

# MULTI-CHANNEL LED MODULES



## Features

- > BOLD modules are specially designed to enable smooth CCT adjustments when paired with APT controllers
- > Arkalumen's intertwined pixel designs for dual white, RGBW, and RGBWW encourage full mixing of light prior to optics
- > Dual white modules available at 1200 lm/ft and 2000 lm/ft per channel with selectable CCT (2000-6500K) and CRI
- > WWS modules available in 22", 44" modules, cuttable every 5.5" for selectable length
- > RGBW modules available in 22" and 44" modules, cuttable every 5.5" for selectable length
- > RGBWW modules paired with APT-CV5 controllers can be calibrated up to 98 CRI across a wide CCT range



Part Number	Dimensions [Inch]	LED Colors	Nominal Light Output [lm]	CCT Range [K]	Max Light Output [lm]
<b>WWS (Standard Output)</b>					
SC56DT-110008F-40V	11.0" x 0.787"	WW	1,200	2200 – 6500	2,495
QC112DT-220008F-40V	22.0" x 0.787"	WW	2,400	2200 – 6500	4,990
EC224DT-440008F-40V	44.0" x 0.787"	WW	4,800	2200 – 6500	9,980
<b>WWX (High Output)</b>					
SC32DG-113010S-24V	11.25" x 1.0"	WW	2,000	2000 – 6500	2,805
QC64DG-225010S-24V	22.5" x 1.0"	WW	4,000	2000 – 6500	5,610
EC128DG-450010S-24V	45.0" x 1.0"	WW	8,000	2000 – 6500	11,220
<b>RGBW</b>					
Q56DT-56Z-220008F	22.0" x 0.787"	RGBW	2,400	Indeterminate	4,990
E112DT-112Z-440008F	44.0" x 0.787"	RGBW	4,800	Indeterminate	9,980
<b>RGBWW</b>					
Q56DG-56Z-225010F	22.5" x 1.0"	RGBWW	2,400	Indeterminate	2,545
Q56DT-56Z-220010F	22.0" x 1.0"	RGBWW	2,400	Indeterminate	2,495
E112DT-112Z-440010F	44.0" x 1.0"	RGBWW	4,800	Indeterminate	4,990

Arkalumen Products may be covered by patents in the US and elsewhere.

[www.arkalumen.com/patents](http://www.arkalumen.com/patents)

## Warranty Operation Range

Part Number	WW		RGB		Operating Temperature Range [°C]	Control Ranges <sup>1</sup>
SC56DT-110008F-40V	400mA	16W			-40.0 to +85.0	100% to 0.1%
QC112DT-220008F-40V	800mA	32W				
EC224DT-440008F-40V	1,600mA	64W				
SC32DG-113010S-24V	800mA	20W				
QC64DG-225010S-24V	1,600mA	41W				
EC128DG-450010S-24V	3,200mA	82W				
Q56DT-56Z-220008F	1,600mA	16W	160mA	R: 2.4W, G/B: 3.3W		
E112DT-112Z-440008F	3,200mA	32W	320mA	R: 4.8W, G/B: 6.6W		
Q56DG-56Z-225010F	720mA	16W	160mA	R: 2.4W, G/B: 3.3W		
Q56DT-56Z-220010F	800mA	16W	160mA	R: 2.4W, G/B: 3.3W		
E112DT-112Z-440010F	1,600mA	32W	320mA	R: 4.8W, G/B: 6.6W		

1. Control range is dependent on driver resolution.
2. Max Current and Max Power are specified based on the output of one channel



## DUAL WHITE - WWS

Electrical Characteristics (Tj = 45 °C, CCT = 4000K, CRI = 80)

Part Number	Vf	175mA		350mA		700mA		1,400mA	
		Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]
SC56DT-110008F-40V	38 – 40V	1,196	172	2,224	153				
QC112DT-220008F-40V	38 – 40V	1,243	186	2,393	172	4,448	153		
EC224DT-440008F-40V	38 – 40V	1,276	195	2,486	186	4,786	172	8,896	153

Correlated Color Temperature (CCT) and CRI: Lumen Multiplication Factor

CRI	2200K	2700K	3000K	3500K	4000K	5000K	6500K
80+	0.80	0.92	0.96	0.99	1.00	1.01	1.00
90+	0.67	0.76	0.78	0.81	0.85	0.86	0.85

