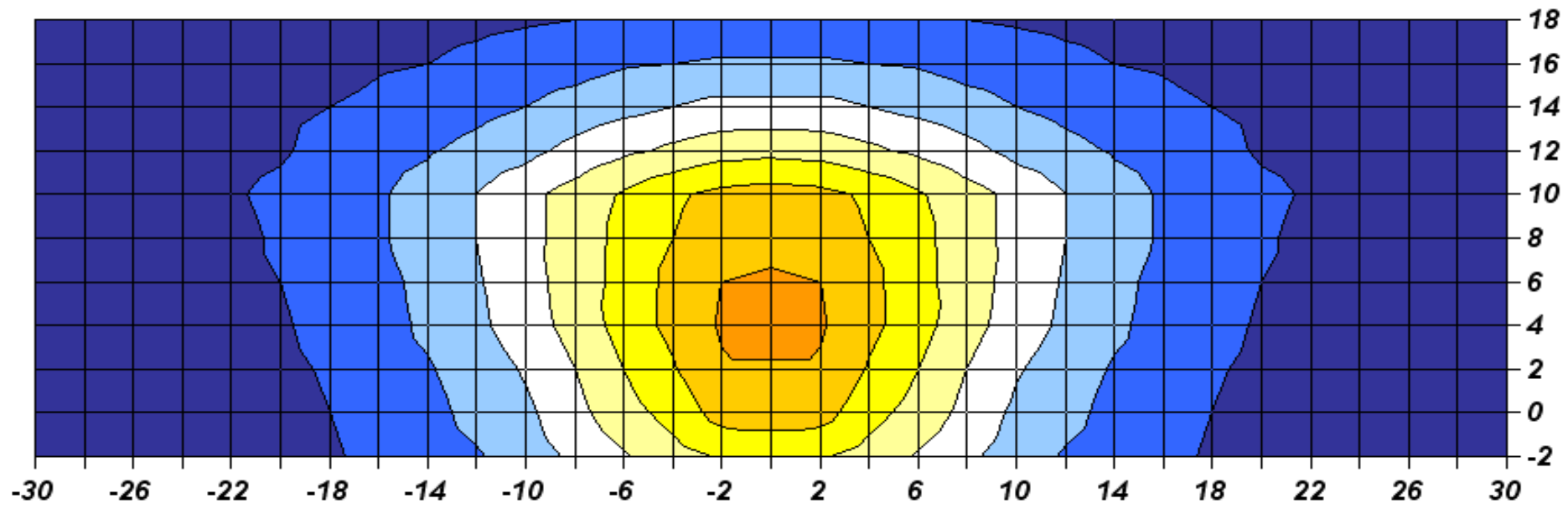


(old) Leotek LED @ 15ft

System Watts: 62



Footcandles



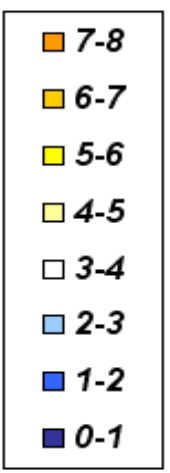
Distance in feet

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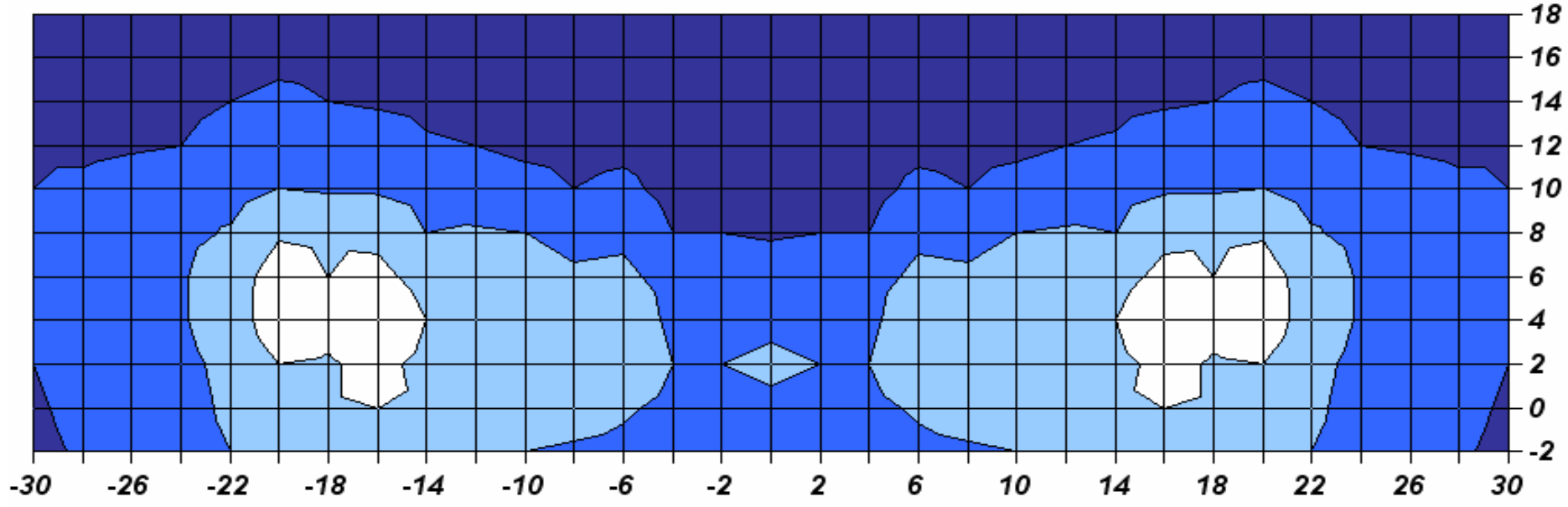


