

Skyline Products
Dynamic Message Signs

Project Details

*Skyline Products Part Number: VMSLED-L-3-08F-28x110-I
Skyline Products Project #KS01*

City of Overland Park, KS

Project: 135th Street Improvements



Transportation Systems Division
2903 Delta Drive
Colorado Springs, CO 80910

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Last Updated 1/20/06

US Patent Nos 5,497,573; 6,012,210; 6,088,008 and Patents Pending

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Skyline Products, Inc.
Transportation Systems Division
2903 Delta Drive
Colorado Springs, CO 80910

(719) 392-9046 or (800) 759-9046
Fax (719) 392-7107

Attn.: Technical Writing Department

Sign Details—VMSLED-L-3-08F-28x110-I

Skyline Products Part # VMSLED-L-3-08F-28x110-I

(S=Standard, O=Option, N/A=Not Applicable or Not Available, N/A*=Not Applicable or Not Available for I-Series signs only)

Feature	I Series	Selected Options	Notes
Display/Description			
• Lift-face width			12'-4 1/2"
• Lift-face height			3'-9 3/4"
• Lift-face depth			23"
• Character Size			8"
• Matrix Type			Full
• Display Size			28x110
Quality			
• ISO 9001 certification for design, manufacturing, and service	S		
Safety			
• ETL Listed for UL 48 and UL 1433	S		
Housing Properties			
• Designed to current AASHTO standards	S		
• Fully welded aluminum housing	S		
• Welding compliance with AWS standards	S		
• Black KYNAR 500 coated face on mask, borders, and interline panels—guaranteed to not chip, fade, or peel for 20 years	S		
• Aluminum face mask over glazing with apertures for the pixels	S		
• Single lift face that allows a single technician to easily lift the entire face for safe, fast, and easy access to all internal sign components	S		
• Adjustable mounting brackets tilt sign housing from 0 to 10 degrees in one degree increments:	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Face lock: ability to padlock	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Door alarm	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Fold-down laptop shelf inside sign housing	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Ladder rail	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Polycarbonate glazing, 8" character signs:			
• 1/8" GE LEXAN XL10	S		
• 1/4" GE LEXAN XL10	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Polycarbonate glazing, 6" character signs: 1/8" GE LEXAN XL 10	S		
• Exterior finish (excluding face):			
• Natural aluminum finish	S		
• Painted housing	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Skyline Products Part # VMSLED-L-3-08F-28x110-I (Continued)

(S=Standard, O=Option, N/A=Not Applicable or Not Available, N/A*=Not Applicable or Not Available for I-Series signs only)

Feature	I Series	Selected Options	Notes
Environmental Control			
• Advanced ventilation that cools the LEDs first	N/A		
• Airflow monitoring system	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Advanced humidity control system (requires heat tape option)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Environmentally-friendly, reusable (washable) electrostatic filters	S		
• Heat tape along the bottom of each line	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8 watts/foot
• Internal temperature sensors	S		2 sensors
• Ambient temperature sensors	S		None
• Ventilation:			
• Positive-pressure ventilation system	S		
• Standard ventilation with filters	S		
• Maintenance-free cooling system	N/A		
• Long-life air filtration system	N/A		
AC Electrical			
• Conformity with NEC standards	S		
• GFI outlets	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Current required per leg			40A
• Main breaker			40A
• Trippable main	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Flashing beacons	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Battery backup system for the LED display	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• AC Power			
• 120/240 volts, single phase (3 wire plus ground)	S		
• 120 volts (2 wire plus ground)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Load centers:			
• Basic load center with grouped circuits	S		
• Load center with separate circuits for individual components	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Incandescent interior lighting:			
• Heavy-duty, shielded light fixtures	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Standard fixtures	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Surge Protection			
• AC power protection:			
• Single-stage protection without feedback	S		
• Two-stage AC power surge protection with feedback	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Communication line protection:			
• Single-stage protection without feedback	S		
• Two-stage communication line surge protection with feedback	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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Skyline Products Part # VMSLED-L-3-08F-28x110-I (Continued)

(S=Standard, O=Option, N/A=Not Applicable or Not Available, N/A*=Not Applicable or Not Available for I-Series signs only)

