



# LED MODULES

## FOR HIGH LUMEN APPLICATIONS



### Features

- > Design focused on achieving industry leading lm/\$ and lm/W
- > High efficacy: 4000 lm, 6000 lm, and 8000 lm packages tested at 170 lm/W
- > Aluminium core PCB in all light engines for excellent heat dissipation
- > CCT options from 2200K – 6500K, up to 3-step MacAdam available



Part Number	Dimensions [Inch]	Nominal Voltage	Nominal Light Output	Nominal Efficacy	Maximum Light Output
SC20SG-110008S-24V	11.0 x 0.8	24V	2,000lm	173lm/W	3,658lm
QC40SG-220008S-24V	22.0 x 0.8	24V	4,000	173	7,316
QF80SG-220016S-24V	22.0 x 1.574	24V	8,000	173	14,632
QF80DG-220016S-48V	22.0 x 1.574	24V/48V1	8,000	173	14,632
U80SG-115025S-24V	11.5 x 2.5	24V	8,000	173	14,632

### Warranty Operation Range

Part Number	Max Current	Max Power	Operating Temperature Range [°C]	Control Range <sup>1</sup>
SC20SG-110008S-24V	1,000mA	25W	-40.0 to +85.0	100% to 0.1%
QC40SG-220008S-24V	2,000mA	50W		
QF80SG-220016S-24V	4,000mA	100W		
QF80DG-220016S-48V	4,000mA/ 2,000mA <sup>2</sup>	100W		
U80SG-115025S-24V	4,000mA	100W		

1. Control range is dependent on driver resolution.
2. QF80DG wired in Series (48V) configuration operates at half the max current

Arkalumen Products may be covered by patents in the US and elsewhere.  
[www.arkalumen.com/patents](http://www.arkalumen.com/patents)



## SINGLE ROW STRIPS

Electrical Characteristics ( $T_j = 45^\circ\text{C}$ , CCT = 4000K, CRI = 80)

Part Number	Vf	500mA		700mA		1,000mA		2,000mA	
		Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]
SC20SG-110008S-24V	22 – 26V	2,021	173	2,710	160	3,658	144		
QC40SG-220008S-24V	22 – 26V	2,145	193	2,933	184	4,043	173	7,317	144

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

CRI	2200K	2700K	3000K	3500K	4000K	5000K	6500K
80+	0.80	0.91	0.93	0.95	1.00	1.00	0.98
90+	-	0.76	0.79	0.82	0.84	0.84	0.84

Junction Temperature ( $T_j$ ): Lumen Multiplication Factor

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

## SINGLE ROW STRIPS

### Mechanical Characteristics

Part Number	Dimensions [in]	# of LEDs	Technology	# of Connectors
SC20SG-110008S-24V	11.0 x 0.8	20	White	2
QC40SG-220008S-24V	22.0 x 0.8	40	White	2

