MDL Draft 1 - 25/02/2020

UCF Series TDS LED Array Signals

UCF (U Channel Frame) purpose made square or rectangular "U" channel frames for housing LED array Signal Arrrays.

External dimensions = 300 mm to 1200 mm (square, portrait or landscape).
Max overall size =1200 x 1200 mm – Min overall size= 300 x 300 mm
LED Array area is 50mm less in both directions for all sizes.

The variety of arrays and construction are diverse. For this reason every job & type will have a supplementary job or project data sheet as detailed below.
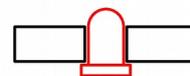
LED Arrays

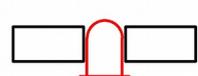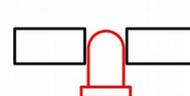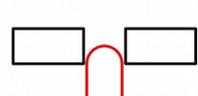|	
The LED arrays can be constructed in several ways.	PROJECTING DOMED
They can be mounted into the front sheet with the LED's projecting, domed, flush or recessed.	
Where Polycarbonate is used LED's can fit flush behind the front polycarbonate sheet.	FLUSH RECESSED
Symbols, text, shapes and signals can be easily configured.	

Construction

- Manufactured from Stainless Steel 1.2 mm (1.4301)or 1.5mm Aluminium. (5251H22)
- Raw metal finish, powder coated, anodised or plated in colour of clients choice.
- Fully welded corners for strength & smooth appearance.
- Standard or purpose designed LED Arrays.
- Exposed LED's or concealed when 'off' *(Behind Polycarbonate front sheets).*
- Choice of front sheet materials & colours:
    Foamex PVC / Perspex / ABS / Polycarbonate / Al / SS.
- Easy to mount aluminum wall tray.
- Post mounting options.
- Suitable for external or internal use as specified.
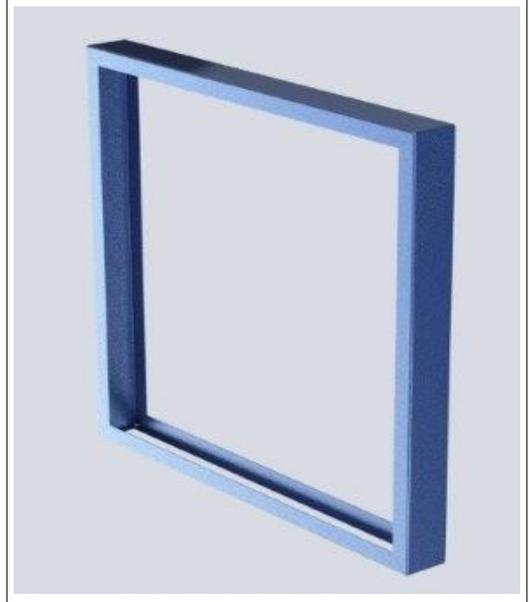
Options for Front Plate

03 PVC	PVCWH		White 5mm Foam PVC Sheet RAL9003
	PVCBK	⬛	Black 5mm Foam PVC Sheet RAL7021
	PVCBL	🟦	Darker Blue 5mm Foam PVC Sheet RAL 5010
	PVCGY	⬜	Light Grey 5mm Foam PVC Sheet RAL 7001
	PVCYL	🟨	Light Yellow 5mm Foam PVC Sheet RAL 1018
07 O	ABSBK	⬛	Black Pinseal 5mm ABS Sheet.
	POLYC	Clear	Clear Polycarbonate
	POLYF	Frosted	Clear polycarbonate with a frosted film internally.

Other options are available, such as Aluminium or Stainless Steel.

LED Array Loadings

The loading & brightness will be specific to the LED array(s) required. The table below is a guide to some sample values. The actual values will be on a label on the back of the array(s) potting compound.

