

BOLD

BEAUTIFUL CONTROLLABLE LIGHT

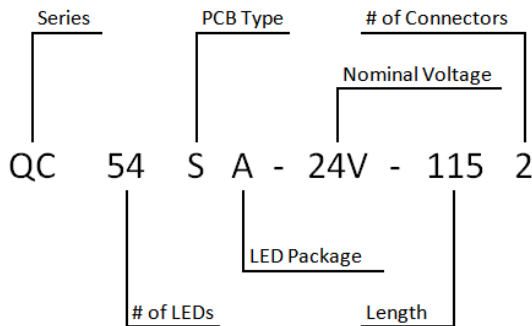


Features:

- > BOLD light engines are specially designed to enable smooth CCT adjustments when matched with APT controllers
- > Arkalumen's intertwined pixel designs for dual color and RGBWW encourage full mixing of light prior to optics
- > Dual color designs available at 2000 lm, 3000 lm, and 4000 lm per channel with CCT range of 2000-7000K
- > RGBWW light engines matched with APT-CV5 controllers can be calibrated for 90-98 CRI across all CCT
- > All BOLD boards available in 1ft, 2ft, and 4ft linear designs and 1ft x 1ft arrays as well as custom lengths and shapes



BOLD Light Engine Order Code



| Legend | | |
|----------|---|------------------------------------|
| Series | QC: 2' Linear, Centered Q: 2' Linear | VL: Square Array E: 4' Linear |
| PCB Type | F: FR4 | S: Aluminum D: 2-Layer Aluminum |
| Length | In inches, ex: 220=22.0" | |

| Board | Dimensions [Inch] | LED Colors | Nominal Light Output per Channel [lm] | CCT Range [K] | Max Light Output [lm] |
|--------|-------------------|------------|---------------------------------------|---------------|-----------------------|
| QC54SA | 22.0" x 1.0" | WW | 2,000 | 2600-7000 | 4,500 |
| Q72DA | 22.0" x 1.0" | WW | 3,000 | 2600-7000 | 6,000 |
| QC64DG | 22.5" x 1.0" | WW | 4,000 | 2600-7000 | 11,400 |
| VL54SA | 11.5" x 11.5" | WW | 2,000 | 2600-7000 | 4,500 |
| VL72SA | 11.5" x 11.5" | WW | 3,000 | 2600-7000 | 6,000 |
| Q56DZ | 22.5" x 1.0" | RGBWW | 2,400 | Unlimited | 4,900 |
| E98DZ | 45.0" x 1.0" | RGBWW | 3,700 | Unlimited | 8,600 |
| VL56DZ | 11.5" x 11.5" | RGBWW | 2,400 | Unlimited | 4,900 |

Release: 2016-BOLD-1.0

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Dual Color Strips

Electrical Characteristics ($T_j = 45\text{ }^\circ\text{C}$)

| Board | # of LEDs | Current [mA] | Voltage [V] | Power [W] | Luminous Flux [lm] | | |
|--------|-----------|--------------|-------------|-----------|--------------------|--------|--------|
| | | | | | Min | Typ. | Max |
| QC54SA | 54 | 390 | 26.3 | 10.3 | 1,675 | 1,730 | 1,780 |
| | | 600 | 27.2 | 16.3 | 2,525 | 2,605 | 2,685 |
| | | 1,080 | 28.9 | 31.2 | 4,375 | 4,510 | 4,645 |
| Q72DA | 72 | 520 | 26.3 | 13.7 | 2,235 | 2,305 | 2,375 |
| | | 800 | 27.2 | 21.8 | 3,370 | 3,475 | 3,580 |
| | | 1,440 | 28.9 | 41.6 | 5,835 | 6,015 | 6,195 |
| QC64DG | 64 | 1040 | 22.3 | 23.2 | 3,990 | 4,130 | 4,275 |
| | | 1,600 | 23.1 | 37.0 | 6,000 | 6,215 | 6,430 |
| | | 2,880 | 24.5 | 70.6 | 10,130 | 10,490 | 10,850 |

Mechanical Specifications

| | | | |
|--------|--------------|---------------------|------------------------------|
| QC54SA | 22.0" x 1.0" | LED: 5630 Mid-Power | Connectors: 4x Wire to Board |
|--------|--------------|---------------------|------------------------------|