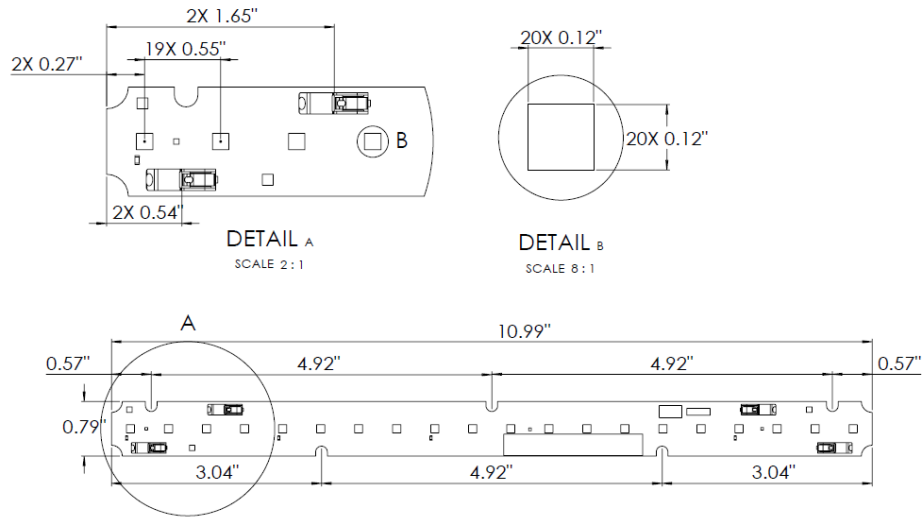


Figure 1 SC20SG-110008S-24V Mechanical Drawing

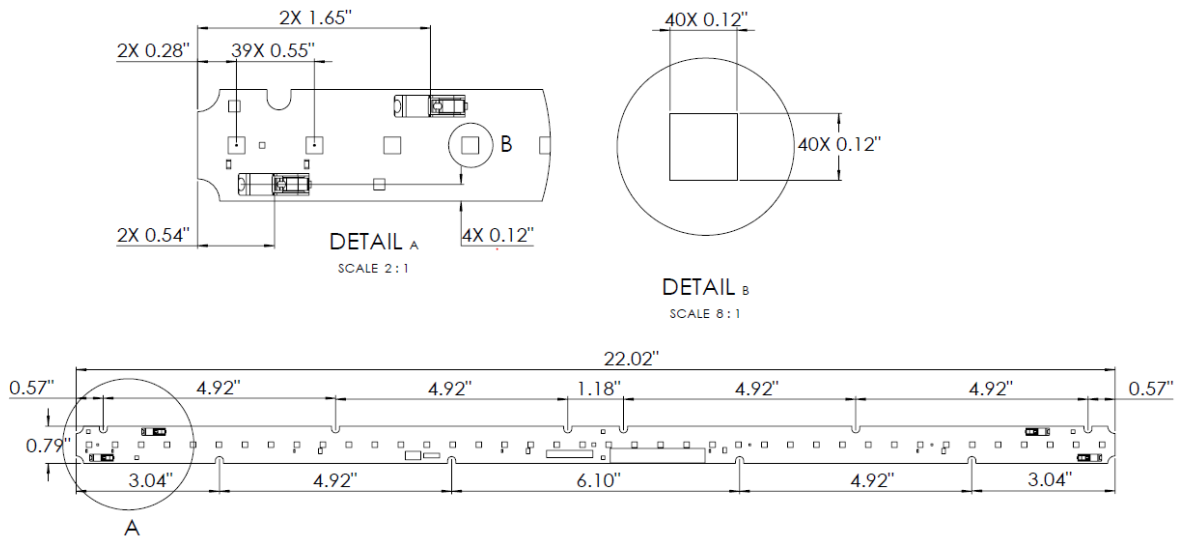


Figure 2 QC40SG-220008S-24V Mechanical Drawing



## DOUBLE ROW STRIPS

Electrical Characteristics ( $T_j = 45^\circ\text{C}$ , CCT = 4000K, CRI = 80)

Part Number	Vf	500mA		700mA		1,000mA		2,000mA	
		Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]
QF80SG-220016S-24V	22 – 26V	2,183	203	4,290	193	8,087	173	14,632	144
QF80DG-220016S-48V, Parallel	22 – 26V	2,183	203	4,290	193	8,087	173	14,632	144
QF80DG-220016S-48V, Series	44 – 51V	4,290	193	8,087	173	14,632	144		

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

CRI	2200K	2700K	3000K	3500K	4000K	5000K	6500K
80+	0.80	0.91	0.93	0.95	1.00	1.00	0.98
90+	-	0.76	0.79	0.82	0.84	0.84	0.84

Junction Temperature ( $T_j$ ): Lumen Multiplication Factor

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

## DOUBLE ROW STRIPS

### Mechanical Characteristics

Part Number	Dimensions [in]	# of LEDs	Technology	# of Connectors
QF80SG-220016S-24V	22.0 x 1.574	80	White	2
QF80DG-220016S-48V	22.0 x 1.574	80	White	2

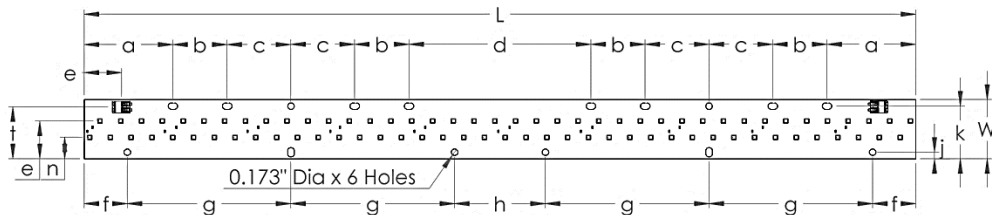


Figure 3 QF80SG-220016S-24V Mechanical Drawing

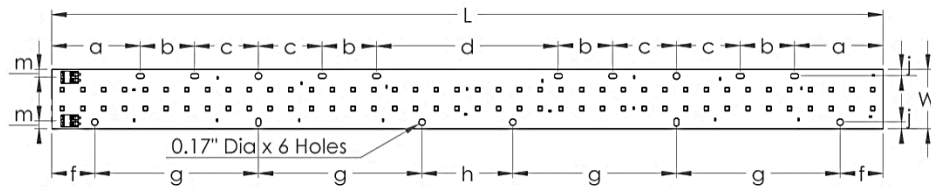
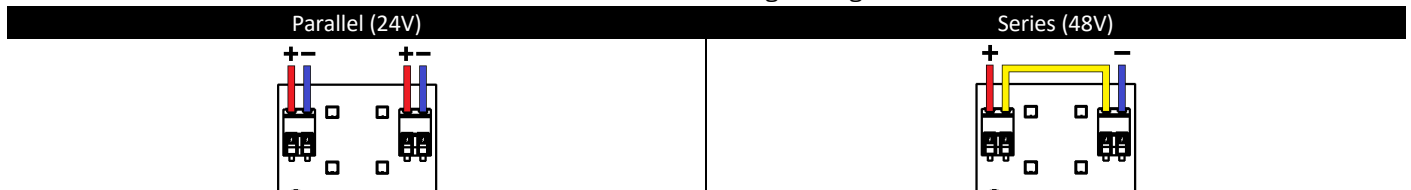