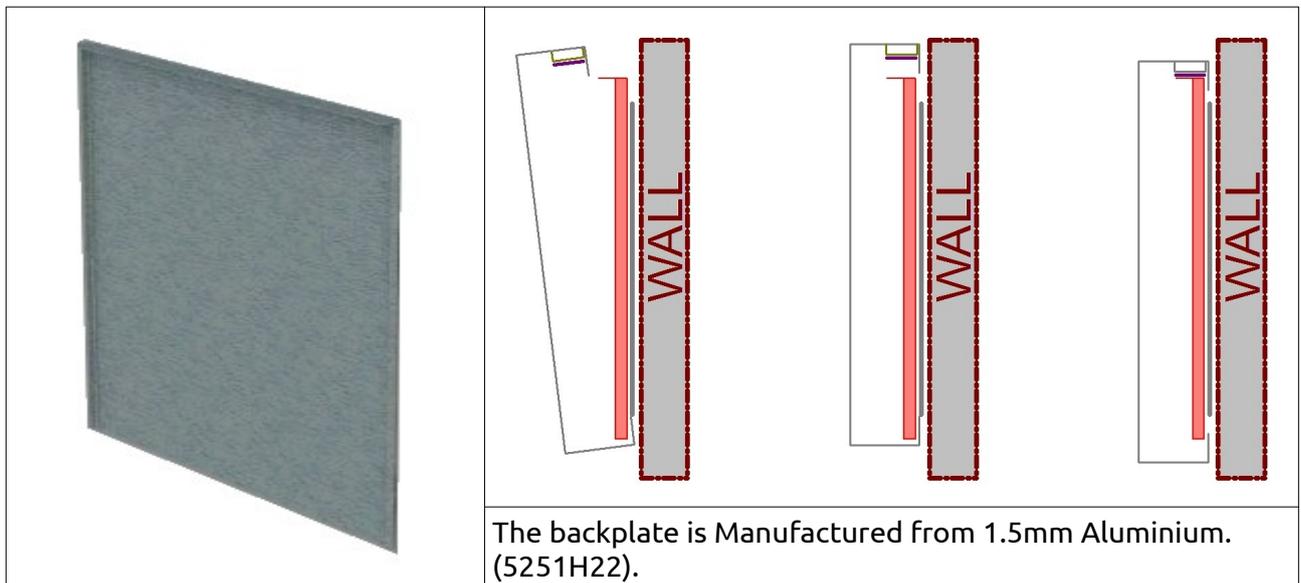| P** = LED Colour / Couleur / Farbe. Colore. Color. **V / W / mA**		**R** Red / Rouge / Rot / Rosso / Rojo / Vermelho	**A** Amber / Jaune / Gelb / Colore Giallo / Amarillo	**G** Green / Vert / Grün / Verde	**B** Blue	**W** White
≤ 40 LED	cr24vDC (± 3v)	4.5W (0.19A)	4.6W (0.20A)	3.9W (0.17A)	5.7W (0.24A)	4.4W (0.19A)
	cr12vDC (± 1.5v)	4.5W (0.38A)	4.6W (0.40A)	3.9W (0.34A)	5.7W (0.48A)	5.4W (0.45A)
≤ 76 LED	cr24vDC (± 3v)	7.3W (0.30A)	9.4W (0.40A)	6.3W (0.27A)	10.6W (0.45A)	8.6W (0.36A)
	cr12vDC (± 1.5v)	7.3W (0.60A)	9.4W (0.80A)	6.3W (0.54A)	10.6W (0.90A)	10.6W (0.90A)
≤ 111 LED	cr24vDC (± 3v)	10.8W (0.45A)	13W (0.55A)	9.2W (0.39A)	16.W (0.7A)	12.5W (0.25A)
	cr12vDC (± 1.5v)	10.8W (0.90A)	13W (1.10A)	9.2W (0.78A)	16.0W (1.4A)	16W (1.4A)

Cable & Connections

Normally an unscreened 4M Defence Standard (Def Stan) 61-12 (Pt 4 / Pt 5) cable is used for array connections. One optional extra is the use of LSZH cable (Low smoke zero halogen)& another is a screened version for noisy RFI environments.

The cable can withstand contamination of fuel and mineral based fluids. The cable features tinned annealed flexible copper conductors, PVC insulation, non-hygroscopic binder tape, and a black PVC outer sheath.

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Cable Core Colours

Colours used where array's are on an individual pair per array.

The actual connections used will be on a label on the back of the arrays potting compound.