IntenCity LED @ 15ft

System Watts: 69



Footcandles



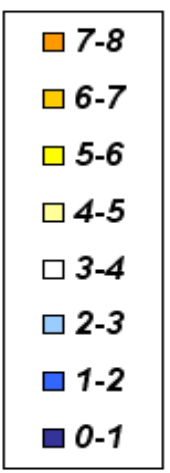
Distance in feet

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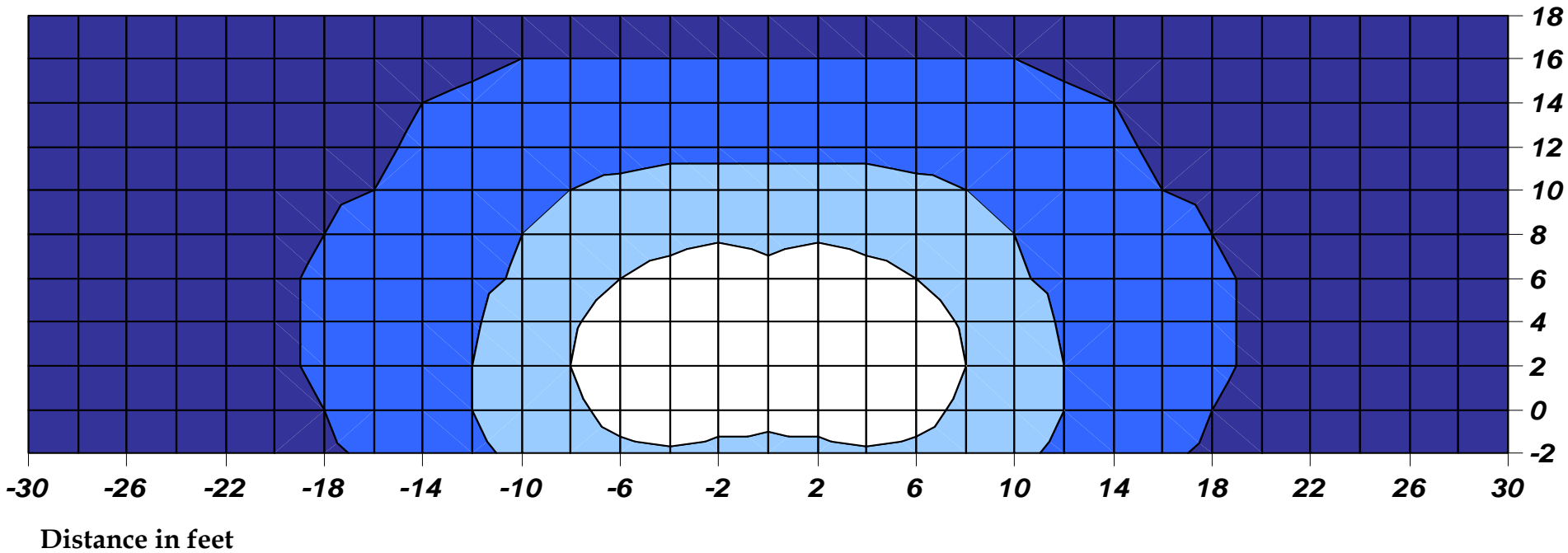


