

# DMX PROTOCOL

---

## POI WASH FAMILY



### **3 DMX MODES**

- 3 Calibrated (8-bit)
- 3 Calibrated (16-bit)
- 4 CTC (8-bit)
- 4 CTC (16-bit)
- 5 Extended

### **7 NOTES**

- 7 Note 1**
- 7 Note 2**
- 7 Note 3**
- 7 Note 4**
- 7 Note 5**

### **8 CTC CHART**

CALIBRATED (8-BIT)

| CHANNEL | NAME  | DMX |     | DMX PERCENTAGE |        | DESCRIPTION          | INFO |
|---------|-------|-----|-----|----------------|--------|----------------------|------|
| 1       | Red   | 0   | 255 | 0,0%           | 100,0% | Fade 0% → 100% Red   | Fade |
| 2       | Green | 0   | 255 | 0,0%           | 100,0% | Fade 0% → 100% Green | Fade |
| 3       | Blue  | 0   | 255 | 0,0%           | 100,0% | Fade 0% → 100% Blue  | Fade |

CALIBRATED (16-BIT)

| CHANNEL | NAME  | DMX |       | DMX PERCENTAGE |        | DESCRIPTION     | INFO |
|---------|-------|-----|-------|----------------|--------|-----------------|------|
| 1+2     | Red   | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Red   | Fade |
| 3+4     | Green | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Green | Fade |
| 5+6     | Blue  | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Blue  | Fade |

CTC (8-BIT)

| CHANNEL | NAME       | DMX |     | DMX PERCENTAGE |        | DESCRIPTION              | INFO          |
|---------|------------|-----|-----|----------------|--------|--------------------------|---------------|
| 1       | Intensity  | 0   | 255 | 0,0%           | 100,0% | 0% → 100% Intensity      | Fade          |
| 2       | CTC        | 0   | 0   | 0,0%           | 0,0%   | Default Calibrated White | "Note 1"      |
|         |            | 1   | 4   | 0,4%           | 1,6%   | Raw                      |               |
|         |            | 5   | 255 | 2,0%           | 100,0% | 2000K → 10000K           | See CTC chart |
| 3       | Color path | 0   | 127 | 0,0%           | 49,8%  | SGM Standard             |               |
|         |            | 128 | 255 | 50,2%          | 100,0% | SGM VersaPath™           | "Note 4"      |
| 4       | Red        | 0   | 255 | 0,0%           | 100,0% | 0% → 100% Red            | Fade          |
| 5       | Green      | 0   | 255 | 0,0%           | 100,0% | 0% → 100% Green          | Fade          |
| 6       | Blue       | 0   | 255 | 0,0%           | 100,0% | 0% → 100% Blue           | Fade          |

CTC (16-BIT)

| CHANNEL | NAME       | DMX |       | DMX PERCENTAGE |        | DESCRIPTION              | INFO          |
|---------|------------|-----|-------|----------------|--------|--------------------------|---------------|
| 1+2     | Intensity  | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Intensity      | Fade          |
| 3       | CTC        | 0   | 0     | 0,0%           | 0,0%   | Default Calibrated White | "Note 1"      |
|         |            | 1   | 4     | 0,4%           | 1,6%   | Raw                      |               |
|         |            | 5   | 255   | 2,0%           | 100,0% | 2000K → 10000K           | See CTC chart |
| 4       | Color path | 0   | 127   | 0,0%           | 49,8%  | SGM Standard             |               |
|         |            | 128 | 255   | 50,2%          | 100,0% | SGM VersaPath™           | "Note 4"      |
| 5+6     | Red        | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Red            | Fade          |
| 7+8     | Green      | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Green          | Fade          |
| 9+10    | Blue       | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Blue           | Fade          |

EXTENDED

| CHANNEL | NAME             | DMX |       | DMX PERCENTAGE |        | DESCRIPTION              | INFO             |
|---------|------------------|-----|-------|----------------|--------|--------------------------|------------------|
| 1       | Shutter          | 0   | 7     | 0,0%           | 2,7%   | Closed                   | Snap             |
|         |                  | 8   | 15    | 3,1%           | 5,9%   | Open                     | Snap             |
|         |                  | 16  | 151   | 6,3%           | 59,2%  | Variable Strobe          | Fast → Slow      |
|         |                  | 152 | 175   | 59,6%          | 68,6%  | Pulse - Open             | Slow → Fast      |
|         |                  | 176 | 199   | 69,0%          | 78,0%  | Pulse - Close            | Slow → Fast      |
|         |                  | 200 | 244   | 78,4%          | 95,7%  | Variable Random Strobe   | Slow → Fast      |
|         |                  | 245 | 255   | 96,1%          | 100,0% | Open                     | Snap             |
| 2+3     | Intensity        | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Intensity      | Fade             |
| 4       | CTC              | 0   | 0     | 0,0%           | 0,0%   | Default Calibrated White | "Note 1"         |
|         |                  | 1   | 4     | 0,4%           | 1,6%   | Raw                      |                  |
|         |                  | 5   | 255   | 2,0%           | 100,0% | 2000K → 10000K           | See CTC Chart    |
| 5       | Color path       | 0   | 127   | 0,0%           | 49,8%  | SGM Standard             |                  |
|         |                  | 128 | 255   | 50,2%          | 100,0% | SGM VersaPath™           | "Note 4"         |
| 6       | Color mode       | 0   | 4     | 0,0%           | 1,6%   | CTC RGB                  | Snap<br>"Note 2" |
|         |                  | 5   | 9     | 2,0%           | 3,5%   | xy (CIE 1931)            |                  |
|         |                  | 10  | 14    | 3,9%           | 5,5%   | HSI                      |                  |
|         |                  | 15  | 19    | 5,9%           | 7,5%   | CMY                      |                  |
| 7       | Plus/minus green | 0   | 4     | 0,0%           | 1,6%   | Neutral                  | Snap             |
|         |                  | 5   | 125   | 2,0%           | 49,0%  | Minus green              | Max → Min        |
|         |                  | 126 | 134   | 49,4%          | 52,5%  | Neutral                  | Snap             |
|         |                  | 135 | 255   | 52,9%          | 100,0% | Plus green               | Min → Max        |
| 8       | Frequency        | 0   | 4     | 0,0%           | 1,6%   | Default (2594Hz)         | Snap             |
|         |                  | 5   | 255   | 2,0%           | 100,0% | 2594-10KHz               | Min → Max        |

| CHANNEL | NAME                                         | DMX |       | DMX PERCENTAGE |        | DESCRIPTION     | INFO             |
|---------|----------------------------------------------|-----|-------|----------------|--------|-----------------|------------------|
| 9       | Dimming Curve                                | 0   | 4     | 0,0%           | 1,6%   | Gamma Filtered  | Snap<br>"Note 3" |
|         |                                              | 5   | 9     | 2,0%           | 3,5%   | Gamma Raw       |                  |
|         |                                              | 10  | 14    | 3,9%           | 5,5%   | Gamma Halogen   |                  |
|         |                                              | 15  | 19    | 5,9%           | 7,5%   | Linear Filtered |                  |
|         |                                              | 20  | 24    | 7,8%           | 9,4%   | Linear Raw      |                  |
|         |                                              | 25  | 29    | 9,8%           | 11,4%  | Linear Halogen  |                  |
|         |                                              | 30  | 255   | 11,8%          | 100,0% | Reserved        |                  |
| 10+11   | Red / x / H<br>/ C / Red /<br>Red            | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Red   | Fade             |
| 12+13   | Green / y / S<br>/ M / Green<br>/ Green      | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Green | Fade             |
| 14+15   | Blue / NA /<br>I / Y / Blue /<br>Blue        | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% Blue  | Fade             |
| 16+17   | NA / NA /<br>NA / NA<br>/ White /<br>White * | 0   | 65535 | 0,0%           | 100,0% | 0% → 100% White | "Note 5"         |

\* NA- NOT AVAILABLE

## NOTE 1

When the CTC channel is set to value 000, the fixture will output a different calibrated white depending on the LED configuration of the fixture. **3000K and 4000K**

## NOTE 2

- **CTC RGB** allows RGBW mixing with CTC control over white on the Red, Green and Blue channels (3000K and 4000K White LED is controlled via RGB color engine).

- **xy** mode does not allow CTC control.

CTC RGB, HSI, and CMY modes can be combined with the CTC, Color Path and Plus/Minus Green channels.

- **HSI** and **CMY** modes use the Red, Green and Blue channels for the color mix.

## NOTE 3

**Gamma** or **Linear** corrected.

**Filtered** filters input signal

**Raw** allows for a faster response

**Halogen** creates an organic delay, similar to a tungsten lamp

## NOTE 4

With the Color Path set to **VersaPath™**, the color emulation reacts in the same way as a physical filter over a specific native color temperature (from 2000K to 10000K), editable via the CTC channel.

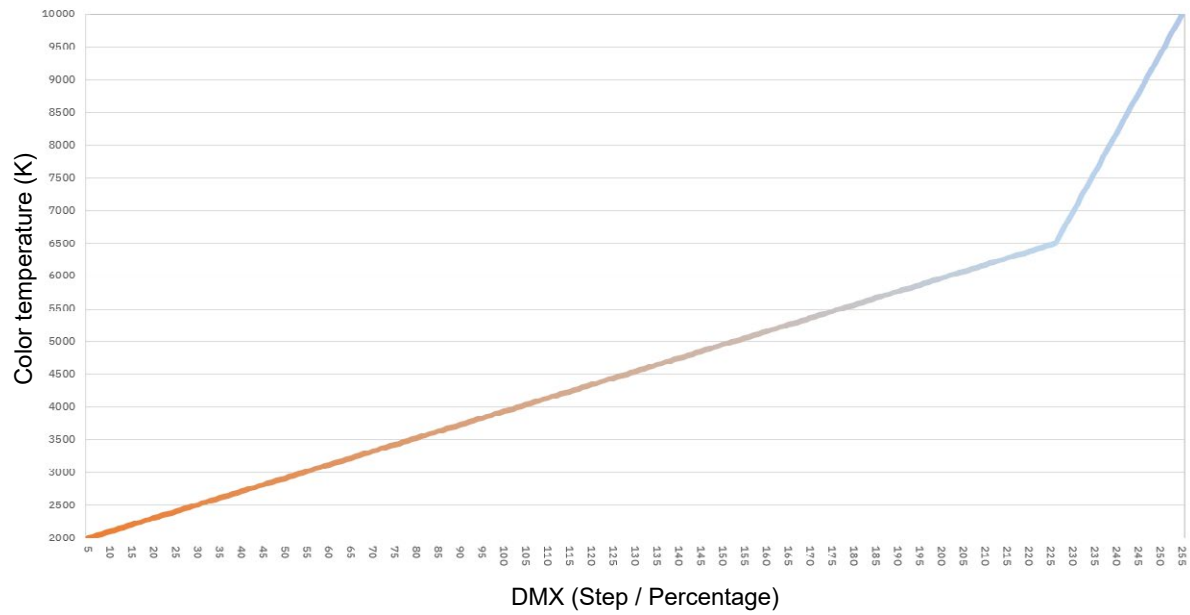
When Dimming Curve channel is set to Halogen, a “tungsten-lamp with color filter” look can be achieved.

When the Color Path is set to **VersaPath™**, the CTC channel can be used to move the RGB color mix over the black-body curve. In order to achieve this, at least 2 primary colors need to have values above 000.

## NOTE 5

When CTC is set to Raw, the White channel can be used

## CTC CHART



| CTC            | DMX | DMX PERCENTAGE | COLOR TEMPERATURE |
|----------------|-----|----------------|-------------------|
| 2000K → 10000K | 5   | 2,0%           | 2000K             |
|                | 15  | 5,9%           | 2200K             |
|                | 25  | 9,8%           | 2400K             |
|                | 35  | 13,7%          | 2600K             |
|                | 45  | 17,6%          | 2800K             |
|                | 55  | 21,6%          | 3000K             |
|                | 65  | 25,5%          | 3200K             |
|                | 75  | 29,4%          | 3400K             |
|                | 85  | 33,3%          | 3600K             |
|                | 95  | 37,3%          | 3800K             |
|                | 105 | 41,1%          | 4000K             |
|                | 115 | 45,1%          | 4200K             |
|                | 125 | 49,0%          | 4400K             |
|                | 135 | 53,0%          | 4600K             |
|                | 145 | 56,9%          | 4800K             |
|                | 155 | 60,8%          | 5000K             |
|                | 165 | 64,7%          | 5200K             |
|                | 175 | 68,6%          | 5400K             |
|                | 185 | 72,6%          | 5600K             |
|                | 195 | 76,5%          | 5900K             |
|                | 205 | 80,4%          | 6100K             |
|                | 215 | 84,3%          | 6300K             |
|                | 225 | 88,2%          | 6500K             |
|                | 235 | 92,2%          | 7500K             |
|                | 245 | 96,1%          | 8800K             |
|                | 255 | 100%           | 10000K            |



---

**SGM LIGHTING APS**

Sommervej 23

8210 Aarhus V

Denmark

Tel: +45 70 20 74 00

[info@sgmlighting.com](mailto:info@sgmlighting.com)

[www.sgmlighting.com](http://www.sgmlighting.com)