0.5mm² 16/0.2 conductors (3 Amp)

Flame propagation to BS4066 PT1 and IEC 332 PT1

Voltage Rating: 440 volts

Temperature limits: -55°C to +70°C.

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Pair	Colour	Polarity
Pair 1	Red	+ve
	Blue	-ve
Pair 2	Yellow	+ve
	Green	-ve
Pair 3	White	+ve
	Black	-ve
Pair 4	Violet	+ve
	Brown	-ve

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Backplate & Installation Procedure

The backplate is Manufactured from 1.5mm Aluminium. (5251H22).

1) Fit backplate to wall. **NOTE:** The **TOP** of the backplate is **15mm down** from the outside top of the frame.

2) Prepare your cable exit & pass cable through.

3) Offer the array unit up to the backplate, by leaning the array unit top slightly forward & inserting the bottom of rear (frame) under the gap between at the bottom of the backplate and the wall.

4) Slide the array unit up, and then move top towards the wall, so that it drops into the top gap. Slide down front array unit.

5) Check signs appearance – If satisfied Remove by reversing steps 4 & 3 above.

6) Remove protective tape from the adhesive tape inside the top rear of the enclosure.

7) Repeat steps 3 & 4 and press down firmly.

Performance

	2006/95/EC **IEC 60742** **IEC 61140**	**Important. - Supply Voltage:** **PELV / SELV extra low voltage only. Over Voltage = LED failure.** Unit has a thick potting compound to insulate components and provide double insulation equivalent. CR24vDC = 24v DC (± 3v) - CR12VDC = 12v DC (± 1.5v)
	2014/27/EU *See Annex VI: Minimum requirements for illuminated signs*	Intense LED Light For a direct view - Recommended minimum viewing distance: 20-50 LED = +5M / 50-80 LED = +10M / 80+ LED = +20M
	2014/30/EU	EMC Compatability - Radio Frequency Interference Emmissions = Benign. · Conducted Transmissions: U**vDC = Vulnerable CR**vDC = Protected (≥ 5KHz). · Radiated Transmissions = Vulnerable.
		Temperature Installation = +5°C to +30°C In service = -15°C to +40°C
		Service Life - Dependant on Material of front sheet and deterioration of housings by UV: Typically: Shade = +15 Years / Sunlight = +10 Years
	IEC 60529, **EN 60 529.**	Electronic Components are **fully potted.** Ingress of water and short term immersion will not affect operation. Cavity IP400**.** Where unit is to be used External, there is a grill in the bottom of the enclosure to allow drainage
	2011/65/EU **2017/2102** **2015/863** **RHOS2**	Restriction Of Hazardous Substances - Not Applicable – Does not contain: Lead (Pb). Mercury (Hg). Cadmium (Cd). Hexavalent chromium (Cr6+). Polybrominated biphenyls (PBB). Butyl benzyl phthalate (BBP). Polybrominated diphenyl ether (PBDE). Bis(2-ethylhexyl) phthalate (DEHP). Dibutyl phthalate (DBP). Diisobutyl phthalate (DIBP)
2012/19/EU	**2012/19/EU 3b**	Not applicable. Fulfils its function only when used with other equipment.
		Recycle - Voluntary good practice.

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UCF Series TDS – Job / Project Appendix

Job Number	
Project Name	
Initial Purchaser	
Year Made	
Commodity Code	
BS / CE marks?	

Frame

Material	*Aluminium or Stainless*	
Metal Finish	*Paint / Anodise / Polished / Satin*	
Height mm	*Min 300mm to max 1200mm*	
Width mm		
Depth mm	*Standard 60mm*	

Front Plate

Material	*PVC / ABS / Polcarb / Al / SS*	
Polycarb backing	*PVC / ABS - Colour*	
LED position	*Projecting / dome / recess / hidden*	

LED Array(s)

Array 1 LED's	*Colour / Qty / Array Shape*	
	MA / W / Voltage / CR / RFI	
	LED angle / wavelength	
Array 2 LED's	*Colour / Qty / Array Shape*	
	MA / W / Voltage / CR / RFI	
	LED angle / wavelength	
Array 3 LED's	*Colour / Qty / Array Shape*	
	MA / W / Voltage / CR / RFI	
	LED angle / wavelength	