(old) Relume R20 LED @ 15ft

System Watts: 69



Footcandles

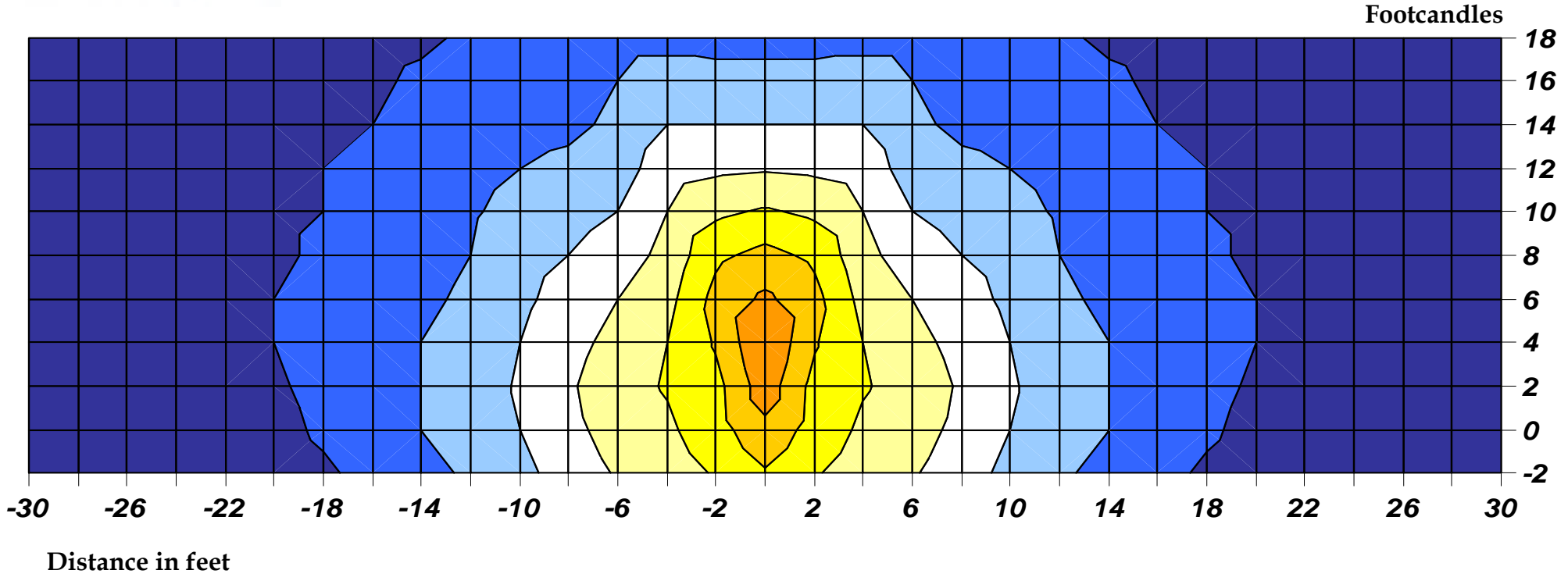
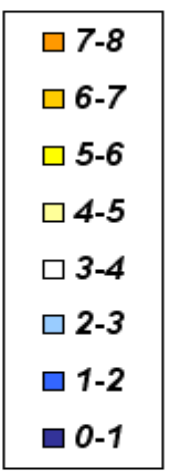