Junction Temperature (Tj): Lumen Multiplication Factor

25°C	45°C	65°C	85°C
1.04	1.00	0.96	0.92

# DUAL WHITE – WWS

## Mechanical Characteristics

Part Number	Dimensions [in]	# of Pixels	Technology	# of Connectors
SC56DT-110008F-40V	11.0 x 0.787	28 Warm, 28 Cool	WWS	8
QC112DT-220008F-40V	22.0 x 0.787	56 Warm, 56 Cool	WWS, Cuttable by 5.5"	8
EC224DT-440008F-40V	44.0 x 0.787	112 Warm, 112 Cool	WWS, Cuttable by 5.5"	8

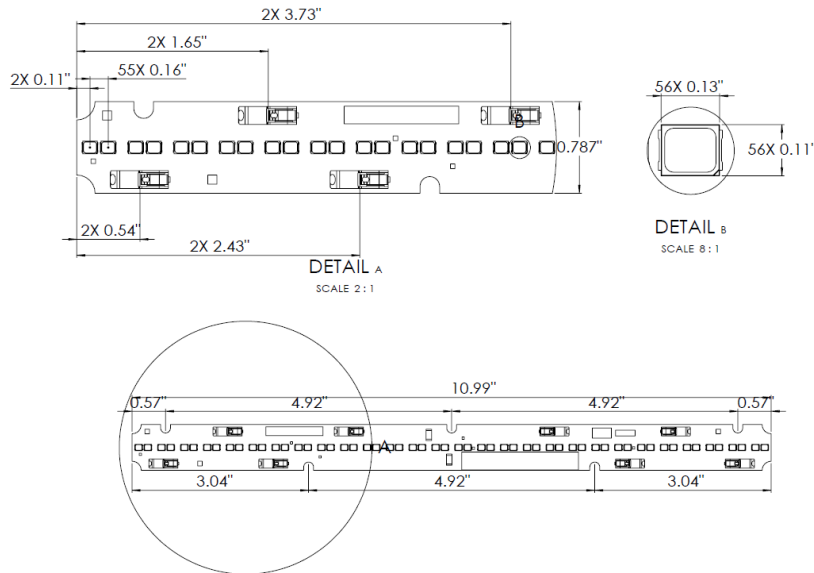


Figure 1 SC56DT-110008F-40V Mechanical Drawing

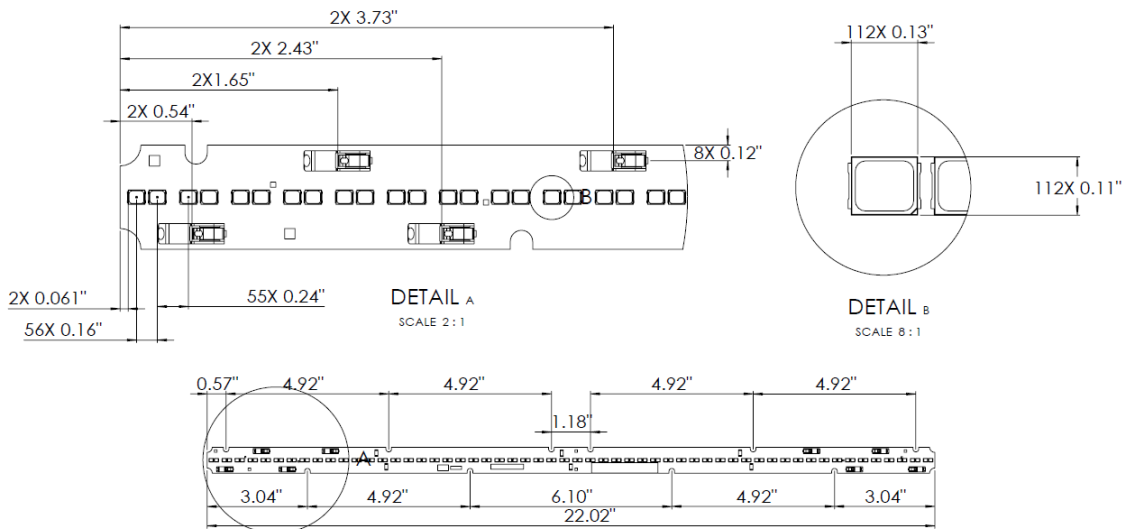


Figure 2 QC112DT-220008F-40V Mechanical Drawing

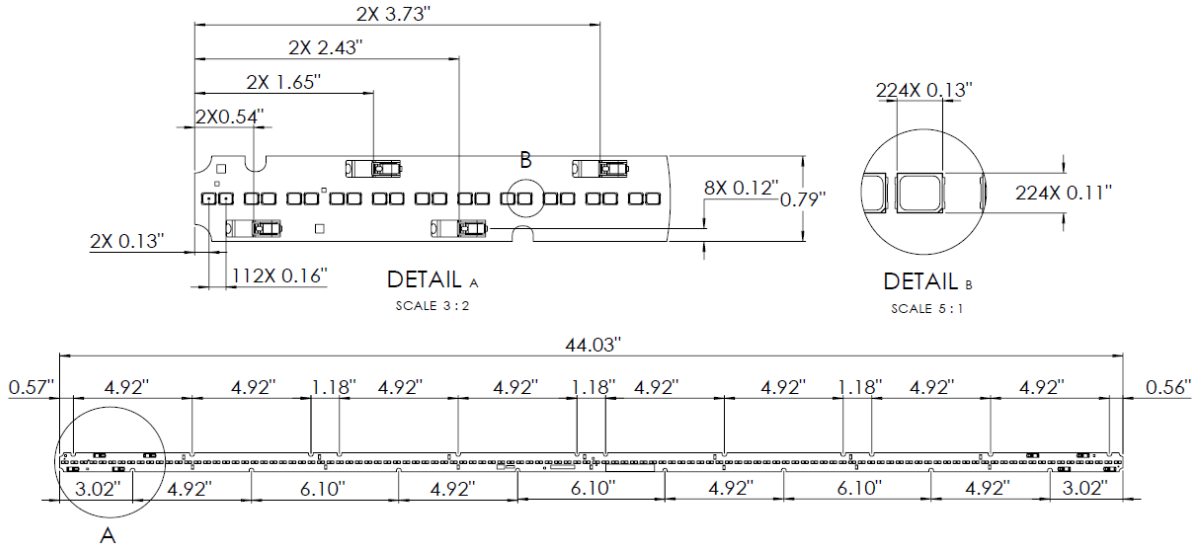


Figure 3 EC224DT-440008F-40V Mechanical Drawing



## DUAL WHITE – WWX

Electrical Characteristics (T<sub>j</sub> = 45 °C, CCT = 4000K, CRI = 80)

Part Number	V <sub>f</sub>	350mA		700mA		1,400mA		2,100mA	
		Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]
SC32DG-113010S-24V	22 – 26V	1,346	165	2,503	142				
QC64DG-225010S-24V	22 – 26V	1,402	180	2,692	165	5,007	142		
EC128DG-450010S-24V	22 – 26V	1,428	189	2,805	180	5,385	165	10,015	142

Correlated Color Temperature (CCT) and CRI: Lumen Multiplication Factor

CRI	2200K	2700K	3000K	3500K	4000K	5000K	6500K
80+	0.67	0.96	0.96	0.98	1.00	1.01	0.99
90+	-	0.82	0.84	0.87	0.89	0.89	0.89

Junction Temperature (T<sub>j</sub>): Lumen Multiplication Factor

25°C	45°C	65°C	85°C
1.03	1.00	0.97	0.94

# DUAL WHITE – WWX

## Mechanical Characteristics

Part Number	Dimensions [in]	# of Pixels	Technology	# of Connectors
SC32DG-113010S-24V	11.25 x 1.0	16 Warm, 16 Cool	WWX	4
QC64DG-225010S-24V	22.5 x 1.0	32 Warm, 32 Cool	WWX	4
EC128DG-450010S-24V	45.0 x 1.0	64 Warm, 64 Cool	WWX	4