Feature	I Series	Selected Options	Notes
Controller			
• 1-wire sensor system	S		
• 170E with 470IB PROM module sign controller	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• 2070 Lite sign controller	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• NTCIP compliance	S		
• UPS for local sign controller and modem	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Pole-mounted local control box (requires ISC)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Ground-mounted controller (GMC)	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Modem (dial-up, fiber optic, cellular, CDPD, etc.)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	By others
LED Display and Electronics			
• Legibility distance—50 to 450 feet for 8" characters; 50 to 350 feet for 6" characters	S		
• Built to IPC-A-610C, Class 2	S		
• Drive LEDs properly—less than 30 mA; 2400 Hz day and 100Hz night	S		
• Standoffs on LEDs provide superior LED cooling and eliminate corrosion	S		
• LED pixel protection and alignment device	S		
• Silicon conformal coat, 10-mil minimum—conforms to MIL-I-46058C, Type SR and IPC-CC-830	S		
• Uniform color and brightness	S		
• 256 minimum brightness levels	S		
• Pixel test at the half-pixel level	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Pixel read at the half-pixel level	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Ambient light sensors [location]	S		[front, rear, down]
• Redundant power supply	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Power supply sensors (each power supply sensor will handle up to four power supplies)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Operational status feedback of all sensors	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Power supply voltage			12V
• +LED voltage			11.6V
• LED cone angle			30 Degrees
• Display module pixel configuration			10x14
• Sign module configuration			2x11
• LEDs per string			3
• LED strings per pixel			1
• Adjustable brightness table:			
• Locally downloadable	S		
• Remotely downloadable	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• LED type:			
• Agilent TS AllnGaP I LEDs (amber)	S		
• Agilent TS AllnGaP II LEDs (amber)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

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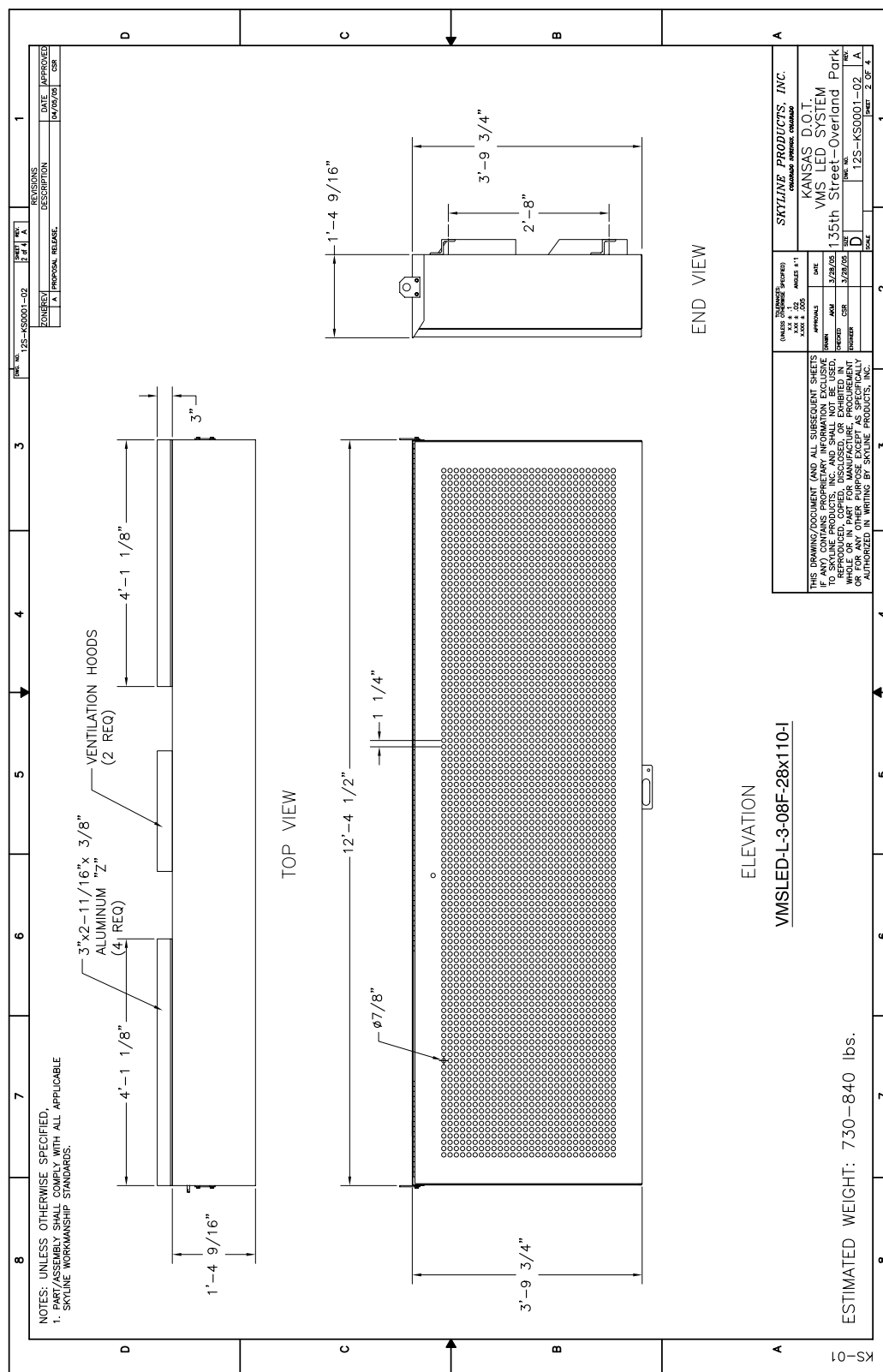
Skyline Products Part # VMSLED-L-3-08F-28x110-I (Continued)

