What is the deal with DC Microgrids?

and why would a Lighting company care?

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- Why DC Microgrids?
- Why Now?
- How?
- What else?

Why DC Microgrids?

Why DC Microgrids?

- Real Question - Why centralized power?
  - Nothing new
    - Master – Satellite
  - More Efficient
  - Lower Install Cost

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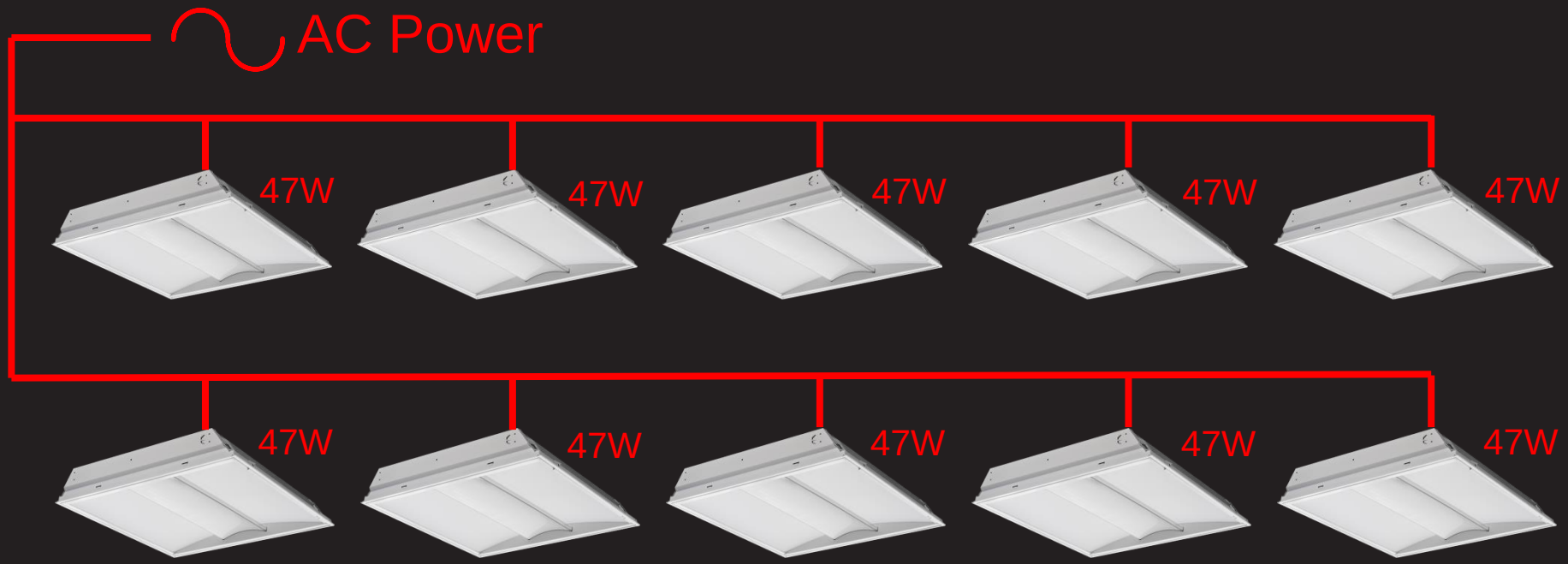

40W AC-DC Driver @ 85% Efficiency = 47W Luminaire
10 Luminaires = 470W System

Why DC Microgrids?