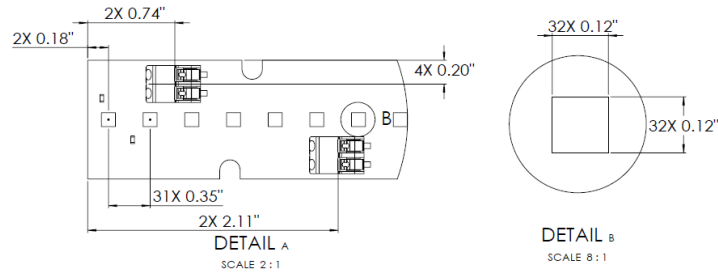


Figure 4 SC32DG-113010S-24V Mechanical Drawing

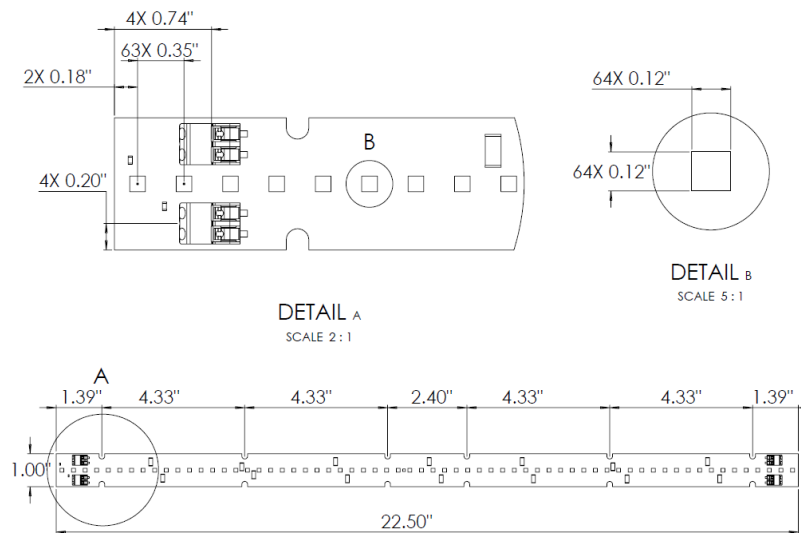


Figure 5 QC64DG-225010S-24V Mechanical Drawing

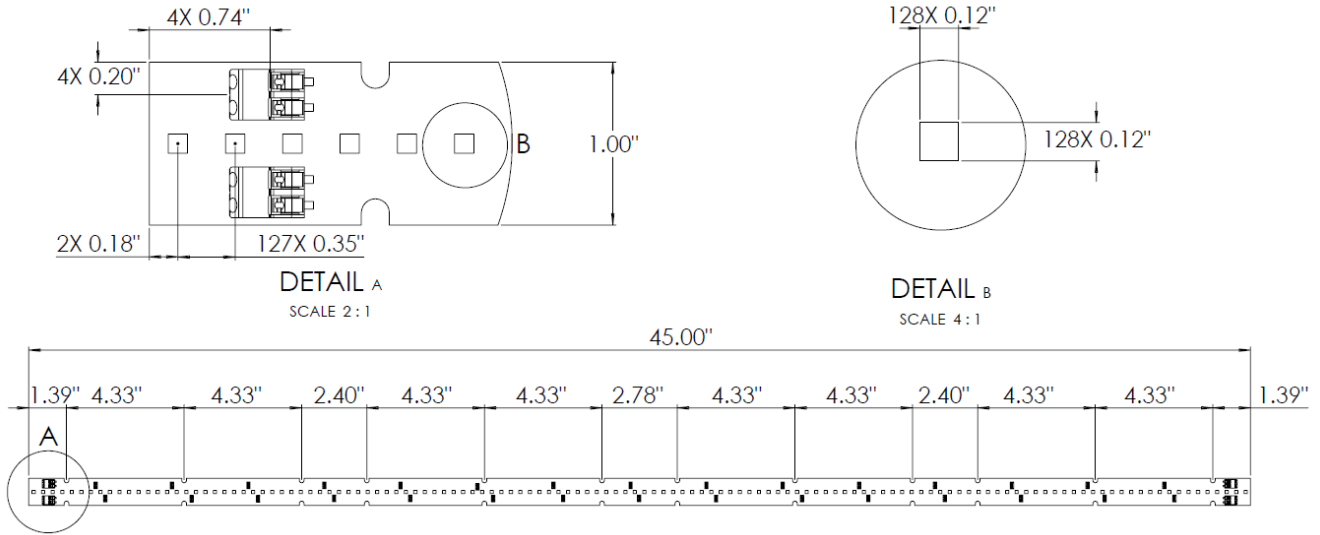


Figure 6 EC128DG-450010S-24V Mechanical Drawing





## FULL COLOR - RGBW AND RGBWW

Electrical Characteristics (T<sub>j</sub> = 45 °C, CCT = 4000K, CRI = 80)