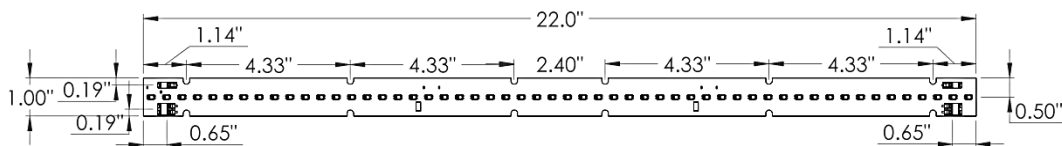


Figure 1 – QC54SA Mechanical Drawing

| | | | |
|-------|--------------|---------------------|------------------------------|
| Q72DA | 22.0" x 1.0" | LED: 5630 Mid-Power | Connectors: 4x Wire to Board |
|-------|--------------|---------------------|------------------------------|

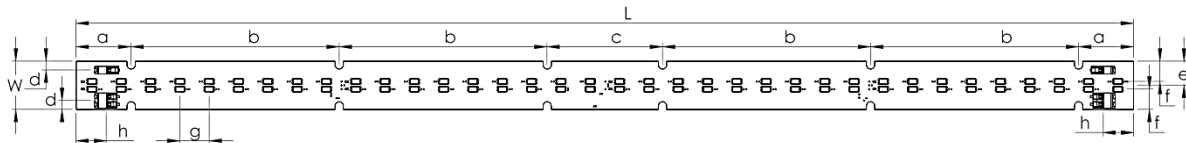


Figure 2 – Q72DA Mechanical Drawing

| | | | |
|--------|--------------|---------------------|------------------------------|
| QC64DG | 22.5" x 1.0" | LED: 3030 Mid-Power | Connectors: 4x Wire to Board |
|--------|--------------|---------------------|------------------------------|

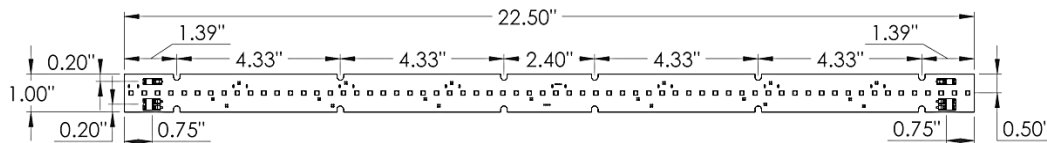


Figure 3 – QC64DG Mechanical Drawing

Dimensions Reference Table (Inches)

| | | | | |
|-----------|----------|-----------|-----------|----------|
| a = 1.14 | b = 4.33 | c = 2.40 | d = 0.185 | e = 0.50 |
| f = 0.421 | g = 0.61 | h = 0.646 | L = 22.0 | W = 1.0 |

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Electrical Characteristics ($T_j = 45^\circ\text{C}$)

| Board | # of Pixels | Current per Channel [mA] | | Voltage [V] | | | Power [W] | Luminous Flux [lm] | | |
|-------|-------------|--------------------------|-----|-------------|------|------|-----------|--------------------|-------|-------|
| | | W | RGB | W | R | GB | | Min | Typ. | Max |
| Q56DZ | 56 | 520 | 240 | 19.9 | 13.7 | 19.0 | 14.4 | 1,580 | 2,140 | 2,375 |
| | | 800 | 360 | 20.7 | 14.5 | 19.8 | 23.0 | 2,270 | 3,100 | 3,450 |
| | | 1,440 | 480 | 22.4 | 14.5 | 20.5 | 41.1 | 3,580 | 4,990 | 5,575 |
| E98DZ | 98 | 910 | 420 | 19.9 | 13.7 | 19.0 | 25.3 | 2,765 | 3,750 | 4,160 |
| | | 1,400 | 630 | 20.7 | 14.5 | 19.8 | 40.4 | 3,970 | 5,430 | 6,035 |
| | | 2,520 | 840 | 22.4 | 14.5 | 20.5 | 71.9 | 6,270 | 8,735 | 9,760 |

Mechanical Specifications

| | | | |
|-------|--------------|-------------------------------|------------------------------|
| Q56DZ | 22.5" x 1.0" | LED: 3030 Mid-Power, 5050 RGB | Connectors: 3x Wire to Board |
|-------|--------------|-------------------------------|------------------------------|

