

INSTALLATION INSTRUCTION

DPI TUNABLE WHITE

A2S-XX-CTWT

SAFETY INSTRUCTION

IMPORTANT: NEVER attempt any work without shutting off the electricity.

- Always turn off power at fuse box prior to installation to prevent electrical shock.
- Intended for indoor use. Dry and damp locations.
- Install in accordance with national electric code, and local regulations.
- Consult with local inspector to assure compliance.
- Do not submerge, or install within 5 feet of a swimming pool.
- Do not connect the DPI directly to high voltage power

CAUTION – TO REDUCE RISK OF FIRE AND ELECTRICAL SHOCK

- Read all instructions before installing.
- Handle product with care.
- Do not conceal or extend exposed conductors through a building wall
- To reduce the risk of fire and burns, do not install this lighting system where the exposed bare conductors can be shorted or contact any conductive materials
- To reduce the risk of overheating and potential fire risk, make sure all connections are tight.
- Do not install any fixture assembly closer than 6 in. from any curtain, or similar combustible material.
- Do not modify or disassemble product beyond instructions or warranty will be void.
- Failure to follow safety warnings, and installation instruction will void the warranty

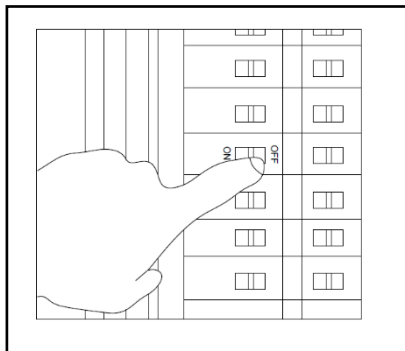
ATTENTION - AFIN DE RÉDUIRE LES RISQUES D'INCENDIE ET DE CHOC ÉLECTRIQUE

- Lire toutes les instructions avant d'installer.
- Manipuler le produit avec soin.
- Ne pas dissimuler et faire passer les conducteurs exposés à travers un mur de bâtiment.
- Afin de réduire les risques d'incendie et de brûlures, ne pas installer ce système d'éclairage là où les conducteurs dénudés peuvent être court-circuités, ou entrer en contact avec des matériaux conducteurs.
- Afin de réduire le risque de surchauffe et d'incendie potentiel, s'assurer que toutes les connexions sont bien serrées.
- Ne pas installer aucun luminaire à moins de 6 pouces d'un rideau ou d'un matériau combustible similaire.
- Ne pas modifier ou démonter le produit au-delà des instructions sous peine d'annuler la garantie.
- Ne pas respecter les avertissements de sécurité et des instructions d'installation annulera la garantie.

WIRING AND INSTALLATION:

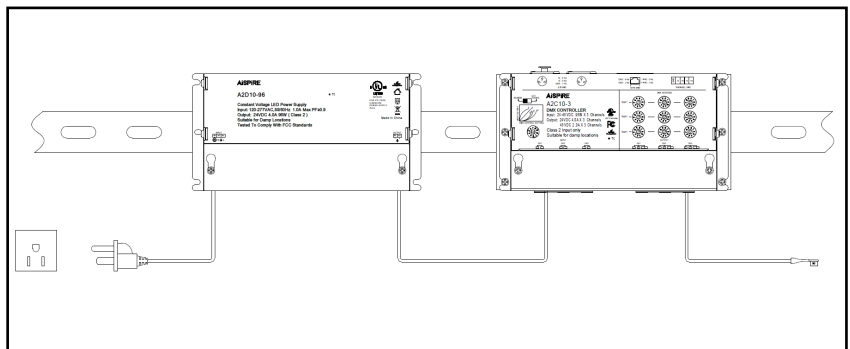
1. Turn Power off at circuit breaker (See FIG. 1)

FIG. 1



2. Mounting 24VDC Class 2 remote power supply and AISPIRE DMX LED Controller at desired location. (See FIG. 2)

FIG. 2



3. Measured a distance between power supply and DMX controller to the beginning of the DPI run. Choose between two options below to wire the power and data communication to the DPI. When choosing wire, factor in voltage drop, amperage rating, shield/unshielded, and type (in-wall rated).

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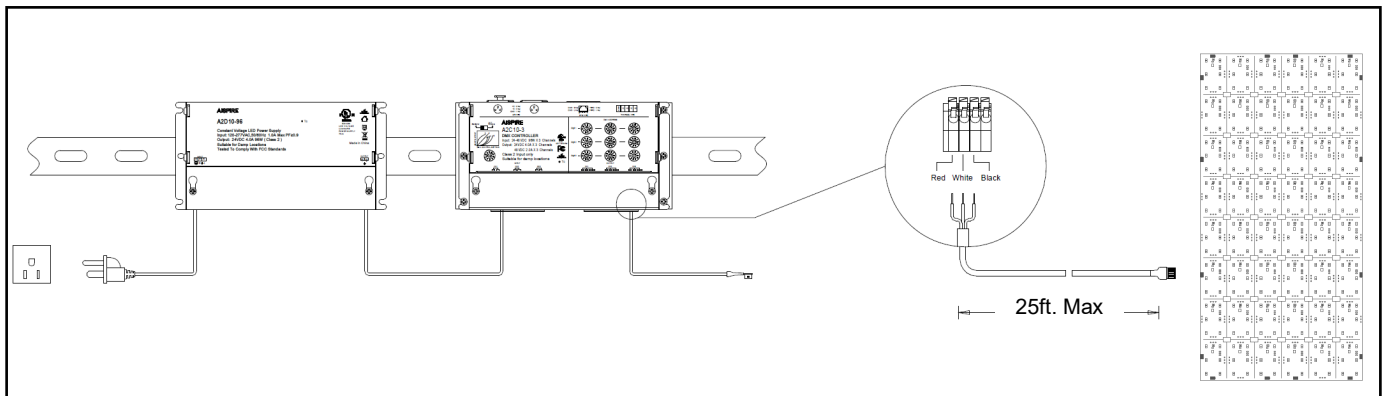
Option A: Unshielded Cable 25 ft. maximum distance between power supply to the beginning of the DPI

The AISPIRE In wall rated 20 AWG unshielded cable can be used to wire between a power supply-DMX LED Controller to the beginning of the DPI up to 25 ft. Smaller gauge wire number (bigger conductor) can be used, but the maximum run length limitation remains at 25 ft. due data communication distortion if it's run over 25 ft. (See FIG. 3) Wire color connection is shown in Table 1.

Table. 1

Wire Color Connection		
DMX LED Controller Terminal Color	A2L03 Cable	DPI marking
RED	RED	V+
WHITE	WHITE	DAT
BLACK	BLACK	V-

FIG. 3



Option B: Shielded data Cable 90 ft. maximum distance between power supply to the beginning of the DPI

A shield data cable shall be used to connect between the power supply-DMX LED Controller to the beginning of the DPI up to 90 ft. (See FIG. 4) ICE cable model number: Control Yellow is recommended. Product information can be found below:

<https://www.icecable.com/products/control-yellow>

https://icecable.s3.amazonaws.com/uber_products/specs/000/000/078/original/Control_Yellow.pdf?1435595602

For Plenum spaces, ICE cable Control Yellow Plenum is recommended. <https://www.icecable.com/products/control-yellow-plenum>

Both drain and common conductor wires shall be connected to a black terminal of DMX LED Controller. Another end shall be connected to the black wire of connector cable. The signal conductor shall be connected to the white terminal of DMX LED Controller. Another end shall be connected to the white wire of connector cable. The power carrying cable can be used either shielded or unshielded cable. The bigger conductor yields less voltage drop. The +24VDC polarity shall be connected to the red terminal on DMX LED Controller. Another end shall be connected to the red wire of connector cable. The -24VDC or common conductor wire shall be connected to a black terminal of DMX LED Controller. Another end shall be connected to the black wire of connector cable. (see FIG. 5)

A2L15-WL (5-3 low voltage wiring box) may be used to connect between 5 wires of shield cable to 3 wires of DPI connector.

FIG. 4

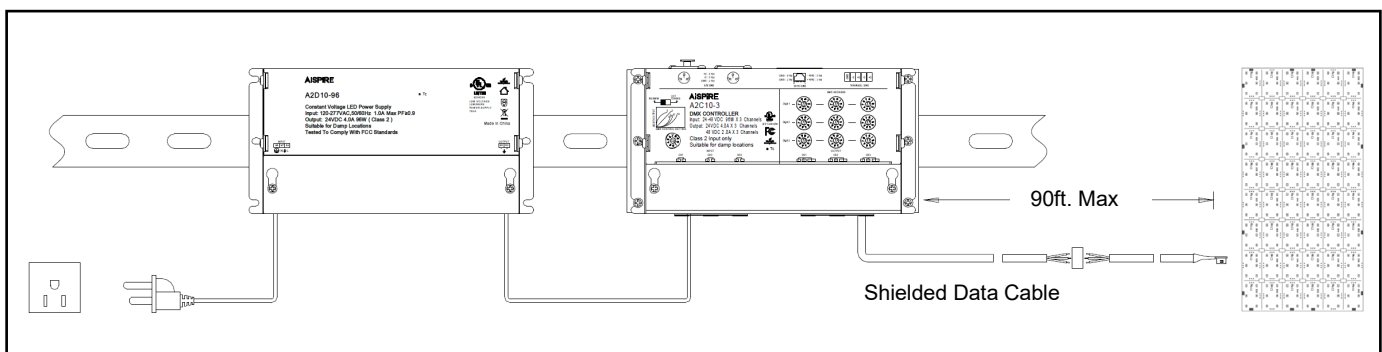
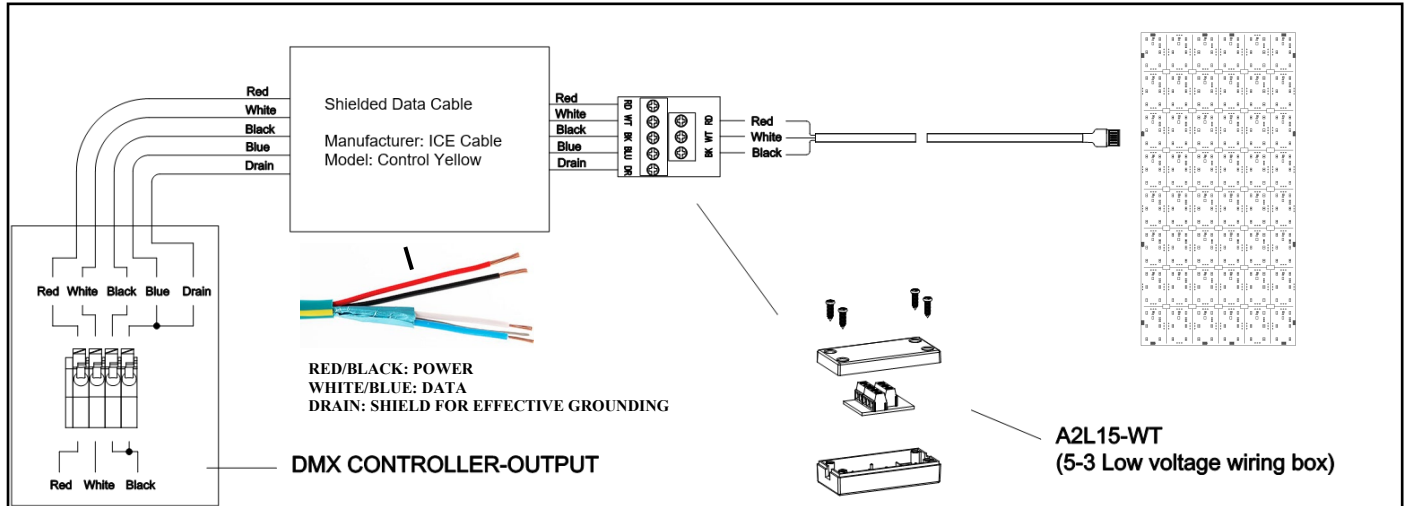
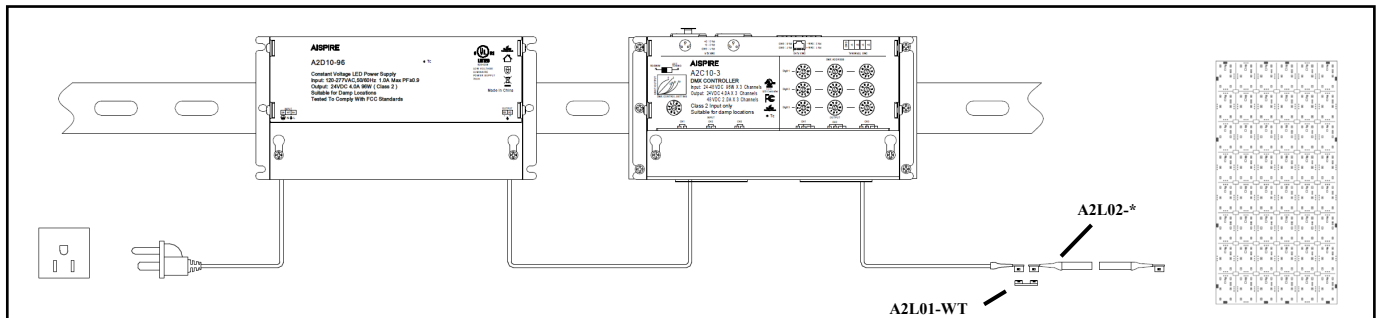


FIG. 5



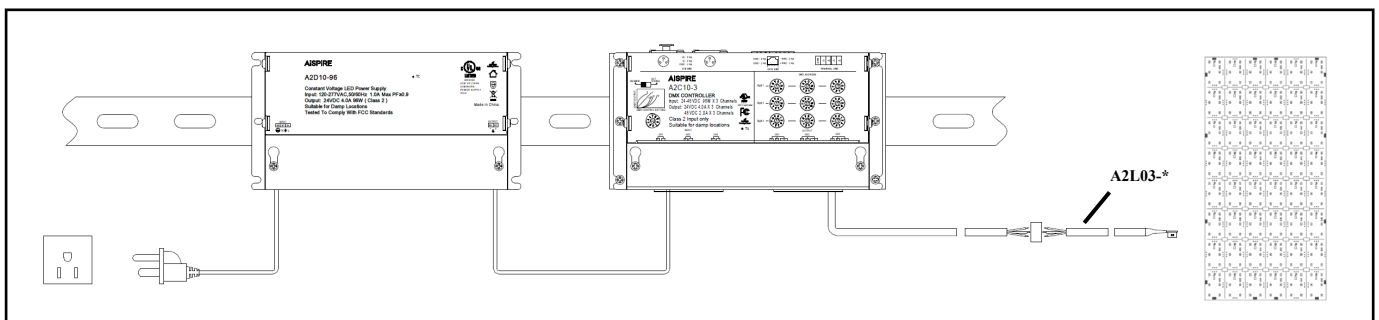
- To extend an unshielded cable length (if needed), In Wall Rated Joiner Cable (A2L02) and Joiner Cable Extender (A2L01-WT) can be used to join between sections as shown in FIG. 6

FIG. 6



- To extend the cable length between DMX LED controller cable or a wiring box to a DPI sections, (if needed), In Wall Rated Extension cable (A2L03) can be used to join between sections by soldering as shown in FIG. 7. Wire color connection is shown in the Table 1.

FIG. 7



- Measure the desired area of DPI light and determine necessary quantities of other accessories and power supply need for each run.
- Determine the maximum power per square foot according to specific CCT range as shown in reference Table 2 & 3. A lower light output can be adjusted by lowering DMX value in the same ratio to keep the same CCT.
Note: Setting the maximum DMX value at lower number will increase the maximum coverage area as the DPI consume less power.

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Table 2. : A2S-05-CTWT

CCT(K)	Current(A)	Power(W)	Lumen		DMX Value			
					CH1: 1800K	CH2: 2700K	CH3: 5000K	CH4:18/27/50
1800K	0.53	12.7	354		255	0		255
1900K	0.58	14.0	449		255	6		255
2000K	0.62	14.8	490		255	20		255
2100K	0.67	16.1	582		255	70		255
2200K	0.73	17.5	693		170	255		255
2300K	0.67	16.2	614		75	255		255
2400K	0.64	15.3	560		35	255		255
2500K	0.60	14.3	496		9	255		255
2600K	0.56	13.5	448		1	255		255
2700K	0.54	12.8	405		0	255	0	255
2900K	0.56	13.5	460			255	1	255
3000K	0.58	14.0	500			255	5	255
3100K	0.60	14.5	536			255	12	255
3200K	0.62	14.9	570			255	22	255
3300K	0.65	15.6	625			255	45	255
3400K	0.68	16.3	682			255	80	255
3500K	0.70	16.9	730			255	120	255
3600K	0.74	17.8	803			255	200	255
3700K	0.76	18.3	844			255	255	255
3800K	0.73	17.4	780			165	255	255
3900K	0.70	16.8	735			115	255	255
4000K	0.68	16.3	696			80	255	255
4100K	0.65	15.7	652			50	255	255
4200K	0.63	15.2	615			30	255	255
4300K	0.62	14.8	590			20	255	255
4400K	0.61	14.6	574			15	255	255
4500K	0.59	14.2	546			8	255	255
4600K	0.58	14.0	530			5	255	255
4700K	0.57	13.7	507			2	255	255
4800K	0.56	13.5	494			1	255	255
5000K	0.54	12.9	444			0	255	255

Any CCT or CCT mixing in between will maintain the light output as long as the DPI voltage is higher than 20.4VDC. The light output (Lumens) starts to degrade as a DPI voltage gets lower as shown in FIG. 9

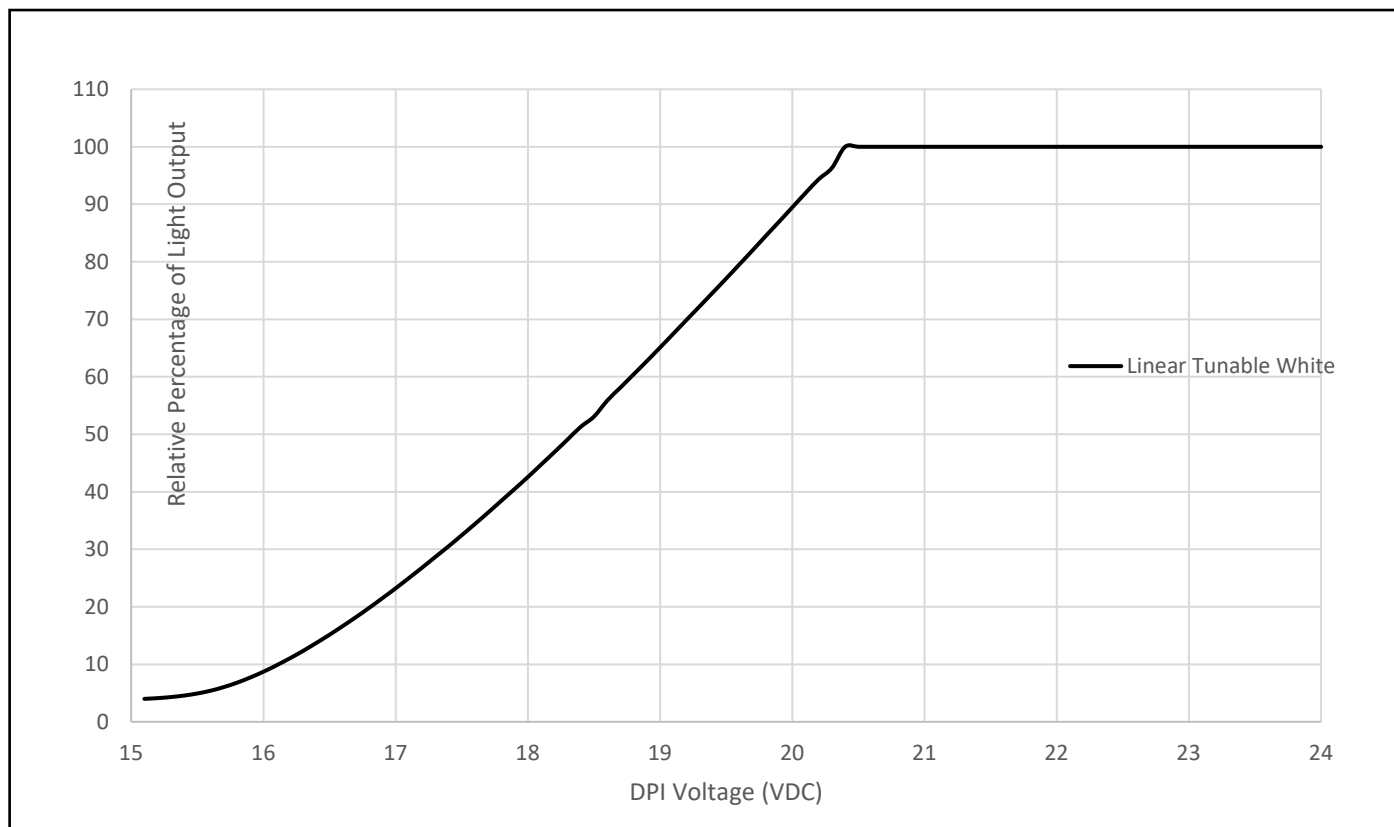
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Table 3. : A2S-10-CTWT

CCT(K)	Current(A)	Power(W)	Lumen		DMX Value			
					CH1: 1800K	CH2: 2700K	CH3: 5000K	CH4: 18/27/50
1800K	0.82	19.7	779		255	0		255
1900K	0.94	22.5	982		255	6		255
2000K	1.01	24.1	1103		255	20		255
2100K	1.12	27.0	1310		255	70		255
2200K	1.25	30.1	1559		170	255		255
2300K	1.13	27.2	1378		75	255		255
2400K	1.05	25.3	1256		35	255		255
2500K	0.96	23.0	1112		9	255		255
2600K	0.89	21.2	1004		1	255		255
2700K	0.82	19.7	909		0	255	0	255
2800K	0.80	19.3	1119			236	12	255
2900K	0.89	21.3	1032			255	1	255
3000K	0.93	22.3	1120			255	5	255
3100K	0.97	23.4	1201			255	12	255
3200K	1.01	24.3	1276			255	22	255
3300K	1.08	25.8	1398			255	45	255
3400K	1.14	27.4	1522			255	80	255
3500K	1.20	28.7	1627			255	120	255
3600K	1.28	30.8	1792			255	200	255
3700K	1.33	31.9	1884			255	255	255
3800K	1.25	30.0	1739			165	255	255
3900K	1.19	28.6	1639			115	255	255
4000K	1.14	27.4	1553			80	255	255
4100K	1.09	26.1	1456			50	255	255
4200K	1.04	25.0	1373			30	255	255
4300K	1.01	24.2	1317			20	255	255
4400K	0.99	23.7	1283			15	255	255
4500K	0.95	22.9	1223			8	255	255
4600K	0.93	22.4	1189			5	255	255
4700K	0.90	21.7	1135			2	255	255
4800K	0.89	21.3	1107			1	255	255
4900K	0.80	19.3	1248			15	235	255
5000K	0.80	19.3	1252			10	240	255
5100K	0.82	19.8	994			0	255	255

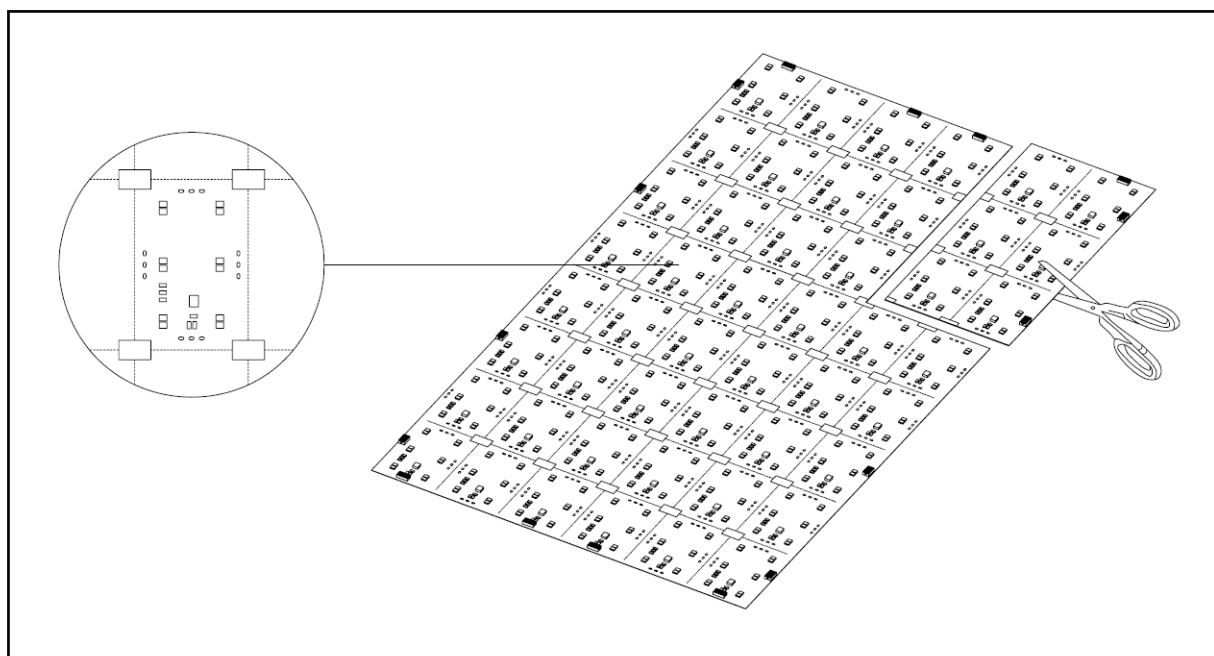
Any CCT or CCT mixing in between will maintain the light output as long as the DPI voltage is higher than 20.4VDC. The light output (Lumens) starts to degrade as a DPI voltage gets lower as shown in FIG. 9

FIG. 9



8. Follow the dotted line cutting guides and cut the DPI to desired size. DPI is field cuttable vertically or horizontally anywhere to a group of six LEDs increment (**Fig.10**).

FIG. 10



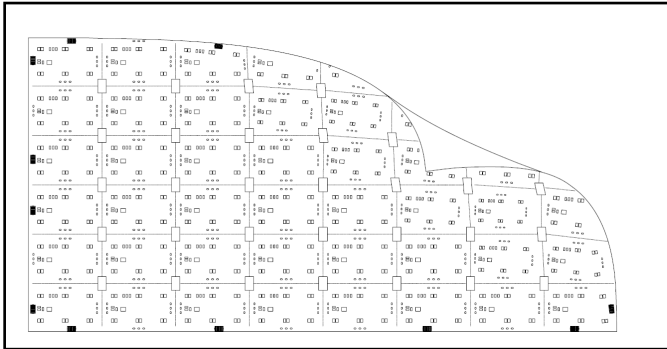
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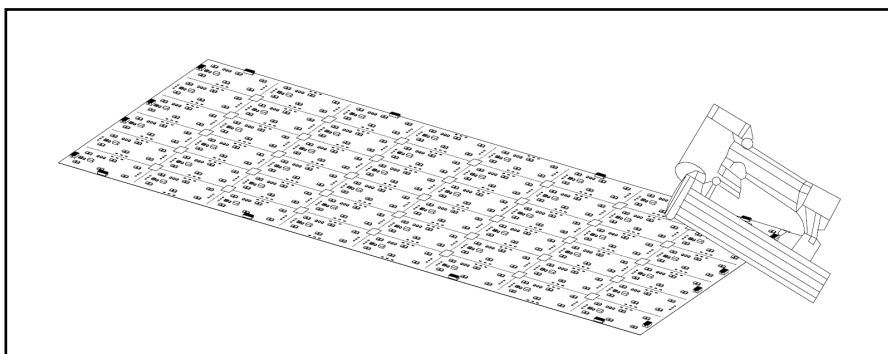
9. DPI is flexible and is adaptable for flat or curved surfaces. The included 3M adhesive is sufficient in most applications for smooth surfaces (see FIG. 11)

FIG. 11



If mounting surface is a porous or textured surface, a staple gun or nails may be required to secure the DPI after wiring (See Fig. 12)

FIG. 12



10. Joining between DPI Tunable lights

the following accessories can be used to join between DPIs section depending on your application:

Joiner Cable 2" & 6" (A2L14-XXX-WT), See FIG. 13

I Connector (A2L04-WT), See FIG. 14

FIG. 13

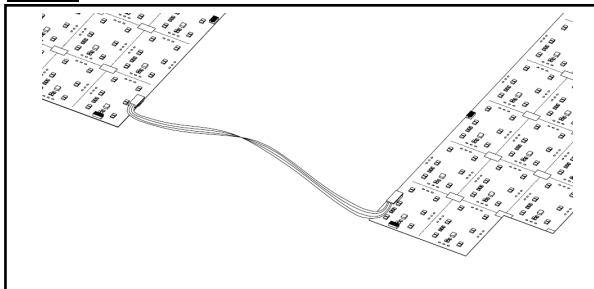
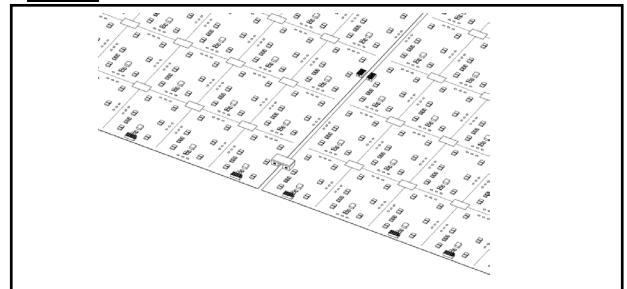


FIG. 14



T Connector (A2L06-WT), See FIG. 15

X Connector (A2L07-WT), See FIG. 16

FIG. 15

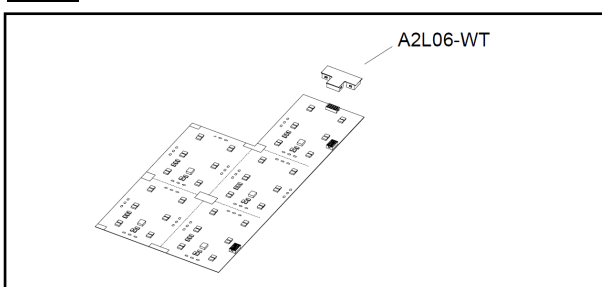
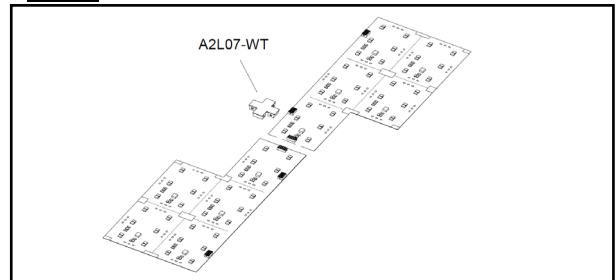
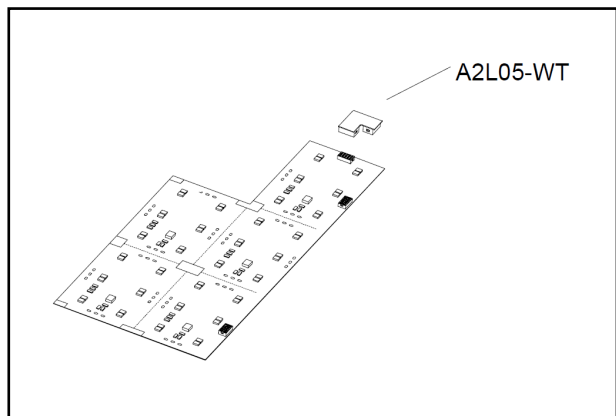


FIG. 16



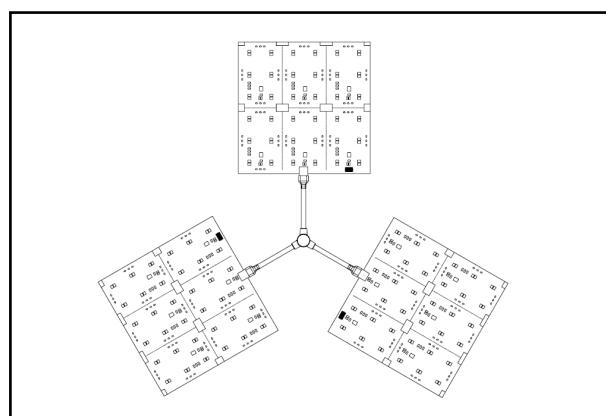
L Connector (A2L05-WT), See FIG. 17

FIG. 17



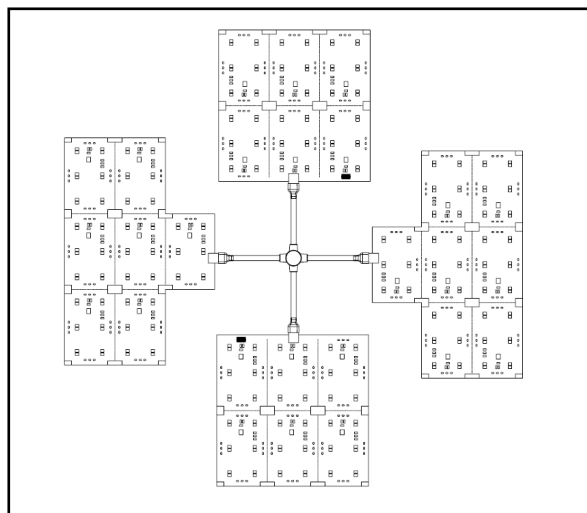
Flex Y Connector (A2L08-WT), See FIG. 18

FIG. 18



Flex X Connector (A2L09) , See FIG. 19

FIG. 19

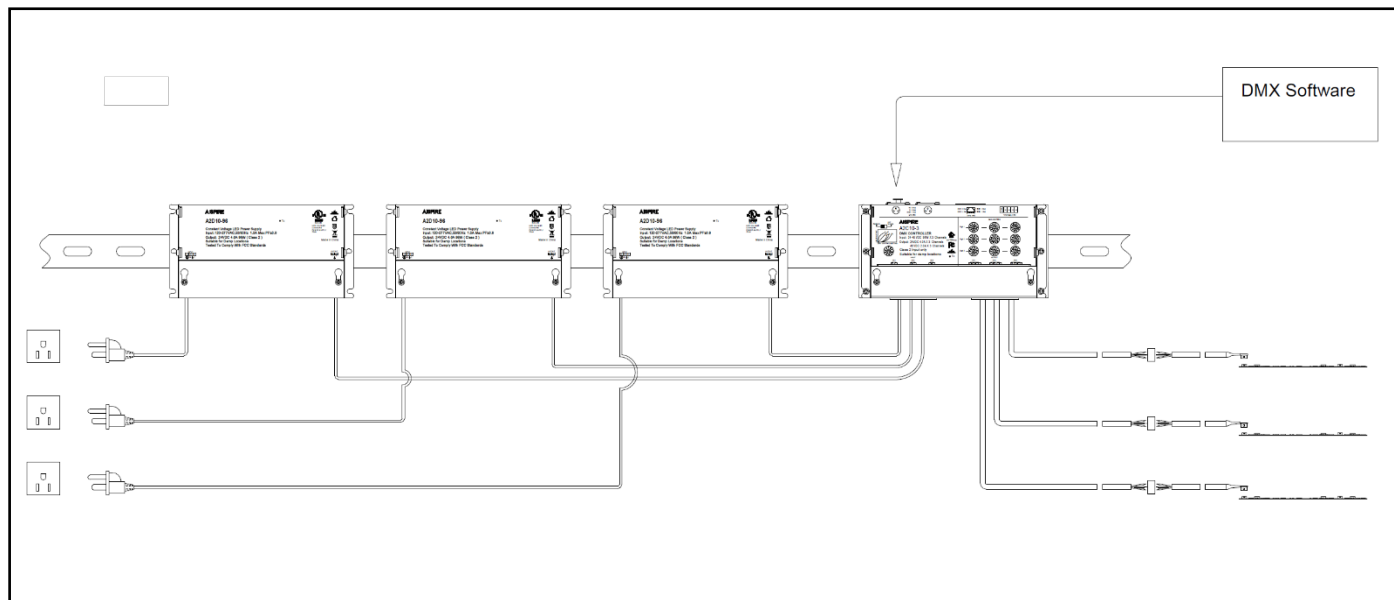


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SYSTEM DIAGRAM:

DPI Tunable White shall be used with AISPIRE DMX LED Controller at all times. Using other DMX controller brands will result in losing an ability to control DPI Tunable White light. The following diagram is provided as example system design. (See FIG. 21)

FIG. 20



Symptom

Common Cause and Solution

Light Output turns on/off repeatedly or flashing

The DPI Tunable White consume too much power than a capacity of power supply. AISPIRE power supply has an overload protection that will trip the internal auto-reset. Exceeding power capacity will repeatedly reset the power supply until an overload condition is removed.

Light output flashes wildly with different CCT

The data signal communication between DMX LED Controller and DPI Tunable White has a high distortion due to a long run of wires between Power Supply-DMX LED Controller and DPI Tunable White. The shield data cable is recommended to use to maintain a good quality data signal. Reducing the run length between DMX LED controller to the DPI Tunable White will help solving the problem.

**No light from one section of DPI /
Light output flashes wildly with different CCT from one section of DPI**

The DPI Tunable White may be damaged due to high degree of bending angle and cause an electrical component soldering on the DPI to crack and lose electrical connection. To solve this issue quickly is by cutting and remove that section out.

**Light output at the end of the run is dim
High contrast between beginning and the end of run.**

This is the voltage drop effects. Using a thicker conductor wire or smaller gauge wire number yields less voltage drop and boost light output up.
Another way is to lower a maximum DMX value to reduce the current consumption to DPI Tunable White. Thus, a contrast between beginning and the end of DPI run will be smaller.

Make sure that no ELV/TRIAC dimmer is connected to power supply. DPI Tunable White is only control through DMX LED Controller

DPI Tunable White light overheats

Incorrect voltage pairing, ensure 24V DPI Tunable White light are not paired with a power supply with higher voltage
Incorrect ambient temperature. Ensure DPI is installed in environment -4° - 104°F (-20°C - 40°C)
Lower the maximum light output down to acceptable ranges.

DPI Tunable White does not illuminate

Power Supply Failure, using voltage meter to check.
Incorrect wiring, polarity of positive and negative are reversed.
Incorrect DMX Channel setup, Check the DMX channel setup and properly activate the right channel.

Sudden Loss control over DPI Tunable White Light

This scenario may happen when you lose control over DPI Tunable White suddenly as you ramp up the brightness or increase the power to the DPI. This cause by a combination of voltage drop and data quality loss.
To regain control over DPI light, please remove the power to the DPI, lower the DMX value, and use shield data cable. Make sure that both common and drain wires are all connected on both ends.
Or reduce the run length between DMX LED controller to the DPI.

Unable to light up all 3 CCTs (1800K, 2700K, 5000K) at the same time

This feature has been designed in the DMX LED Controller A2C10-3 to prevent an overflow of power to DPI Tunable White that will cause an overheat. Thus, only two CCTs can be on at the same time by turning off one of CH1 to CH3 to zero. CH1 (1800K) has highest priority. CH2 (2700K) has second priority and CH3 (5000K) is at last.