

INTERIOR LED

Hanover has developed a range of LED signs to provide on-board passenger information such as:

Advertising Messages, using our Windows based software, graphics and text messages can be quickly and easily created. Several thousand messages can be stored and each message can contain as many pages as required. Advertising on board can provide the operator with a useful source of income.

Next Stop information, which can be updated either manually, via a Hanover console keypad, or automatically using Hanover's vehicle location system.

Bus Stopping message can be displayed automatically through a connection to the bell push.

There are several sizes shown below, for further information and other sizes available please contact Hanover Displays.



LED 96x8 Display



Tri-colour 96x8 Display

All capable of displaying other languages



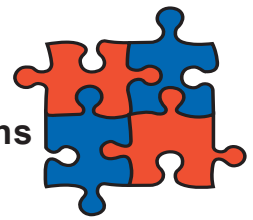
LED 144x16 Two line display



Next Stop

TECHNICAL INFORMATION

| | |
|------------------------|---|
| Operating Voltage | 18 - 32 volts DC |
| Power Consumption | ca. 1.3 Amps (at 24v DC), fitted with 2A fuse. |
| Standard Communication | RS485, other options available RS 232/422/Wayfarer 3 ticket machine |
| Standard Colour | Green text on black (Tri-colour amber/green/red) |
| Character Height | Various (50mm+) |
| Mountings | Side or Top options available |



| | |
|---------------------------------------|--------------------------------|
| Product Code: | L060 485 (INTERNAL LED) |
| Sign Size: | 144x19 'Short' LED sign |
| Lighting Type: | LED (Amber) |
| Weight: | 3 kg |
| Maximum Character Height Single line: | 75mm |
| Maximum Character height Double line: | 35mm (one row spacing) |
| Static Characters: | 24 (one space per character) |
| Scrolling Text: | 1 & 2 lines |



Case dimensions: W600mm x H110mm x D55mm
Viewing area: W570mm x H80mm

| No | Part No | Product Code | Description | Qty |
|----|------------|--------------|--|-----|
| 1 | 5118-06-01 | | 144*19 LED CASE ASSEMBLY | 1 |
| 2 | 5118-20-05 | | 144*19 WINDOW | 1 |
| 3 | 7630-01-02 | PC187A | 96*19 MASTER LED BOARD | 1 |
| 4 | 7633-01-01 | PC189 | 48*19 SLAVE LED BOARD | 1 |
| 5 | 7635-01-01 | PC191 | DIAGNOSTIC PORT DAUGHTER BOARD | 1 |
| 6 | 7612-01-03 | PC162B | PLUG IN POWER SUPPLY BOARD | 1 |
| 7 | 5118-20-06 | | DIAGNOSTIC PORT GROMMET | 1 |
| 8 | 5118-20-08 | | BRACKET (CEILING & BULK HEAD MOUNTING) | 1 |
| 9 | 0009-05-01 | | 18W-40MM MOLEX CABLE ASSY | 1 |

TECHNICAL INFORMATION

| | |
|---------------------------|--|
| Operating voltage | 18 – 32 volts DC |
| Power consumption @ 60% | 2.2 Amps @ 24v DC (53 watts approx) |
| Power consumption @ 100% | 3.5 Amps @ 24v DC (84 watts approx) |
| LED pitch (mm) | Horizontal 3.96 - Vertical 3.96 |
| LED diameter (mm) | 3.2 |
| Standard communications | RS485 – other options available |
| Temperature Range | -20C to + 60C |
| Storage Temperature Range | -20C to + 60C |
| Humidity (operating) | 80% max |
| Shock | 10G Peak (11ms pulse) |
| Vibration | Frequency - 1-200Hz Acceleration - 1.15 GRMS (1.63G Peak) Distance – 5mm peak to peak Duration – 1 hour in each axis (3 axis total) |



| | |
|---------------------------------------|--------------------------------|
| Product Code: | L061 485 (INTERNAL LED) |
| Sign Size: | 144x19 'Long' LED sign |
| Lighting Type: | LED (Amber) |
| Weight: | 3 kg |
| Maximum Character Height Single line: | 84.0mm |
| Maximum Character height Double line: | 39.5mm (one row spacing) |
| Static Characters: | 24 (one space per character) |
| Scrolling Text: | 1 & 2 lines |