Figure 4 QF80DG-220016S-48V Mechanical Drawing

#### Mechanical Drawings Reference Table

a = 2.344	b = 1.438	c = 1.688	d = 4.813	e = 1.000	f = 1.138	g = 4.33	h = 2.40
j = 0.178	k = 1.397	L = 22.0	W = 1.574	t = 1.375	n = 0.57	m = 0.21	

### QF80DG-220016S Wiring Configuration





## ARRAYS

Electrical Characteristics ( $T_j = 45^\circ\text{C}$ , CCT = 4000K, CRI = 80)

Part Number	Vf	500mA		1,000mA		2,000mA		4,000mA	
		Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]	Luminus Flux [lm]	Efficacy [lm/W]
U80SG-115025S-24V	22 – 26V	2,183	203	4,290	193	8,087	173	14,632	144

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

CRI	2200K	2700K	3000K	3500K	4000K	5000K	6500K
80+	0.80	0.91	0.93	0.95	1.00	1.00	0.98
90+	-	0.76	0.79	0.82	0.84	0.84	0.84

Junction Temperature ( $T_j$ ): Lumen Multiplication Factor

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

## ARRAYS

### Mechanical Characteristics

Part Number	Dimensions [in]	# of LEDs	Technology	# of Connectors
U80SG-115025S-24V	11.5 x 2.5	80	White	2

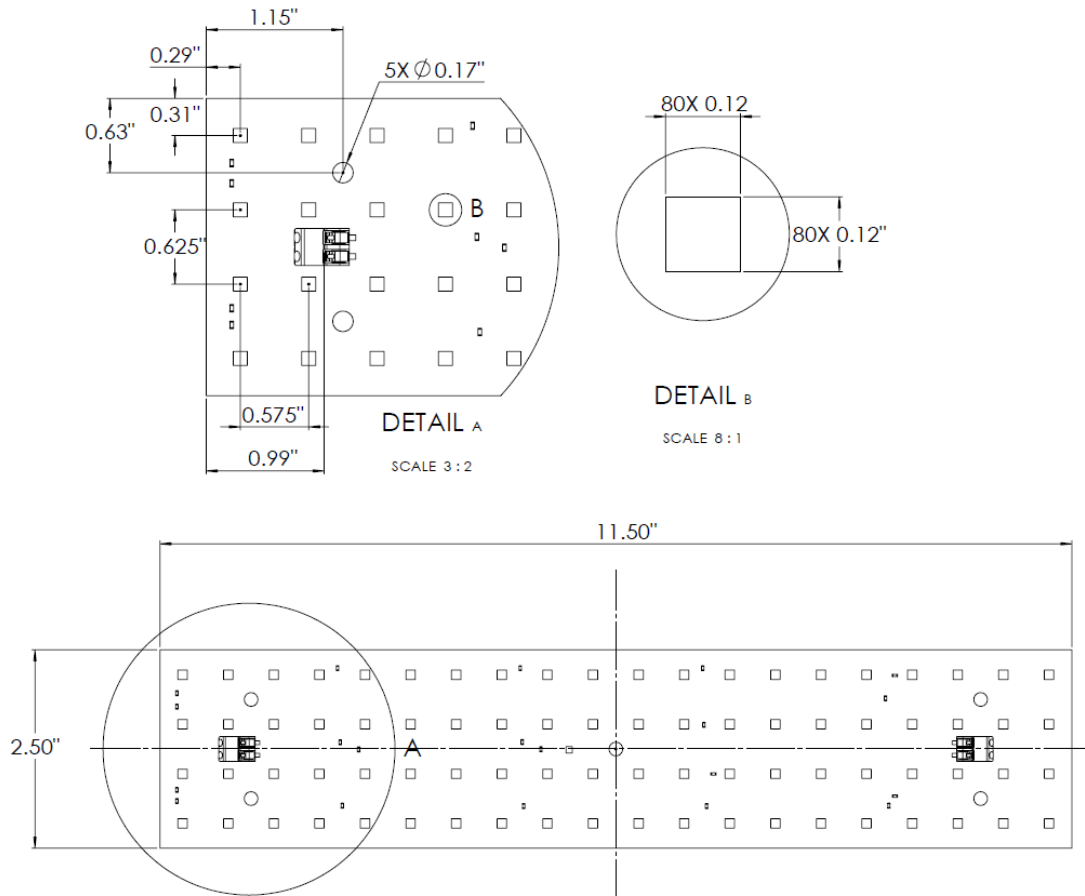


Figure 5 – U80SG-115025S-24V Mechanical Drawing