(S=Standard, O=Option, N/A=Not Applicable or Not Available, N/A*=Not Applicable or Not Available for I-Series signs only)

Feature	I Series	Selected Options	Notes
• Candela standards:			
• 40 candela per pixel at 20mA (8" characters)	O	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• 32 candela per pixel at 20mA (8" characters)	S		
• 18 candela per pixel at 20mA (6" characters)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• 14.4 candela per pixel at 20mA (6" characters)	S		
• Power supply type:			
• Moderate-efficiency power supplies without power factor correction	S		Lambda LZ-750 [1]
• High-efficiency power supplies with power factor correction	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Warranty and Telephone Technical Support			
• One-year limited parts return-to-factory warranty (This warranty begins upon completion of the sign at Skyline Products.)	S		
• Three-year limited parts return-to-factory warranty (This warranty begins upon completion of the sign at Skyline Products.)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Five-year limited parts return-to-factory warranty (This warranty begins upon completion of the sign at Skyline Products.)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Other limited parts-return-to-factory warranty (This warranty begins upon completion of the sign at Skyline Products.)	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• One-year on-site labor warranty	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Effective warranty dates			January 1, 2006 - December 31, 2006
Post-Warranty Telephone Technical Support			
• One-, three-, or five-year standard support package	O	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Lifetime standard support	N/A		
• Lifetime premium, priority support	N/A		

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Elevation Drawing



DATE: APPROVED 04/03/06 CSR		DATE: PROPOSAL RELEASE	
REVISIONS DESCRIPTION		REVISIONS DESCRIPTION	
A PROPOSAL RELEASE		A PROPOSAL RELEASE	