Part Number	V <sub>f</sub>	500mA		700mA		1,050mA		1,400mA	
		Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]
<b>RGBW</b>									
Q56DT-56Z-220008F	22 – 26V	1,723	180	2,393	172	3,420	162	4,448	153
E112DT-112Z-440008F	22 – 26V	1,831	190	2,486	186	3,656	180	4,786	172
<b>RGBWW</b>									
Q56DG-56Z-225010F	22 – 26V	1,850	188	2,513	178				
Q56DT-56Z-220010F	22 – 26V	1,650	163	2,224	153				
E112DT-112Z-440010F	22 – 26V	1,723	180	2,393	172	3,420	162	4,448	153

Correlated Color Temperature (CCT) and CRI: Lumen Multiplication Factor for White

CRI	2200K	2700K	3000K	3500K	4000K	5000K	6500K
80+	0.80	0.92	0.96	0.99	1.00	1.01	1.00
90+	0.67	0.76	0.78	0.81	0.85	0.86	0.85

Junction Temperature (T<sub>j</sub>): Lumen Multiplication Factor for White

25°C	45°C	65°C	85°C
1.04	1.00	0.96	0.92

### Electrical Characteristics (Color = Red)

Part Number	Vf	80mA		160mA		240mA		320mA	
		Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]
RGBW									
Q56DT-56Z-220008F	13 – 15V	55	49	105	43				
E112DT-112Z-440010F	13 – 15V	55	51	111	49	163	46	211	43
RGBWW									
Q56DG-56Z-225010F	13 – 15V	55	49	105	43				
Q56DT-56Z-220010F	13 – 15V	55	49	105	43				
E112DT-112Z-440010F	13 – 15V	55	51	111	49	163	46	211	43

### Electrical Characteristics (Color = Green)

Part Number	Vf	80mA		160mA		240mA		320mA	
		Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]
RGBW									
Q56DT-56Z-220008F	17 – 20V	201	132	324	98				
E112DT-112Z-440008F	17 – 20V	246	173	403	132	537	112	649	98
RGBWW									
Q56DG-56Z-225010F	17 – 20V	201	132	324	98				
Q56DT-56Z-220010F	17 – 20V	201	132	324	98				
E112DT-112Z-440010F	17 – 20V	246	173	403	132	537	112	649	98

### Electrical Characteristics (Color = Blue)

Part Number	Vf	80mA		160mA		240mA		320mA	
		Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]	Luminous Flux [lm]	Efficacy [lm/W]
RGBW									
Q56DT-56Z-220008F	17 – 20V	39	24	66	20				
E112DT-112Z-440008F	17 – 20V	44	29	78	24	107	22	132	20
RGBWW									
Q56DG-56Z-225010F	17 – 20V	39	24	66	20				
Q56DT-56Z-220010F	17 – 20V	39	24	66	20				
E112DT-112Z-440010F	17 – 20V	44	29	78	24	107	22	132	20

# FULL COLOR - RGBW AND RGBWW

## Mechanical Characteristics

Part Number	Dimensions [in]	# of Pixels	Technology	# of Connectors
Q56DT-56Z-220008F	22.0x0.787"	56	RGBW, Cuttable by 5.5"	10
E112DT-112Z-220008F	44.0x0.787"	112	RGBW, Cuttable by 5.5"	10
Q56DG-56Z-225010F	22.5x1.0"	56	RGBWW	3
Q56DT-56Z-220010F	22.0x1.0"	56	RGBWW	6
E112DT-112Z-440010F	44.0x1.0"	112	RGBWW	6