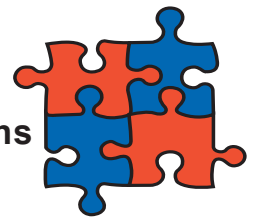


Case dimensions: W675mm x H120mm x D55mm
Viewing area: W645mm x H90mm

| No | Part No | Product Code | Description | Qty |
|----|------------|--------------|--|-----|
| 1 | 5119-06-01 | | 144*19 LED CASE ASSEMBLY | 1 |
| 2 | 5119-20-05 | | 144*19 WINDOW | 1 |
| 3 | 7631-01-02 | PC188A | 96*19 MASTER LED BOARD | 1 |
| 4 | 7634-01-01 | PC190 | 48*19 SLAVE LED BOARD | 1 |
| 5 | 7635-01-01 | PC191 | DIAGNOSTIC PORT DAUGHTER BOARD | 1 |
| 6 | 7612-01-03 | PC162B | PLUG IN POWER SUPPLY BOARD | 1 |
| 7 | 5118-20-06 | | DIAGNOSTIC GROMMET | 1 |
| 8 | 5119-20-06 | | BRACKET (CEILING & BULK HEAD MOUNTING) | 1 |
| 9 | 0009-05-01 | | 18W-40MM MOLEX CABLE ASSY | 1 |

TECHNICAL INFORMATION

| | |
|---------------------------|--|
| Operating voltage | 18 – 32 volts DC |
| Power consumption @ 60% | 2.2 Amps @ 24v DC (53 watts approx) |
| Power consumption @ 100% | 3.5 Amps @ 24v DC (84 watts approx) |
| LED pitch (mm) | Horizontal 4.48 - Vertical 4.48 |
| LED diameter (mm) | 3.6 |
| Standard communications | RS485 - other options available |
| Temperature Range | -20C to + 60C |
| Storage Temperature Range | -20C to + 60C |
| Humidity (operating) | 80% max |
| Shock | 10G Peak (11ms pulse) |
| Vibration | Frequency - 1-200Hz Acceleration - 1.15 GRMS (1.63G Peak) Distance – 5mm peak to peak Duration – 1 hour in each axis (3 axis total) |



| | |
|-----------------------------------|---------------------------------------|
| Product Code: | L062 |
| Sign Size: | 144x19-Double sided LED sign |
| Lighting Type: | LED (Amber) |
| Weight: | 4.0 kg |
| Max Character Height Single line: | 75mm |
| Max Character height Double line: | 35mm (one row spacing) per side |
| Static Characters: | 24 (one space per character) per side |
| Scrolling Text: | 1 & 2 lines |

Front & Rear view



Side view



Case dimensions: W600mm x H110mm x D90mm
Viewing area: W570mm x H80mm

| No | Part No | Product Code | Description | Qty |
|----|------------|--------------|----------------------------------|-----|
| 1 | 5176-06-01 | | 144*19 DOUBLE SIDED LED CASE | 1 |
| 2 | 5176-20-14 | | 144*19 DOUBLE SIDED SIDE BRACKET | 2 |
| 3 | 5118-20-05 | | 144*19 WINDOW | 2 |
| 4 | 7630-01-05 | PC187D | 96*19 MASTER LED BOARD | 1 |
| 5 | 7630-01-04 | PC187C | 96*19 SLAVE LED BOARD | 1 |
| 6 | 7633-01-01 | PC189 | 48*19 SLAVE LED BOARD | 2 |
| 7 | 7612-01-01 | PC162 | PLUG IN POWER SUPPLY BOARD | 1 |
| 8 | 0009-05-01 | | 18W-40MM MOLEX CABLE ASSY | 2 |
| 9 | 0009-05-02 | | 18W-750MM MOLEX CABLE ASSY | 1 |

TECHNICAL INFORMATION

| | |
|---|--|
| Operating voltage | 18 – 32 volts DC |
| Normal operating power consumption (33% LEDs on) | 0.76 amps @ 24v DC (18 watts approx) |
| Max power consumption (all LEDs on full brightness) | 2.10 amps @ 24v DC (50 watts approx) |
| LED pitch (mm) | Horizontal 3.96 - Vertical 3.96 |
| LED diameter (mm) | 3.2 |
| Standard communications | RS485 – other options available |
| Temperature Range | -20C to + 60C |
| Storage Temperature Range | -20C to + 60C |
| Humidity (operating) | 95% max |
| Shock | 10G Peak (11ms pulse) |
| Vibration | Frequency - 1-200Hz Acceleration - 1.15 GRMS (1.63G Peak) Distance – 5mm peak to peak Duration – 1 hour in each axis (3 axis total) |

NB: Power consumption will vary according to the message displayed. Environmental test information is taken from the results obtained from testing products based on a similar design.