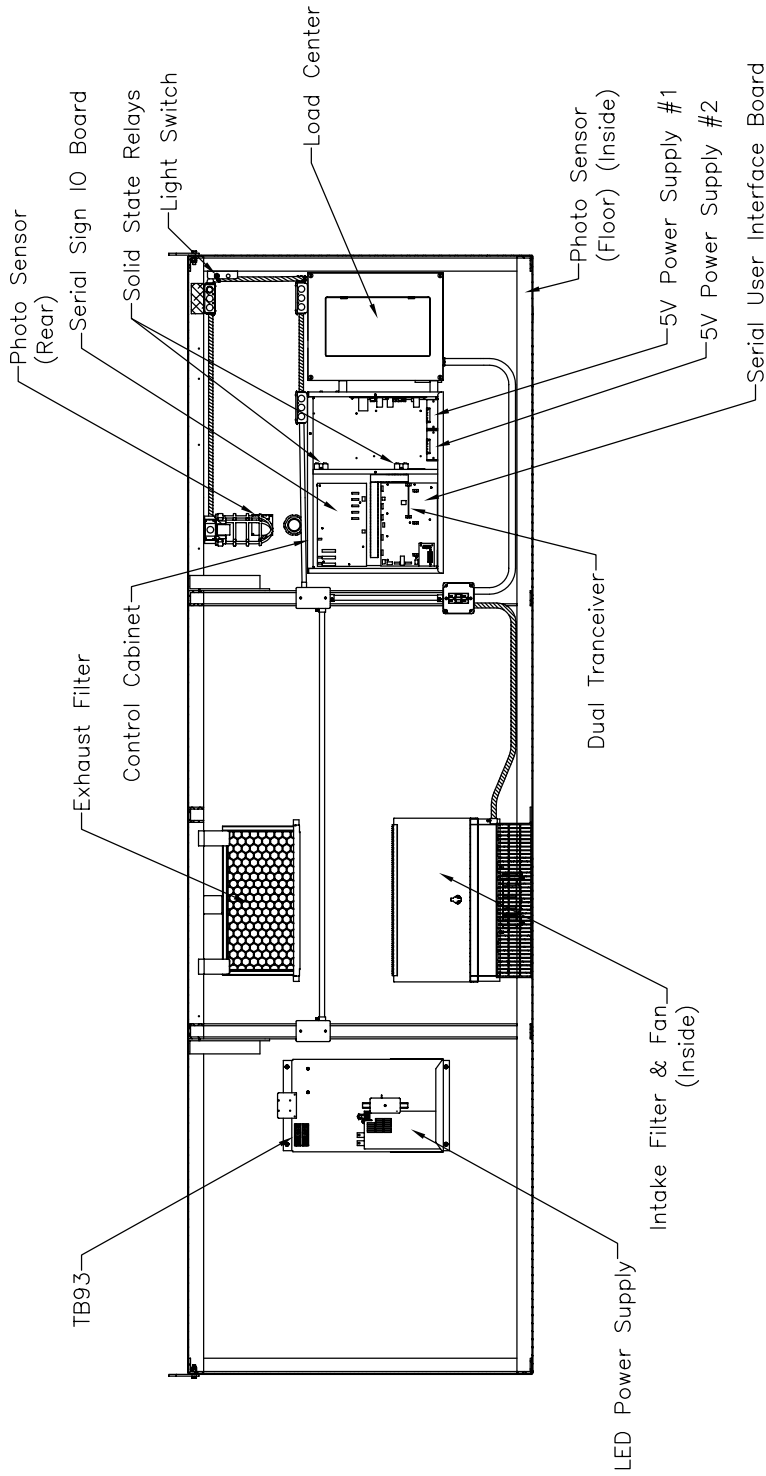
UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED
SCALE: 1/4" = 1'-0"	SCALE: 1/4" = 1'-0"
DATE: 4/3/06	DATE: 4/3/06
DESIGNER: JAW	DESIGNER: JAW
CHECKER: CSR	CHECKER: CSR
DATE: 3/29/06	DATE: 3/29/06
PROJECT: 135th Street-Overland Park	PROJECT: 135th Street-Overland Park
DRAWING NO: 12S-KS0001-02	DRAWING NO: 12S-KS0001-02
SHEET NO: 2 OF 4	SHEET NO: 2 OF 4