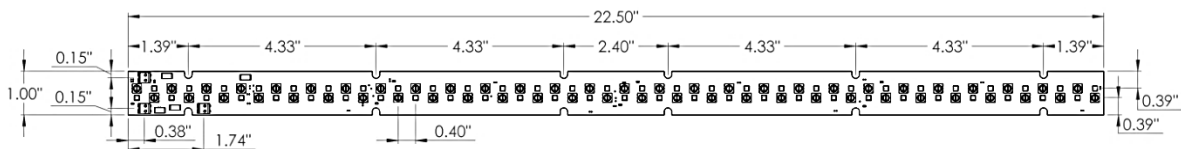


Figure 4 – QC56DZ Mechanical Drawing

| | | | |
|-------|--------------|-------------------------------|------------------------------|
| E98DZ | 45.0" x 1.0" | LED: 3030 Mid-Power, 5050 RGB | Connectors: 3x Wire to Board |
|-------|--------------|-------------------------------|------------------------------|

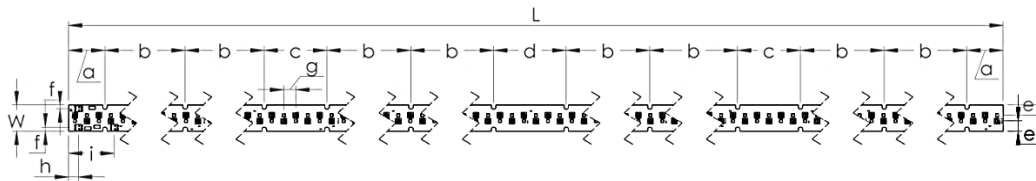


Figure 5 – E98DZ Mechanical Drawing

Dimensions Reference Table (Inches)

| | | | | | |
|------------|-----------|-----------|-----------|----------|-----------|
| a = 1.3875 | b = 4.33 | c = 2.40 | d = 2.775 | e = 0.39 | f = 0.145 |
| g = 0.459 | h = 0.375 | i = 1.744 | L = 45.0 | W = 1.0 | |

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Dual Color Arrays

Electrical Characteristics ($T_j = 45\text{ }^\circ\text{C}$)

| Board | # of LEDs | Current [mA] | Voltage [V] | Power [W] | Luminous Flux [lm] | | |
|--------|-----------|--------------|-------------|-----------|--------------------|-------|-------|
| | | | | | Min | Typ. | Max |
| VL54SA | 54 | 390 | 26.3 | 10.3 | 1,675 | 1,730 | 1,780 |
| | | 600 | 27.2 | 16.3 | 2,525 | 2,605 | 2,685 |
| | | 1,080 | 28.9 | 31.2 | 4,375 | 4,510 | 4,645 |
| VL72SA | 72 | 520 | 26.3 | 13.7 | 2,235 | 2,305 | 2,375 |
| | | 800 | 27.2 | 21.8 | 3,370 | 3,475 | 3,580 |
| | | 1,440 | 28.9 | 41.6 | 5,835 | 6,015 | 6,195 |

RGBWW Arrays

Electrical Characteristics ($T_j = 45\text{ }^\circ\text{C}$)

| Board | # of Pixels | Current per Channel [mA] | | Voltage [V] | | | Power [W] | Luminous Flux [lm] | | |
|--------|-------------|--------------------------|-----|-------------|------|------|-----------|--------------------|-------|-------|
| | | W | RGB | W | R | GB | | Min | Typ. | Max |
| VL56SZ | 56 | 520 | 240 | 19.9 | 13.7 | 19.0 | 14.4 | 1,580 | 2,140 | 2,375 |
| | | 800 | 360 | 20.7 | 14.5 | 19.8 | 23.0 | 2,270 | 3,100 | 3,450 |
| | | 1,440 | 480 | 22.4 | 14.5 | 20.5 | 41.1 | 3,580 | 4,990 | 5,575 |