- Real Question - Why centralized power?
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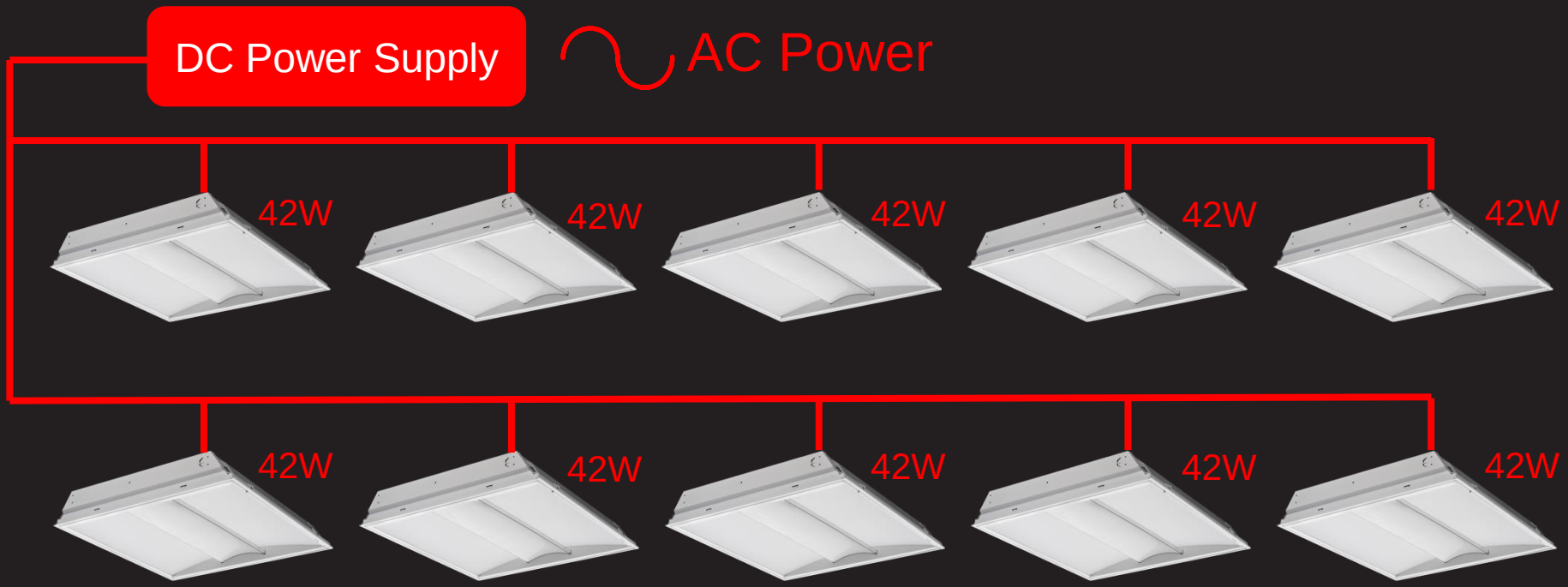


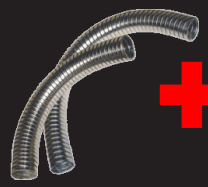
40W DC-DC Driver @ 95% Efficiency = 42W Luminaire
10 Luminaires = 420W Load
420W AC-DC Driver @ 96% Efficiency = 437W System

7% Less

Why DC Microgrids?

- Real Question - Why centralized power?
  - Nothing new
    - Master – Satellite
  - More Efficient - >7%
  - Lower Install Cost

Why DC Microgrids?

- Installation Cost – AC System
  - Material  +  +  +  **= $800**
  - Labor Wiring: 2 Electricians x 3 Hrs
Luminaire: 10 x 15 mins } @$100/hr **= $850**


15 mins

15 mins

15 mins

15 mins

15 mins


15 mins

15 mins

15 mins

15 mins

15 mins

Total Installation Cost = $1650

Why DC Microgrids?

- Installation Cost – DC System
  - Material  +  +  = **$55**
  - Labor
    - Wiring: 1 Electrician x 45 mins @ $100/hr = **$75**
    - Luminaire: 1 Technician x 100 mins @ $20/Hr = **$35**


10 mins

10 mins

10 mins

10 mins

10 mins


10 mins

10 mins

10 mins

10 mins

10 mins

Total Installation Cost = $165

Why DC Microgrids?

- Real Question - Why centralized power?
  - Nothing new
    - Master – Satellite
  - More Efficient - >7% Less
  - Lower Install Cost – 90% Less (excludes lighting equipment)

AC System Installation Cost = $1650

DC System Installation Cost = $165

Why Now?

Why Now?

- What's changed?
  - Lower Power Luminaires
  - Legislation
  - Net Zero Initiatives
  - Improved Alternative Energy Sources
    - Cost
    - Efficiency
    - DC Power Direct to the Luminaire
      - No DC to AC Grid Conversion Losses
      - No DC to Battery Storage Losses
      - No Battery DC to AC Power Losses

How?

How?

- How special are these luminaires?
  - That's the beautiful part.....not very
  - Exchange AC-DC Driver for DC-DC Driver or no Driver
  - Add a harness…..sometimes
  - Some Issues
    - Limited DC input with long Lead-times

What else?

What else?

What about controls?

- They are available
- Many control systems already use 24v power

What about certifications and incentives?

- UL & CSA will certify
- Energy Star & DLC are written around AC
- Incentives are difficult to get

Got a space that is regularly reconfigured?

- This is a perfect solution

Summary

Summary

- Centralized Power systems are coming
- They make both financial and environmental sense
- Net Zero Initiatives will expedite that

Thank You

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