Tunable White: A Specifier's Wish list

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Tunable White

- Why I specify tunable white lighting
- How I specify tunable white lighting
- Wish list

Why I specify Tunable White Lighting

- Driven by the client
  - Owner
  - Architect
  - Project certification
    - LEED
    - WELL
  - Interesting

Why I specify Tunable White Lighting

- Driven by me
  - Mood
  - Materials
  - Studies
  - Interesting

How I specify Tunable White Lighting

- Still start with my typical lighting design approach
  - Goals
  - Design approaches
    - Palette of design concepts
    - Palette of fixture options
  - Calculations/layouts
  - LPD Check
  - Controls coordination

But that’s where the problem lies…

Fixture Palette Limitations

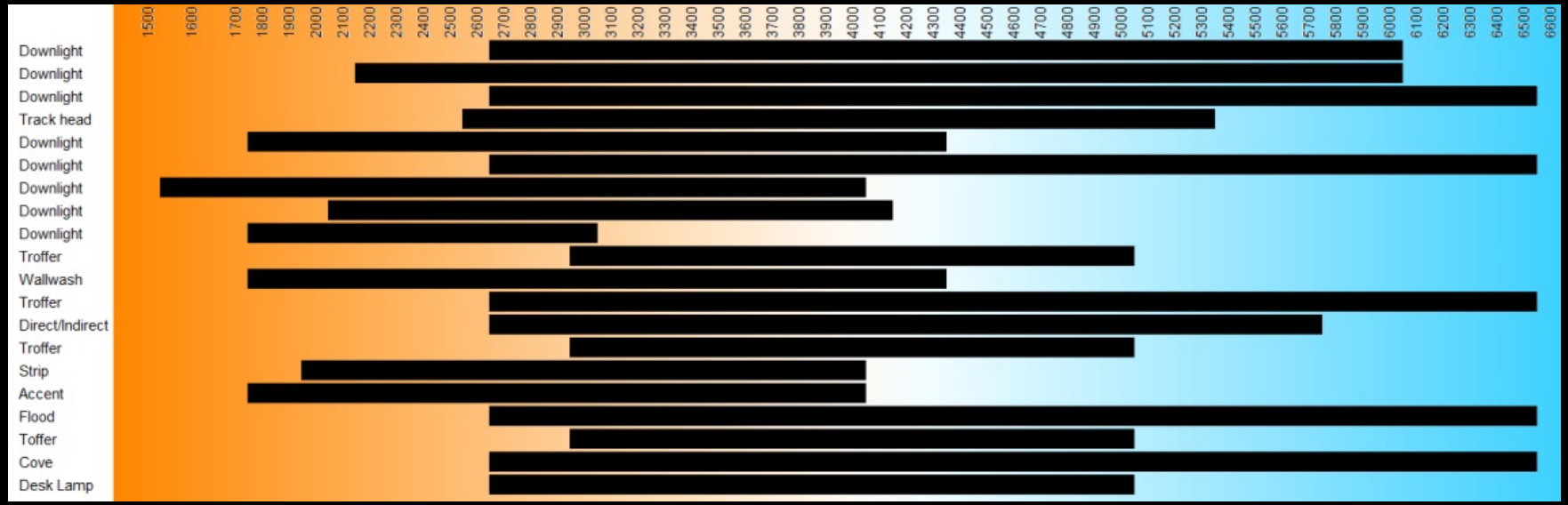
- Types of fixtures available with tunable white are limited
- IES files and photometric data for different configurations are limited

Energy Codes are Challenging

- Rated wattages can be high
- What gets labeled?

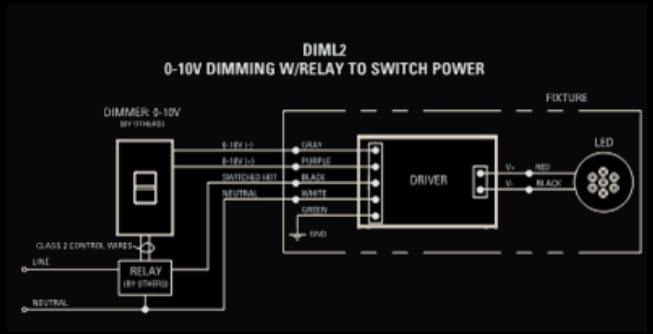
Color is a Challenge

- Multiple methods of tunable white
  - Linear mixing vs. blackbody
  - Different products/manufacturers with different ranges



Control Systems are Challenging

- Types of controls
  - Dual 0-10V? DMX?
  - Two channel mixing vs. CCT/dim control
- How and when to integrate manual controls
  - Who gets control?
  - Intensity only?



Integration is Challenging

- Electrical Engineers struggle with more sophisticated systems (e.g. DMX)
- Electrical Contractors are inexperienced with more sophisticated systems (e.g. DMX)
- Client/Contractor don’t understand the need for a commissioning agent, integrator, and programmer
- Can’t use DMX for emergency lighting circuits

Cost is a Challenge

- Fixtures cost more
- Control system costs more
- EE's time to design controls costs more
- EC upcharges for install when they're inexperienced with the technology
- Additional personnel required (commissioning agent, integrator, programmer)
- More of my time for programming
- Follow-up services from programmer/designer/? to adjust system in future

So what do I want to see…

Help the Designer

- Fixture families
- Consistent CCT ranges
  - SPD at mixed colors
- Consistent control algorithms
- Good application images/videos

Help the Programmer

- CCT mixed signal scales
  - What does a 4V signal mean?

Advance the Applications

- Research-based recommendations for dosing
- Automated algorithms for color shift
- Built-in “daylight” algorithm
  - Spectral photo sensor
  - Retrofit

Thank You

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