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Spectrum Distribution

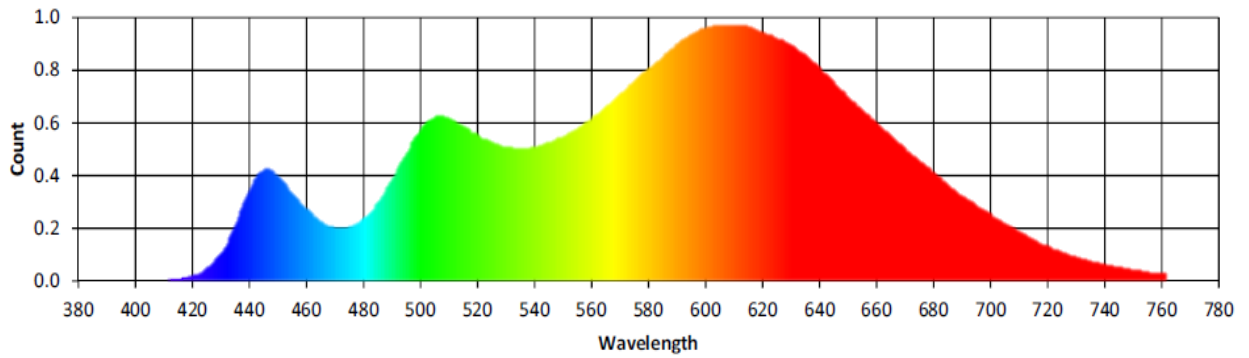


Figure 6 - 3000K Spectrum Distribution (CRI: 97)

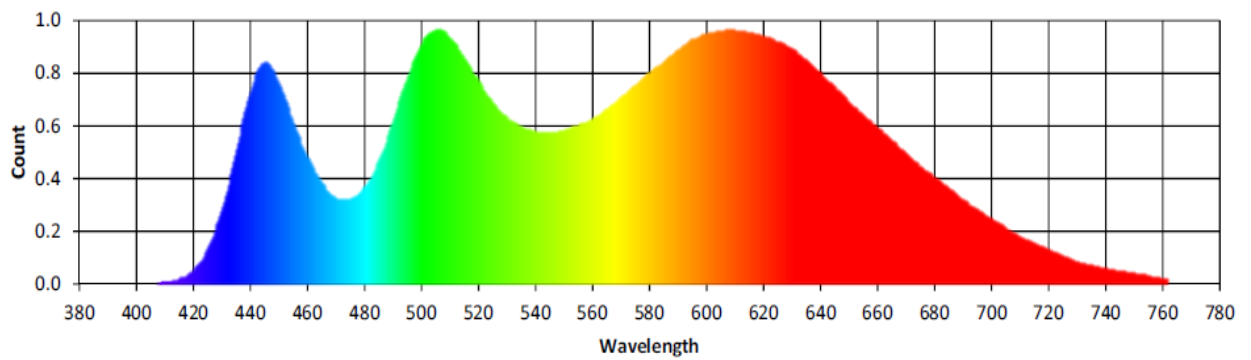


Figure 7 - 4000K Spectrum Distribution (CRI: 97)

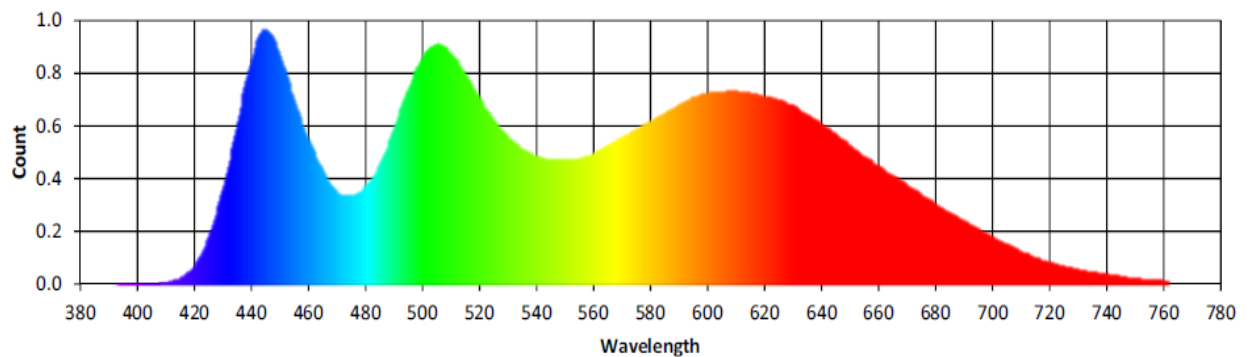


Figure 8 - 5000K Spectrum Distribution (CRI: 97)

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