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(new) Relume R4800 @ 15ft

System Watts: 73

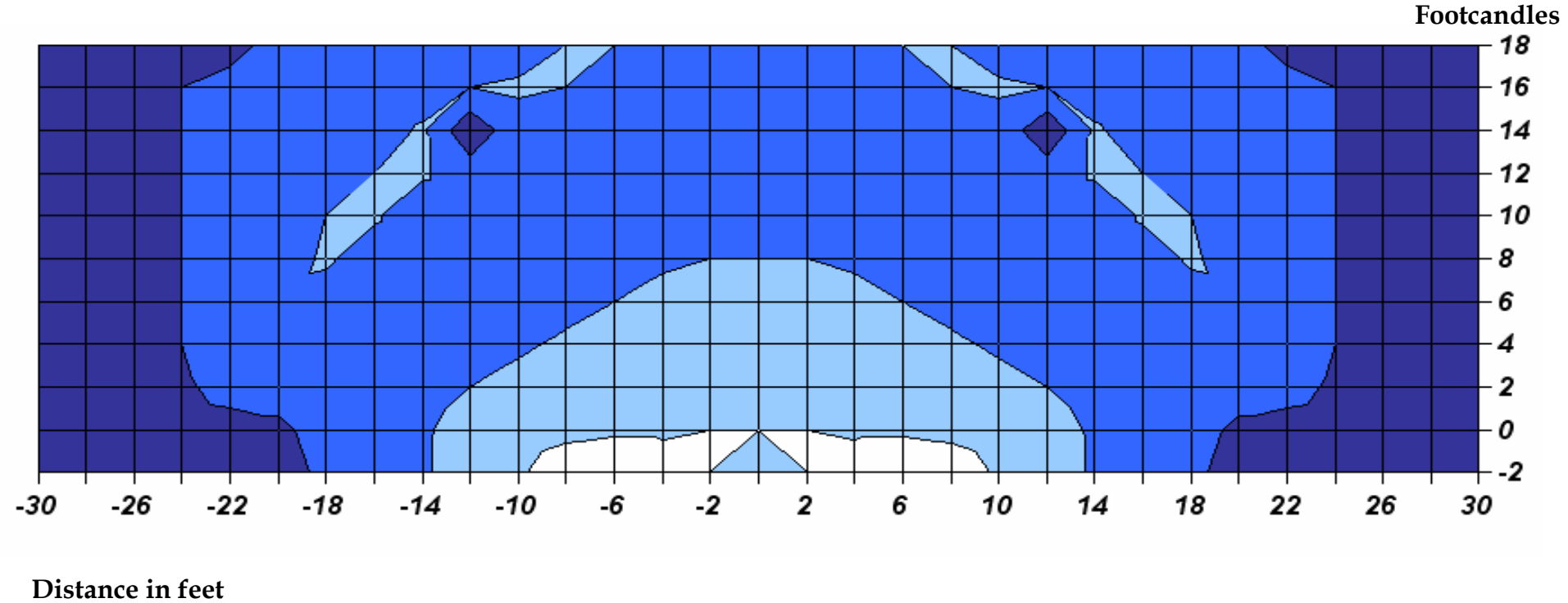
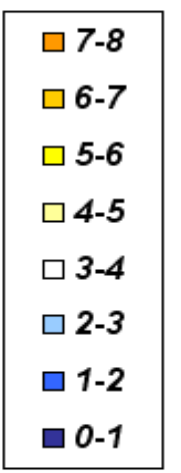


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Beta- Edge LED @ 15ft

System Watts: 75

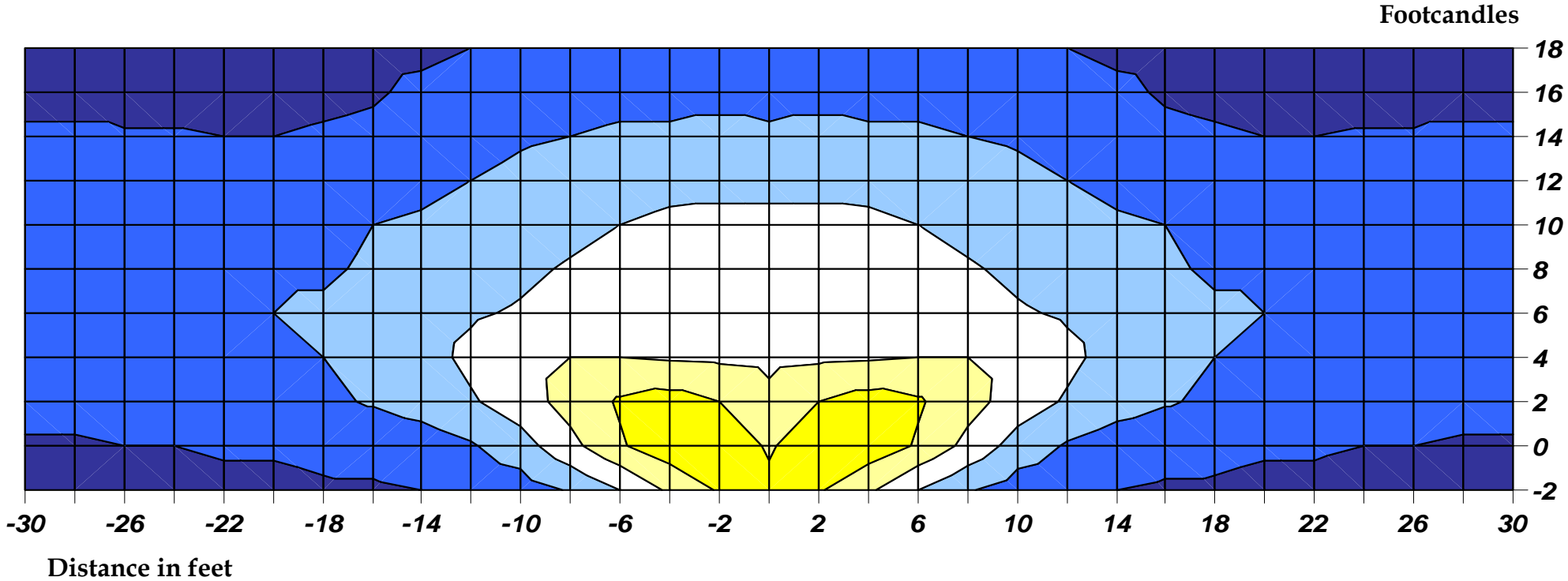
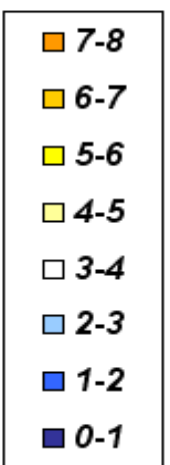


