Thomas Research Products

Current Tuning Controller (CTC)

Rev 4-5-2018

Intelligent Device ECOSYSTEM

Electrical Specifications

Max Operating Power:	100W (Power = input voltage x driver output current)
Input Voltage Range:	15 to 56 VDC **Note:** Connect only one driver output channel per CTC, minimum output must also be within this range
Max Input Current:	2.5A, not to exceed max operating power
Operating Current:	15mA of input current is used to power internal control circuits, in addition to LED Array current **Note:** Not recommended for use with drivers which: have 1% dimming, dim below 15mA, or dim-to-off capability unless the minimum current allowed or programmed meets the following equation: (Minimum dimming %) > (15mA / max current)
Output Frequency:	32kHz
Loading Specifications:	LED Array 1 and 2 must have the same forward voltage and current characteristics and the same number of LEDs in series and parallel. The array voltage must be within the CTC Input Voltage Range.

Dimming Characteristics

Parallel Dimming Control Capability:	Multiple drivers and CTCs may be connected in parallel to a sinking type dimmer as long as the total current sourced does not exceed the dimmer's maximum capacity
Max Dimming Source Current:	1mA
Dimmer Compatible With:	Use with sink-style dimmers. Some low/high end trim adjustment may be required. Compatible with: 1. HCS NX system 2. Lutron NTFTV, NFTV, DVTV, DVSTV 3. Wattstopper ADF120/277
Dimmer Not Compatible With:	1. Pass & Seymour PS 010 120V 2. Lutron NTSTV 3. Leviton IP710, AWSMT-7, AWRMG-7 3. Wattstopper CD4FB 4. Lightolier V2000FAMU 5. Synergy ISDBC 120/277
Max Dimming Voltage:	12 VDC
Protection at Dimming Output:	Isolated digital transformer
Functional Dimming Input Range:	Dimmer voltage >8.5Vdc forces 100% input current to output LED Channel 1 Dimmer voltage <1.5Vdc forces 100% input current to output LED Channel 2

Environmental Specifications

Operating Temperature: (Measured at Tc Point)	-20°C – +50°C
Storage Temperature:	-40°C – +90°C
Humidity:	5% – 95%

Mechanical Specifications

Length:	4.16" (105.66mm)
Width:	1.392" (35.36mm)
Height:	0.947" (24.07mm)
Mounting:	Inside fixture (with tape) or ½" knockout (with Mounting Adapter)
Wire Connections:	Push in type, accepts 14-20AWG solid/stranded wire
Lifetime:	Calculated Lifetime > 50,000 Hours @ rated ambient (Contains no electrolytic capacitors)
Weight:	1.6 oz (45.4g)

Part	Model	Description
93060818	CTC	Current Tuning Controller
93066006-01	CTC-M	Mounting Adapter

Class 2: US/Canada

Safety Cert.	Standard
UL/CSA:	CSA C22.2 No. 250.13-14 & UL 8750
Hazardous Substance:	RoHS Compliant

Applications

- White Light Mixing (*Color tuning*)
- Directional Mixing *(Up/Down ratio tuning)*
- Warm Dimming
- Circadian Rhythm Control *(requires scheduling-control dimmer)*

Overview

- Class 2 operation
- 15V minimum, 2.5A max
- Two LED Array outputs
- Push-in connectors
- Mount inside fixture or on a J-box
- 0-10V dimming with isolated inputs
- UL recognized component

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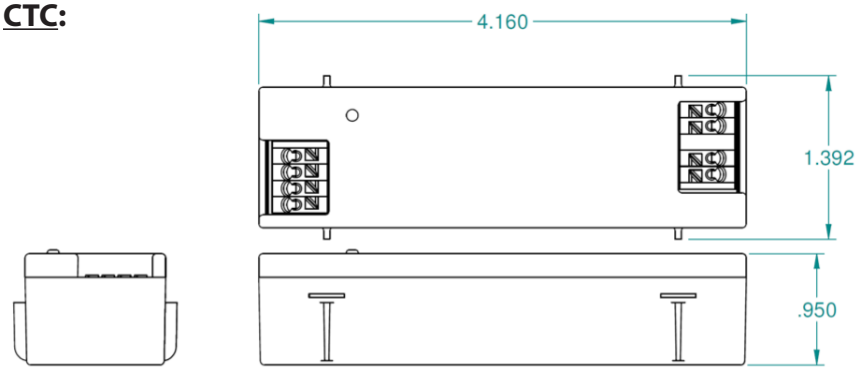
Current Tuning Controller (CTC)