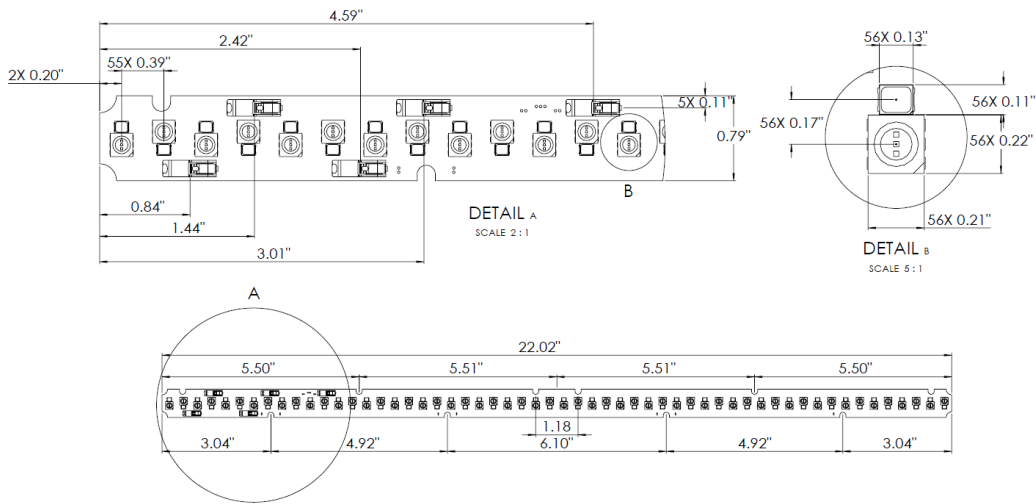


Figure 7 Q56DT-56Z-225008F Mechanical Drawing

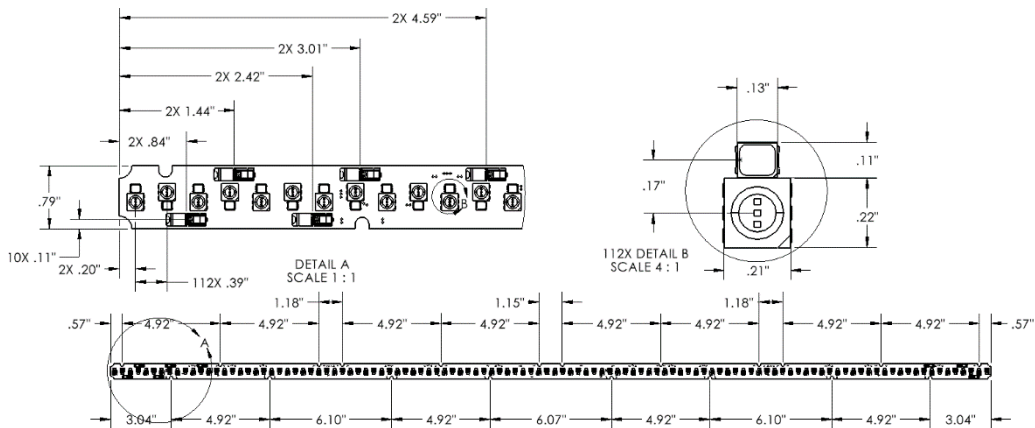


Figure 8 E112DT-112Z-220008F Mechanical Drawing

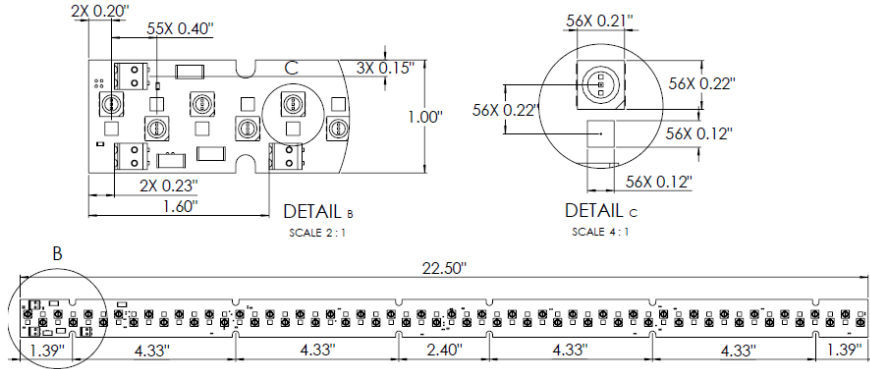


Figure 9 Q56DG-56Z-225010F Mechanical Drawing

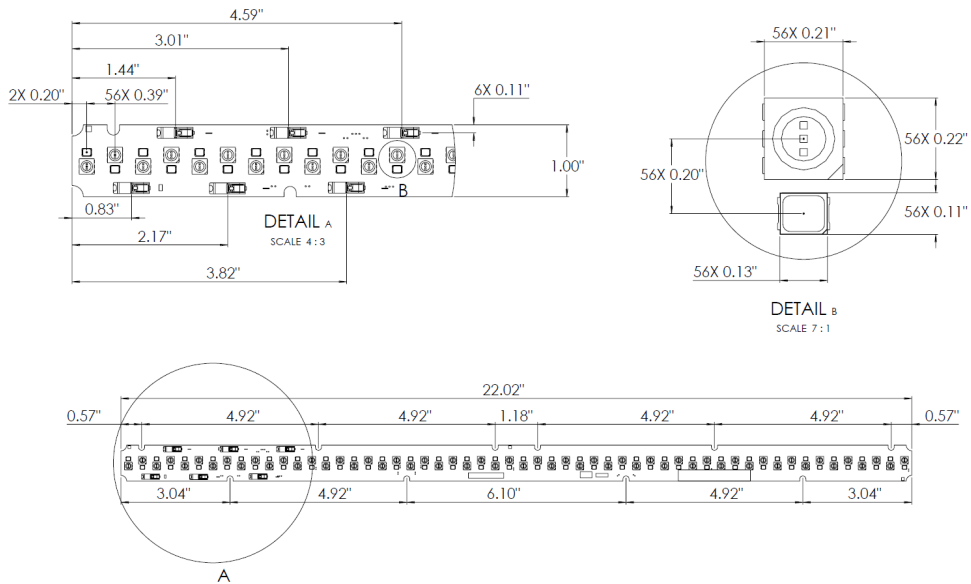


Figure 10 Q56DT-56Z-220010F Mechanical Drawing

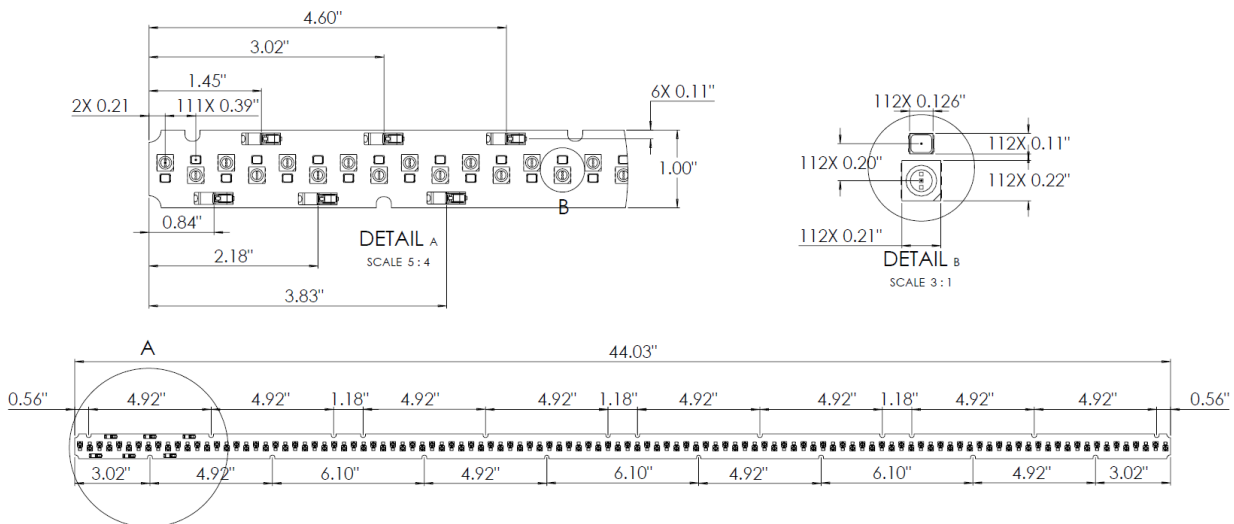


Figure 11 E112DT-112Z-440010F Mechanical Drawing