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Beta- LEDway LED @ 15ft

System Watts: 76

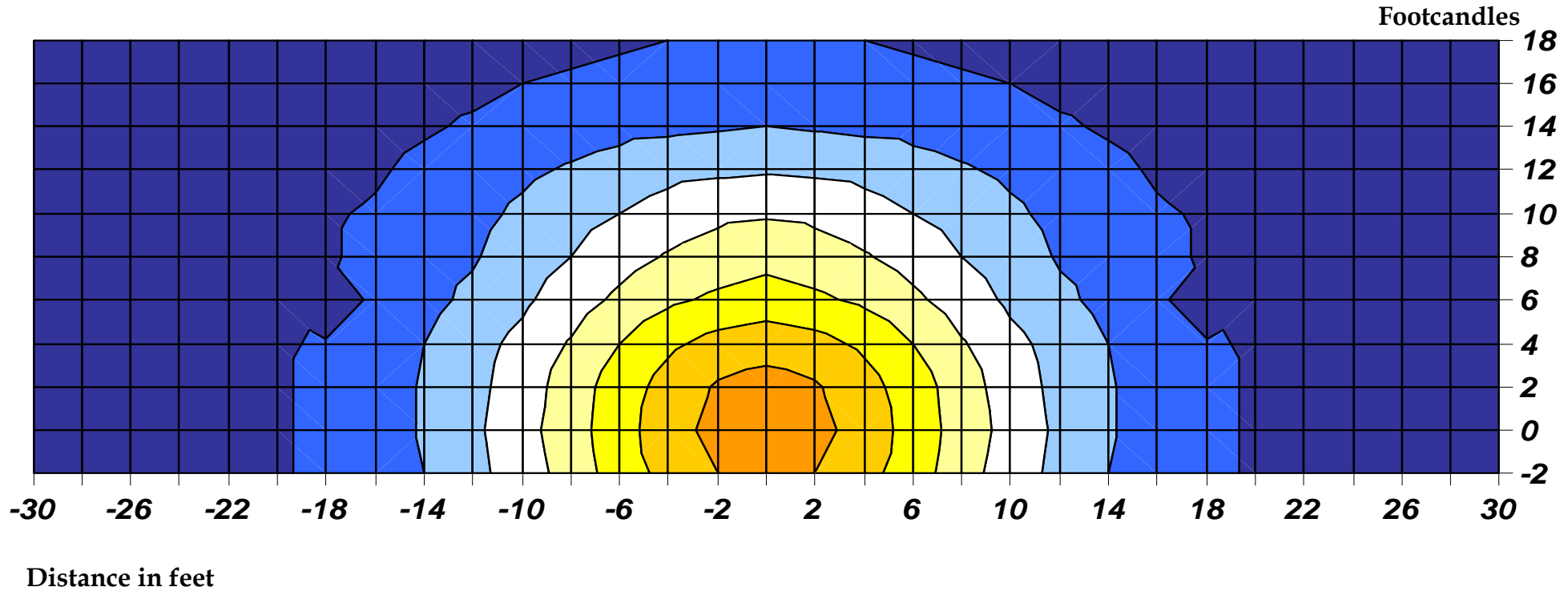
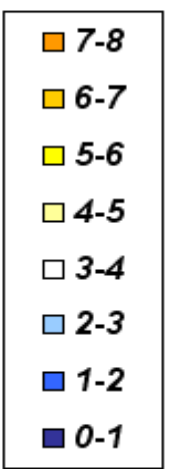


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SOL LED @ 15ft

System Watts: 73



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Other issues to consider;

If you are saving energy, are you getting comparable lighting performance?

At 30% lumen depreciation, are current light levels adequate.

With the cost of the fixtures, will energy savings alone save \$?

At 50,000 hours, what is the maintenance savings over a 24,000 hr system? (this is not a trick question)

Is complete fixture replacement at end of life part of the life cycle cost analysis?

If blue/white light is desirable (scotopic), can metal halide or induction sources deliver this as well?



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New Location!

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