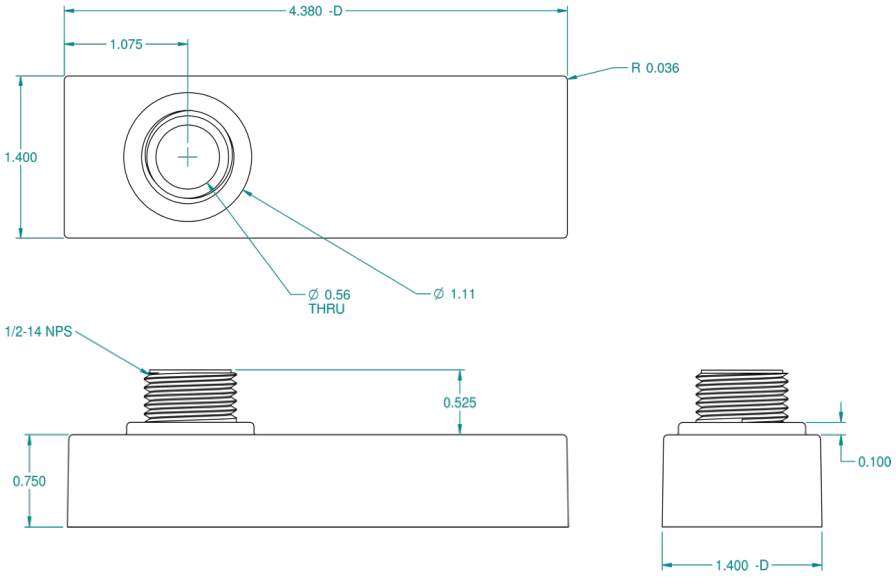
Dimensions

CTC:

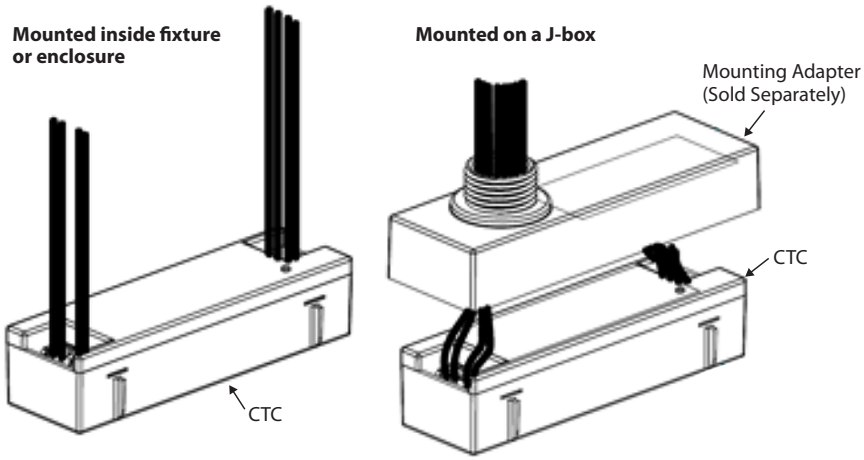


Note: The CTC needs to be appropriately secured in the luminaire per end user requirements.

CTC-M:



Mounting



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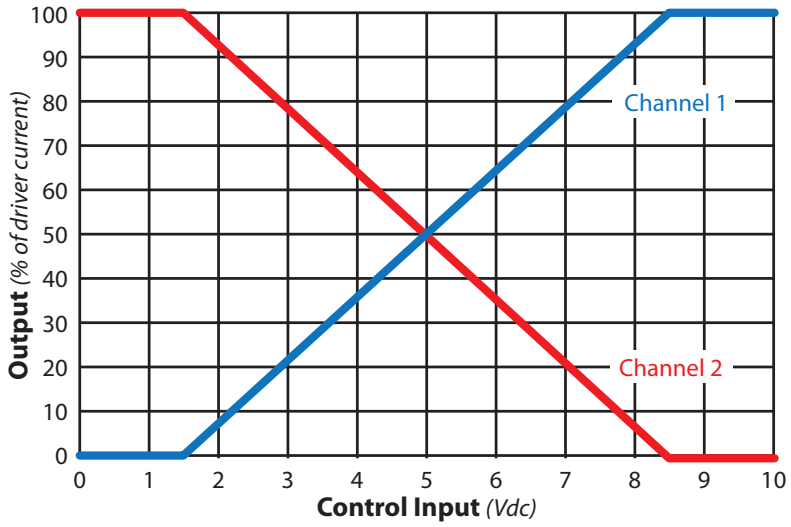
Tuning Characteristics:

Current Tuning Profile



LED Array Status, based on 0-10V input voltage

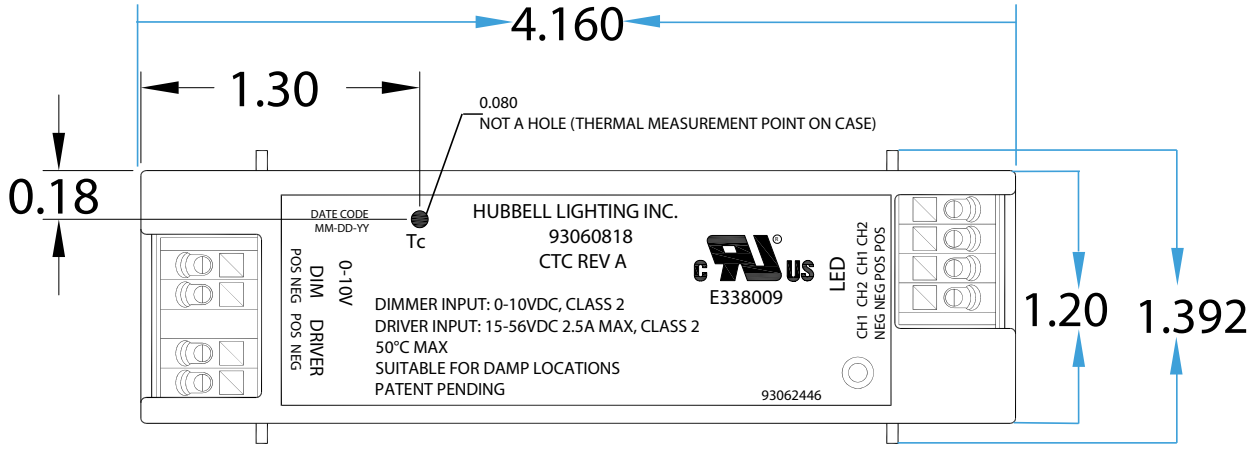
0-10V Dim Control	LED Ch1 Output	LED Ch2 Output
High (~8.5V)	High (~100% output)	Low (~0% output)
Low (~1.5V)	Low (~0% output)	High (~100% output)

*** For tunable white application use highest CCT on Ch1. See wiring diagram 1.**
*** For dim to warm application use highest CCT on Ch1. See wiring diagram 2.**

Minimum undimmed current for driver dimming compatibility	
Dim to Off	Not Recommended
1%	1500mA
5%	300mA
10%	150mA
Other	(Minimum dimming %) > (15mA / max current)

Note: The CTC needs to be appropriately secured in the luminaire per end user requirements.

Tc Point Location:



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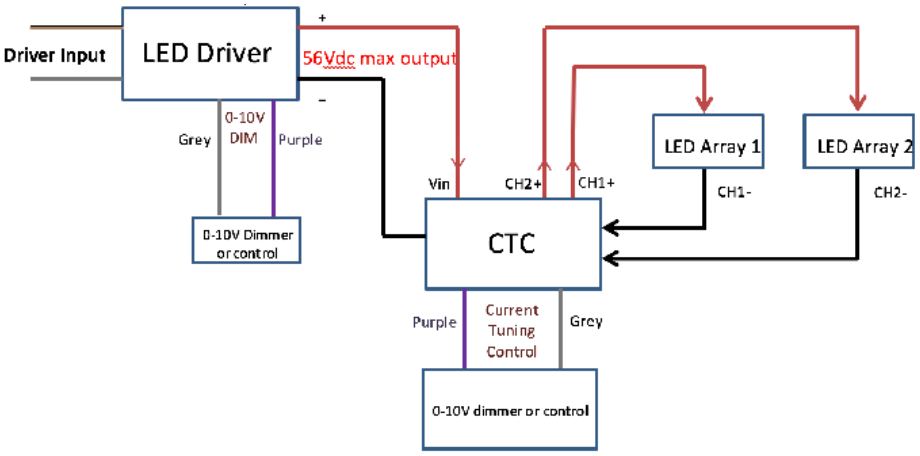
Wiring

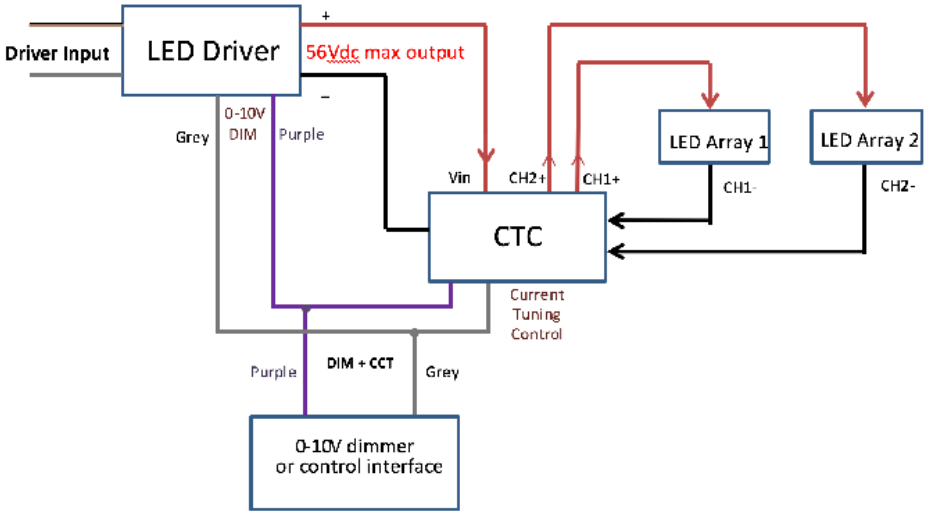
Controlling CTC and LED driver independently:

- 1st Wall Dimmer connects to Driver and controls brightness (intensity).
- 2nd Wall Dimmer connects to CTC and controls color balance.



Using one common dimmer for CTC and LED Driver together:

- Use a single Wall Dimmer connected to both Driver and CTC to create a Warm Dimming fixture



Connector Descriptions: