

LED LINEAR & SYSTEMS LUMINAIRES

advanced systems

**STRATEGIC
LIGHTING
GROUP**
LIGHTING WITH PURPOSE

ARCHILED MONO
TECHNICAL SPECIFICATION DATA

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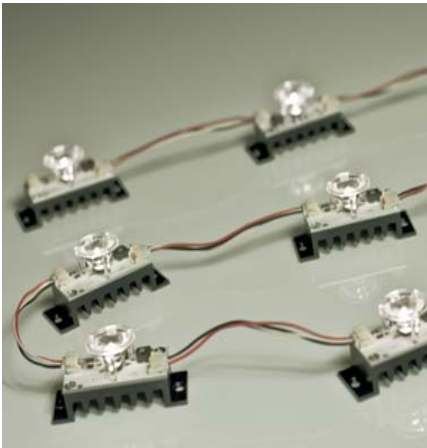
ARCHILED LINKS MONO

monochromatic - circuit dimmable

Image Project : Cocoon - Darwin Centre , NHM London-



Lighting Design : Sutton Vane Associates - London



Product Purpose & Meaning

- The Archiled *Links series* concept is founded on its ability to offer professional PowerLED boards with MacAdam colour consistency , pitch flexibility, interchangeable optics and the ability to resolve curved as well as straight line architecture alike.
- The name "Archiled" is derived from the products ability to follow and delineate interior architectural structure.

Product Summary

- A dimmable 'daisy chain' link plug and lead light system for fast, easy reliable quick connections of 'strings' of professional power LED boards, with proper heat sinks.
- Can be supplied with 1.0m flexible curved PVC mounting channel for easy installation or supplied at extra charge pre-mounted by factory.
- Mono-chromatic single colour. RGB version - see page 112
- Inter-changeable optics from Elliptical, 10, 25 or 40°.
- Especially ideal for curved architecture & rebates.
- For CV - constant voltage - 24Vdc bulk PSU's for easy labour saving parallel wiring.
- Suitable for connections in series of 20 boards at a time before a new parallel feed is required.

Applications

- Especially Curved Architectural Details.
- Coving, Recesses, Ceiling Pelmet & Soffits.
- Window Reveals & Frames / Ground Troughs & Channels.
- Backlighting, Curved Furniture Recesses, Reception Desks.
- Ballustrading & Signage.

Performance

Lamp Type	3W PowerLED.
LED Qty	1 per board.
Lamp Source	P4 Chip Seoul Semi Con - U1 Bin.
Lumen Output	170lms - White 5500K.
Lamp CRI	93 - White 3000K / 4000K.
Colour Quality	Binning to 1 MacAdam Ellipse - 100K
LED Life	50.000hrs [IEC electronic parts default]
Optic Beams	Narrow 10°, Medium 25°, Med Wide 40°, Elliptical Wall Wash [15°x60°] Wide c.130° [No Optic].
LED Colours	Monochromatic: White [Warm, Neutral, Cool] Blue, Red, Green [For RGB - See Page 112]

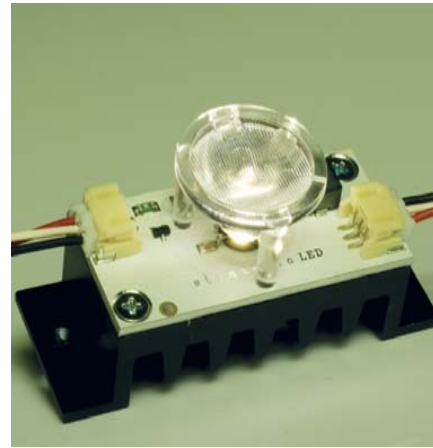
Electrical Data

Voltage	24Vdc input.
Load Watt	3W.
Load Current	700mA.
Remote Gear Configuration	24Vdc Power Supply Unit [PSU]. CV [Constant Voltage]. PCB on board CC [current controller].
Dimming	Via a supplied 3rd 'White' Cable to on-board current controller [Interface required].
Data Protocol(s)	Dimming Via:- Push-button [switch] 0-10V analogue DMX or DALI

LIGHTING DESIGNERS TOOL OF CHOICE

Colour Consistency :
1 MacAdam Ellipse

IP20



Description

A lighting designers professional tool with the latest maximum lumen output 3W dimmable power LED's mounted on professional grade high quality calibrated heat sinks for true 50,000hr long-life. Made for quick & easy plug & socket link-chain mounting in linear arrays with direct easy bulk 24Vdc SELV [Safe Extra Low Voltage] powering. Optional flexible PVC curved mounting channel for quick install - see accessories. Ideal for internal applications of ceiling pelmets, alcoves, architectural soffits, floor troughs and internal architectural fabric. Wide-flood of 130° or with additional push-fit optics of Elliptical wall-wash 15°x60°, Narrow 10°, Medium 25° & Wide 40°. Variable cable connectors and spacing centres allows true infinite flexibility. Bulk PSU (Power Supply Units) for easy remote gear installation. Full photometrics available. Holes for screw fixing, flat resin bonding or nut locking in PVC mounting channel where specified. A Lighting Designers Tool of Choice.

Construction & Finishes

- Printed Circuit Board - finished white
- Extruded aluminium heat sink - anodised black finish
- Clear optical lenses - Acrylic pmma

Main Features

- Benefits multiples of 20 unit chains linked in series [for connection chains from typical 2 to 4 metres] [thereafter new parallel power joint connection] [signal dimming cable may pass through all boards]
- MacAdam colour consistency to 1 Ellipse <100K.
- Bulk 30 metre remote 24Vdc PSU transforming.
- Easy quick Install - with Plug & Play connectivity.
- On board dimming via any protocol language - benefits only one interface required.
- High output / high bin quality Power LED.
- Curved & irregular shaped installations possible.

Mounting

- M3 holes for screw fixing or flat resin bonding or for attachment to flexible PVC mounting channel accessory - see page overleaf.
- 3 Core Connectors Live [Red] & Neutral [Black] power feeds. A 3rd integrated middle data dimming cable [White] & associated circuitry exist

Connection Diagrams 1.1 & 1.2

- Connection is for CV - Constant Voltage for use with remote 24Vdc PSU [Power Supply Unit] from 15 to 30 metres distance.
- See Connection Diagram over pages

Standard Colours

- Warm White - 3000K - CRI = 93%
- Neutral White - 4000K - CRI = 93%
- Cool White - 5500K - CRI = 80%
- Royal Blue - 457nm
- Red - 625nm
- Green - 525nm

LED DEDICATION **CONSTANT VOLTAGE**

Image Project : Dorchester Spa - Beauty Treatment Rooms
Lighting Design : Light + Design Associates- London



Flexible track channel for quick and easy assembly



Photograph : Lynn Sammonds Photography

Product Order Codes

130°

No Optic

Wide 130°		Archiled monochromatic [colours below] link-board unit with - No Optic - Wide Open to 130°.				
<div></div>	<div>ARC.M3.NO</div>	CRI = 93	White 3000K	1/3W	- 72/126lm	No Optic - 126°
	<div>ARC.M4.NO</div>	CRI = 93	White 4000K	1/3W	- 76/133lm	No Optic - 126°
	<div>ARC.M5.NO</div>	CRI = 80	White 5500K	1/3W	-100/170lm	No Optic - 127°
	<div>ARC.MB.NO</div>	457nm	Blue	1/3W	- 22/39lm	No Optic - 130°
	<div>ARC.MR.NO</div>	625nm	Red	1/3W	- 48/84lm	No Optic - 130°
	<div>ARC.MG.NO</div>	525nm	Green	1/3W	- 70/123lm	No Optic - 130°

130°

No Optic

15x60°

Elliptical°

Elliptical°		Archiled monochromatic [colours below] link-board unit with - Elliptical Optic - Wall Wash 15° x 60°.				
<div></div>	<div>ARC.M3.EL</div>	CRI = 93	White 3000K	1/3W	- 72/126lm	Elliptical 15°x60°
	<div>ARC.M4.EL</div>	CRI = 93	White 4000K	1/3W	- 76/133lm	Elliptical 15°x60°
	<div>ARC.M5.EL</div>	CRI = 80	White 5500K	1/3W	-100/170lm	Elliptical 15°x60°
	<div>ARC.MB.EL</div>	457nm	Blue	1/3W	- 22/39lm	Elliptical 15°x60°
	<div>ARC.MR.EL</div>	625nm	Red	1/3W	- 48/84lm	Elliptical 15°x60°
	<div>ARC.MG.EL</div>	525nm	Green	1/3W	- 70/123lm	Elliptical 15°x60°

10°

10°

Narrow 10°		Archiled monochromatic [colours below] link-board unit with - Narrow Optic - 10°.				
<div></div>	<div>ARC.M3.10</div>	CRI = 93	White 3000K	1/3W	- 72/126lm	Narrow - 10°
	<div>ARC.M4.10</div>	CRI = 93	White 4000K	1/3W	- 76/133lm	Narrow - 10°
	<div>ARC.M5.10</div>	CRI = 80	White 5500K	1/3W	-100/170lm	Narrow - 10°
	<div>ARC.MB.10</div>	457nm	Blue	1/3W	- 22/39lm	Narrow - 10°
	<div>ARC.MR.10</div>	625nm	Red	1/3W	- 48/84lm	Narrow - 10°
	<div>ARC.MG.10</div>	525nm	Green	1/3W	- 70/123lm	Narrow - 10°

25°

25°

Medium 25°		Archiled monochromatic [colours below] link-board unit with - Medium Optic - 25°.				
<div></div>	<div>ARC.M3.25</div>	CRI = 93	White 3000K	1/3W	- 72/126lm	Medium - 25°
	<div>ARC.M4.25</div>	CRI = 93	White 4000K	1/3W	- 76/133lm	Medium - 25°
	<div>ARC.M5.25</div>	CRI = 80	White 5500K	1/3W	-100/170lm	Medium - 25°
	<div>ARC.MB.25</div>	457nm	Blue	1/3W	- 22/39lm	Medium - 25°
	<div>ARC.MR.25</div>	625nm	Red	1/3W	- 48/84lm	Medium - 25°
	<div>ARC.MG.25</div>	525nm	Green	1/3W	- 70/123lm	Medium - 25°

40°

40°

Med. Wide 40°		Archiled monochromatic [colours below] link-board unit with - Medium - Wide Optic - 40°.				
<div></div>	<div>ARC.M3.40</div>	CRI = 93	White 3000K	1/3W	- 72/126lm	Med Wide - 40°
	<div>ARC.M4.40</div>	CRI = 93	White 4000K	1/3W	- 76/133lm	Med Wide - 40°
	<div>ARC.M5.40</div>	CRI = 80	White 5500K	1/3W	-100/170lm	Med Wide - 40°
	<div>ARC.MB.40</div>	457nm	Blue	1/3W	- 22/39lm	Med Wide - 40°
	<div>ARC.MR.40</div>	625nm	Red	1/3W	- 48/84lm	Med Wide - 40°
	<div>ARC.MG.40</div>	525nm	Green	1/3W	- 70/123lm	Med Wide - 40°

Due to LED technology advances increased lumen packages can be readily anticipated.

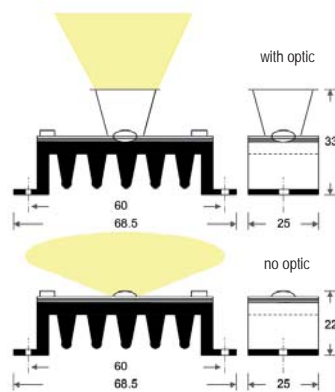
OPTIONAL EXTRA CODES

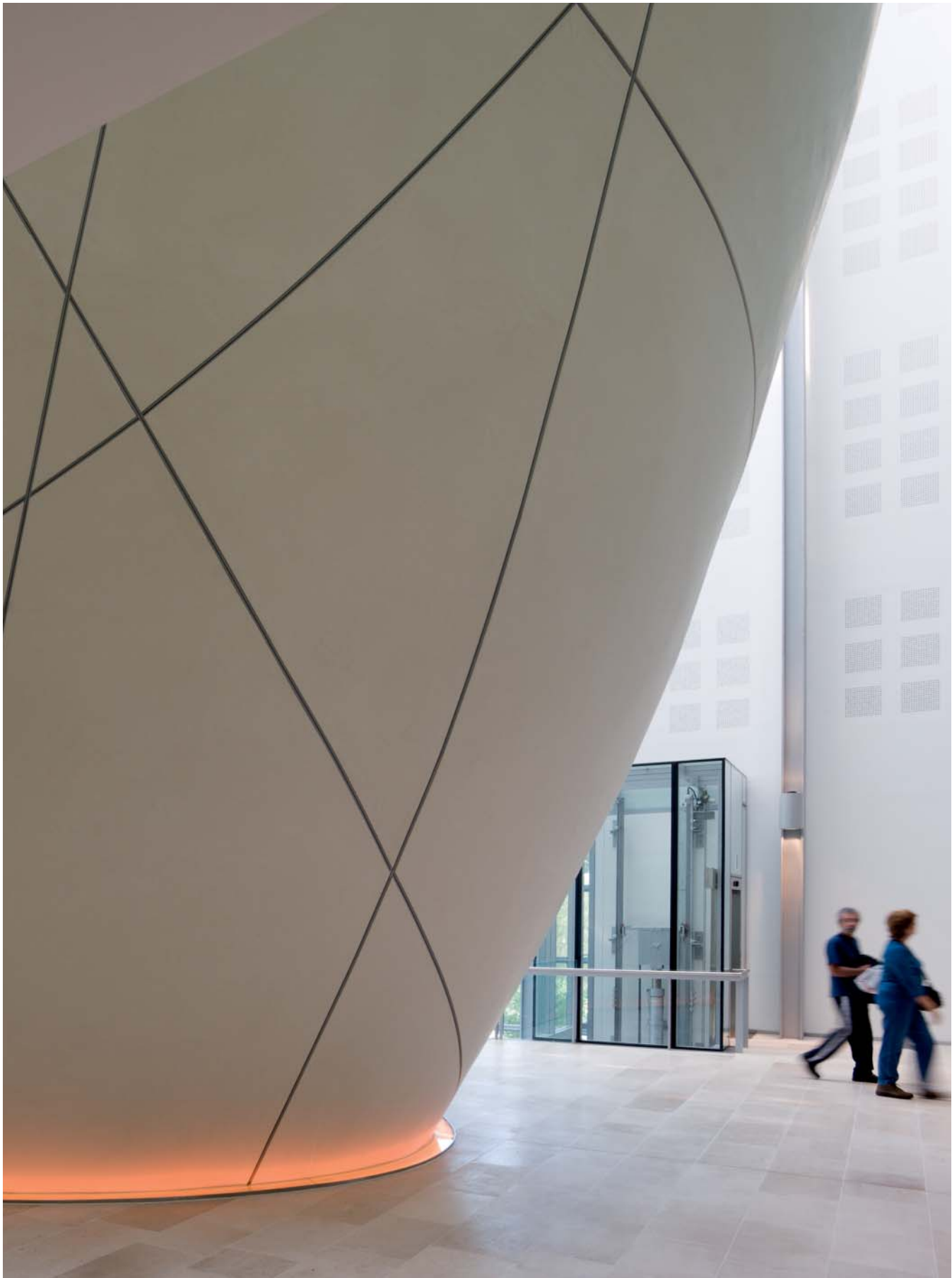
Liase with our sales department for detailing accessories and power supplies or refer to accessory page overleaf.

- Plug Connectors : 1. Select spacing and Link Plug Cable Connectors on Page 109.
Powering 2. Select Power Supply Units required with 10% spare capacity on full load on Page 109.
Control Signal 3. For dimming monochromatic refer to Control Interfaces on Page 109.

ARCHILED LINKS MONO

monochromatic - circuit dimmable





Project : Natural History Museum - Darwin Centre - Cocoon Building - Exterior Facade - Kensington, London.
Lighting Design : Sutton Vane Associates - London.

Accessories



Link Plug Cable Connectors			
Connector plugs to join Archiled boards in series. [Max 20pcs mono-chromatic] Select Pitch for design.			
ARC.CON.75	for 75mm LED Pitch	Circuit Dimmable	Connector L = 35mm
ARC.CON.100	for 100mm LED Pitch	Circuit Dimmable	Connector L = 60mm
ARC.CON.125	for 125mm LED Pitch	Circuit Dimmable	Connector L = 75mm
ARC.CON.150	for 150mm LED Pitch	Circuit Dimmable	Connector L = 100mm
ARC.CON.200	for 200mm LED Pitch	Circuit Dimmable	Connector L = 170mm
ARC.CON.250	for 250mm LED Pitch	Circuit Dimmable	Connector L = 220mm



PSU - 24Vdc Power Supply Units			
Standard Power Supply Units in 24Vdc enable bulk powering. Match to 110% of load or VA rating shown.			
PLC30.24S	30W	max 27Va Load	Dims:L230xW30xH25
PLC60.24M	60W	max 54Va Load	Dims:L159xW97xH38
PLC100.24M	100W	max 90Va Load	Dims:L199xW99xH45
SP150.24M	150W	max 135Va Load	Dims:L199xW110xH50
SP200.24X	200W	max 180Va Load	Dims:L199xW110xH50
SP240.24X	240W	max 216Va Load	Dims:L199xW110xH50
SP320.24X	320W	max 288Va Load	Dims:L215xW115xH50
SP500.24X	500W	max 450Va Load	Dims:L170xW120xH93
SP750.24X	750W	max 675Va Load	Dims:L278xW127xH64



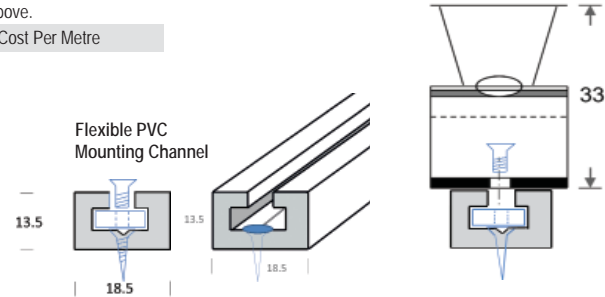
Control Interfaces			
Control Interfaces with PWM enable Archileds mono-boards 3rd cable to receive signalling for dimming.			
INT.CPBCV24	for control via	PUSH BUTTON	Circuit Dimmable
INT.OLCV24	for control via	0-10V analogue signal	Circuit Dimmable
INT.TLQ.CVDMX	for control via	DMX */ DALI signal	Circuit Dimmable



Flexible PVC Mounting Channel			
A light-weight flexible PVC channel with bend radii to 1.0metre allows bulk loading of Archiled units.			
ARC.MC1B	1 Metre Profile	Flexible Radi - 1.0metre	Finish Black
ARC.MC2B	2 Metre Profile	Flexible Radi - 2.0metre	Finish Black
POST-FIX CODES : FINISHES - To change finish "-B" [Black] substitute for : Clear "-C", for White "-W", for Aluminium "-A".			



Factory Fitted Mounting Channel - Cost Per Metre			
Factory loading of Archiled boards at extra cost on to 1.0metre flexible channel above.			
ARC.PVC.FF	1 Metre Profile	Factory fitted	Cost Per Metre



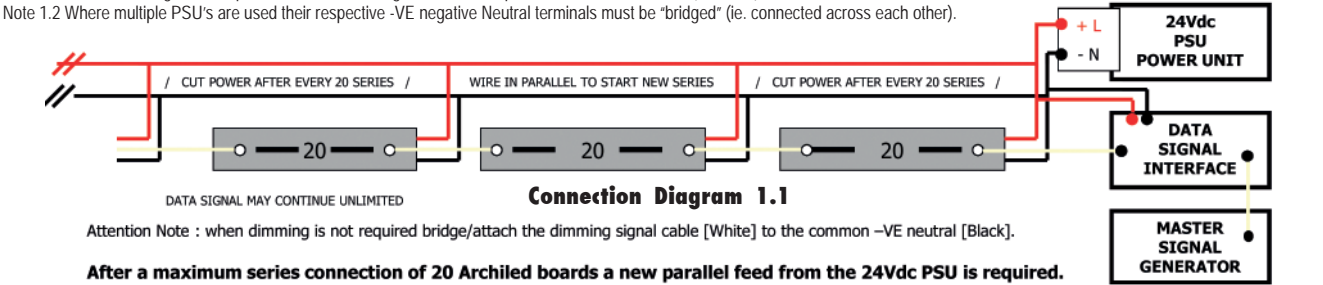
Connection Diagram 1.1

The diagram below shows how mono-boards are typically wired / cabled from the PSU & any dimming interface.

Archiled in monochromatic boards, given their load, current rating and amperage are able to plug connect 20pcs at a time in "series-type"connections. This is shown in the diagram as the symbol below o - 20 - o, after which a new parallel feed is required for the power. At 20pcs at a time on typical spacing of 100mm this means a new parallel feed every 2.0 metres. The dimming signal i.e "White" cable may continue indefinitely, unlimited in distance & number through the boards, although for wiring purposes the installer may find it easier to use multi-3-core cable and combine power and data, picking up new feeds together.

Note 1.1 Where dimming is not required the white dimming cable must be paired with the -VE Neutral (i.e Black) cable.

Note 1.2 Where multiple PSU's are used their respective -VE negative Neutral terminals must be "bridged" (ie. connected across each other).



Attention Note : when dimming is not required bridge/attach the dimming signal cable [White] to the common -VE neutral [Black].

After a maximum series connection of 20 Archiled boards a new parallel feed from the 24Vdc PSU is required.

ARCHILED LINKS MONO

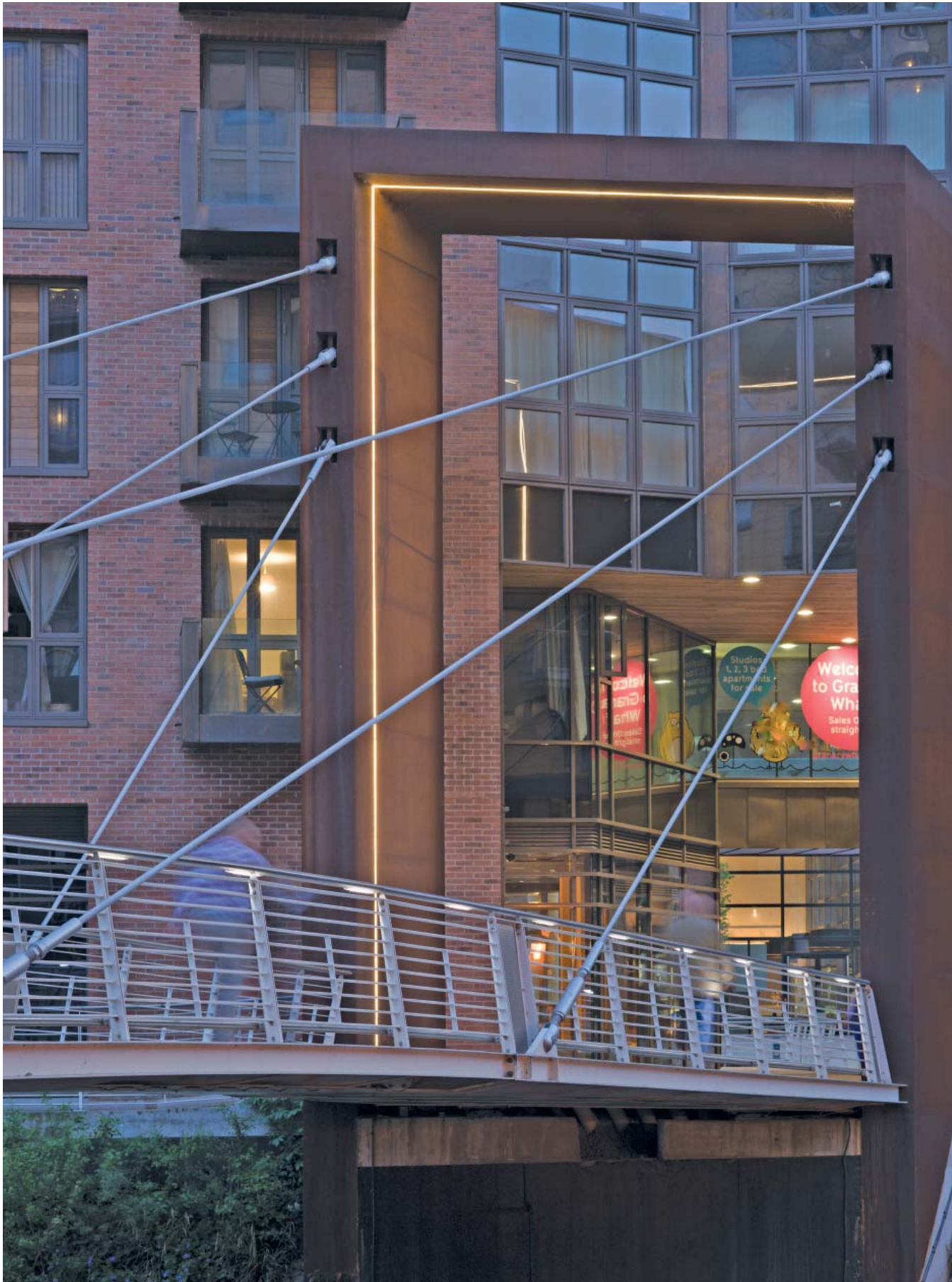
monochromatic - circuit dimmable

Connector & Pitch Notes: Default Pitch / spacing = 100mm
Plug connectors are used to join Archiled boards in series. [Max 20pcs for monochromatic type]. Select Pitch for design & specify correct plug connector. Uniformity is typically maintained at Pitch 100mm but depends on the optic. 10° narrow optics maintain uniformity at around 50mm spacing, whilst units with no optics, with wide open beams of c.130°, maintain uniformity to around 200mm spacing. Greater spacing reduces the number of units and achieves capital savings.

Power Supply Notes:
Archiled boards are powered by 24Vdc Power Supplies. Being "Constant Voltage" a "mini-driver" or "current controller" for 700mA rating at 3W output is integrated on the circuitry. Archiled also has integral relay circuitry to feed on 24V power for ease of wiring using the plug connectors above. This is done in a "series-link" type connection - up to a maximum of 20 units, after which the amperage is limited/insufficient and a new parallel feed is required. Each unit is rated at 3W and the load can be deciphered by the number of units per metre. Allow 10% spare capacity for performance. Power supplies should be no further than 30 metres away on 2.5mm² core cables. Greater distances can be achieved but please consult design team or volt drop guide Appendix B on page 323.

Interface Notes for dimming:
Archiled can be powered using just 1 bulk Power supply [given the load limits of the PSU's used]. Further since they have a separated signal cable commands only 1 signal interface is required for each dimming scene. Where dimming is not required the [White] Signal cable is paired with the [Black] Neutral -VE cable at the Power Supply. All standard dimming protocols can be used by the interface(s) to meet all needs.

Flexible PVC Mounting Channel: Default finish - Black
Archiled can as standard be flexibly positioned and be individually screw mounted or bonded to a surface. [The installer making up a standard spacing block for ease]. For greater ease, the specifier can specify a standard mounting channel in 1 of 4 finishes. Supplied in 1 or 2 metre lengths the boards can be pre-mounted & spaced by the installer & screw fixed in just 2 positions or bonded. Alternatively these can be factory prepared and fitted at extra cost.



Project : Granary Wharf, Leeds - Portico
Lighting Design : Steve Goater, SMG Lighting Design, Worcester - England.

ARCHILED LINKS MONO
monochromatic - circuit dimmable

Mounting, Design & Layout Guide

- 1) Uniformity
Uniformity and pitch is function of the lighting design [Intensity & Uniformity] . Uniformity holds until spacing max 100 - 250mm on LED's without optics, much less for LED's with narrow beams.
- 2) Pitch & Board Spacing
Common Pitch spacing is shown in Table 2.1 below. The default pitch is 100mm and respective plug connectors supplied being 60mm in length.
- 3) Planning Layout
In setting and laying out the boards it is recommended that the installer uses for ease a spacing block. The gaps between the link boards is as shown in Table 2.1. This table also shows the max. nos of boards per metre & the load.
- 4) Nos of boards in series.
A maximum of 20 mono Archiled link boards can be used in series, after which the boards must not be linked and a new parallel power feed attached. See Diagrams 1.1 & 2.2.
- 5) Power Connection
The boards are powered by Constant Voltage meaning the current controllers are already mounted on the PCB's. The PSU & direct 24V power feed can be attached straight to the boards. See Diagram 1.2 below.

- 6) Dimming
Dimming is via PWM but as a signal protocol direct to the current controllers on the PCB boards. Since the boards and plug cable connectors have an integrated 3rd dimming cable / circuit the signal cable can be left between all boards on a circuit. See Diagram 1.2.
- 7) Voltage Drop
Dimming can be achieved via an interface unit in most signal types from Push-Button to DMX etc. etc..... Note: when dimming is not required the Negative & Dimming cable should be wired together i.e. paired. A master controller or signal generator can be supplied on request.
- 8) Mounting
The boards should be screw fixed or securely bonded depending on the surface to fixed. A flexible PVC tray which can curve can be pre-assembled at the factory with the correct pitch for easy install. Other pre-mounted custom profiles and trays can be made and assembled to architectural needs for larger projects. Enquire on application.

Table 2.1 Common Mono Pitch Spacings & Wattages

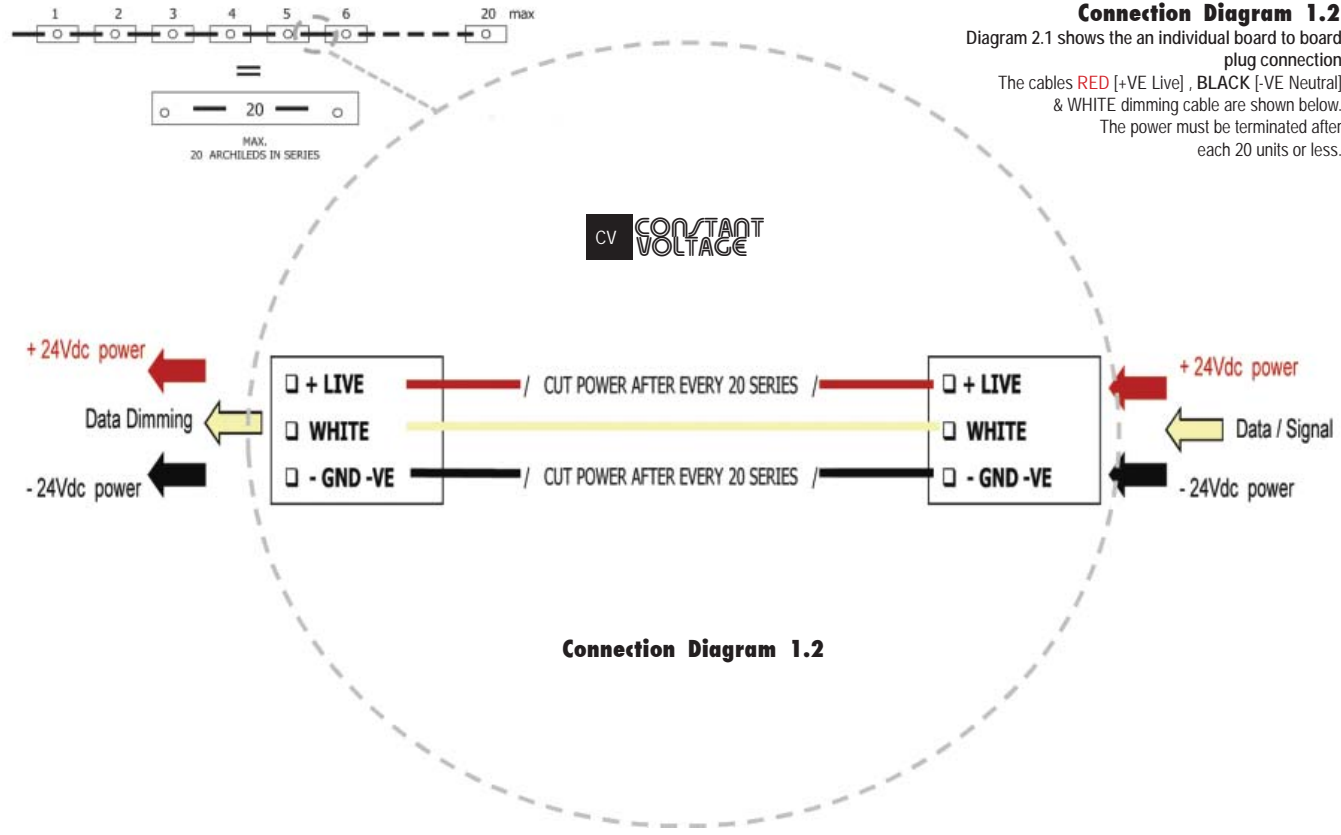
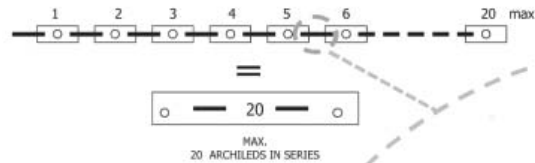
Table 2.1 shows the nominal standard pitch spacings, together with supplied connector length and how many unit boards this pitch equates to. It further explains the gap between boards and the relative load per metre in watts of power used. For example : LED's pitched at 100mm require an accessory connector length of 60mm, have 10 Archileds per metre [need a board spacing gap of 32mm] and consume 30W / per metre.

LED PITCH SPACING	Connector Length	Boards per / metre	Board Spacing Gap	Load Watts/metre
75mm	35mm	13.3	7mm	40W
100mm	60mm	10	32mm	30W
125mm	75mm	8	57mm	24W
150mm	120mm	6.7	82mm	20W
200mm	170mm	5	132mm	15W
250mm	220mm	4	182mm	12W

Table 2.2 Maximum Volt Drop Lengths

Table 2.2 shows the designer a guide max. distance length for sole cable loads based on the maximum volt drop / amperage for typical cable core sizes. This table is an approximation for designers and all volt drops should be verified by others. For example : LED's pitched at 100mm on 2.5mm core cables can have its PSU set back 14metres .

Cable Core Size [mm²]	Volt Drop Distance Max [mono boards] [Metres]			
	Pitch 100	Pitch 125	Pitch 150	Pitch 200
1mm²	8	10	11	13
2.5mm²	14	16	18	21
4mm²	18	21	23	26



LED LINEAR SYSTEMS

product pages start page 73

retail & leisure

LED LINEAR SYSTEMS

retail & leisure

product pages start page 105

NEON TYPE

MONO - 5W

Page 133

RGB - 5W-11W

Page 133



NEON LEDLINE - mono

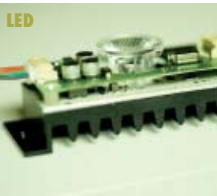


NEONLEDLINE - RGB

LINKS & CHAINS

POWERLED

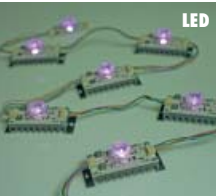
Page 119



ARCHILED LINKS - Chaser

RGB - 5.3W

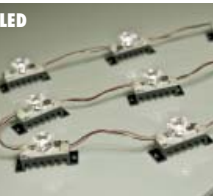
Page 113



ARCHILED LINKS - RGB

MONO - 3W

Page 107



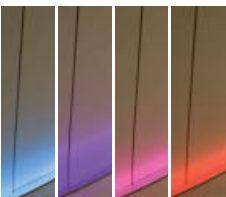
ARCHILED LINKS - mono

Page 120



MUSEUMS

Page 116



GROUND RECESSES

Page 114



ATRIA & STAIRWELLS

Page 104



FOOTBRIDGES

Page 108



FASCIAS

TUBULAR

Page 134



SCORRENTE

Page 103



AMBIENTALE

FLEXIBLE CONTINUOUS

Page 123



STRIPLED FLEXI - mono

Page 123



STRIPLED FLEXI - RGB

Page 129



SIDELED mono & RGB

Page 125



GLASS SHELVING

Page 130



BAR

Page 131



LANDSCAPE

Page 130



CEILING ALCOVES

Page 123



RGB COLOUR CHANGE

IN-GROUND MARKER

Page 139



XACOTO

Page 141



AIRPORT FLOORING