SKYLINE PRODUCTS, INC. COMMERCIAL DIVISION, OVERLAND PARK, KS	
KANSAS D.O.T. VMS LED SYSTEM	
135th Street-Overland Park	

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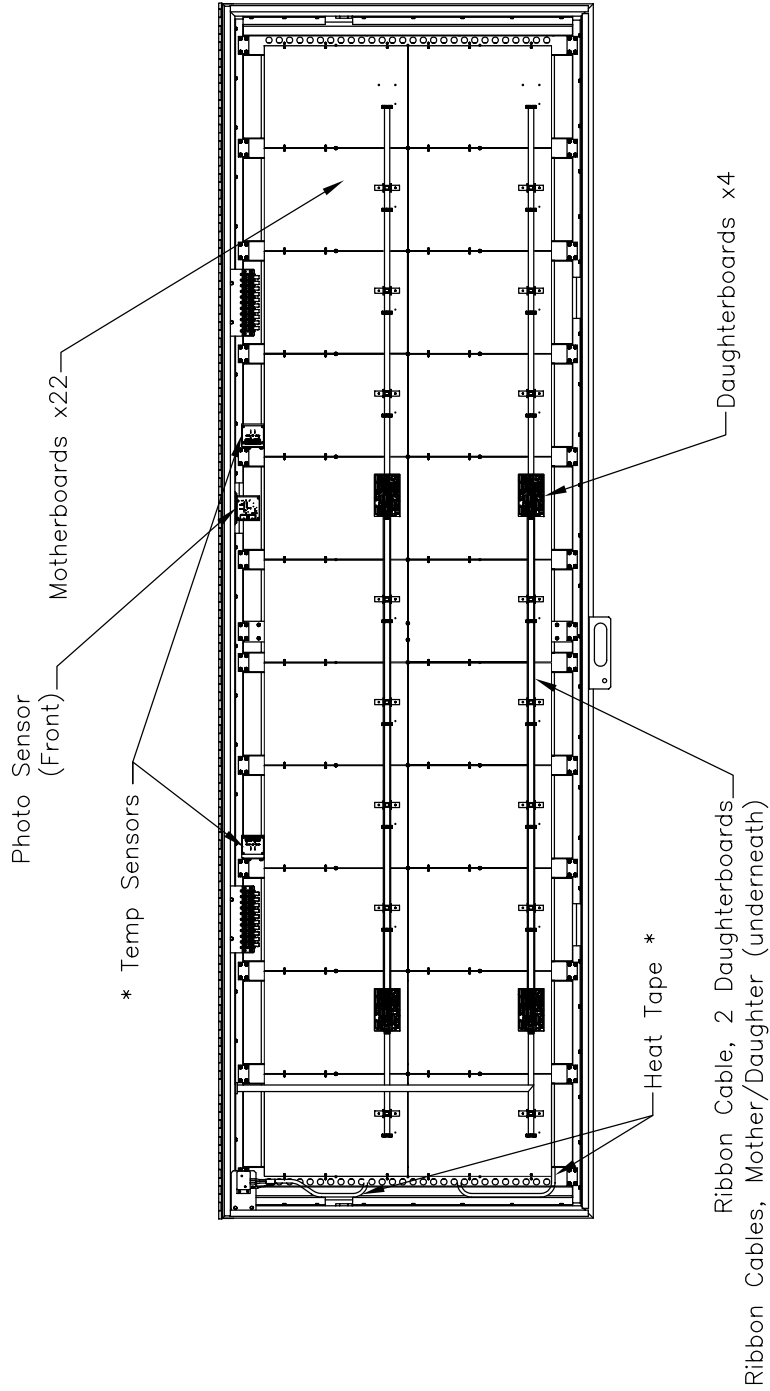
Physical Component Layout—Sign Housing



Physical Component Layout — Inside Back Wall
 Applicable to the Following Model Number
 With Ground-Mounted Serial Controller
 VMSLED-L-3-08F-28x110

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Physical Component Layout Drawing—Sign Face



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Physical Component Layout — Inside Face
Applicable to the Following Model
w/Serial Controller
VMSLED-L-3-08F-28x110

*If sign is so equipped.

Warranty Information

The warranty on Skyline Products' LED VMS is a 1 year parts return to factory limited warranty which becomes effective upon completion of the sign by Skyline Products. The limited warranty covers design, materials and workmanship of the VMS and associated software.

The warranty shall begin on January 1, 2006 - Decemer 31, 2006.

This warranty includes telephone technical support at 800-759-9046 and shipping costs to return repaired or replaced parts to the City of Overland Park, KS. This warranty excludes fuses; filters; fluorescent and incandescent light bulbs; maintenance; and all on-site costs, including but not limited to labor, material, access, and traffic control.

Improper or inadequate maintenance of the VMS, as detailed in the *Skyline Products Operation and Maintenance Manual*, shall void the warranty on all affected parts, as determined by the sole discretion of Skyline Products.

All defective parts shall be returned to Skyline Products freight prepaid. All returned parts must include a RMA number. Call Skyline Products Customer Service at 800-759-9046 for an RMA number before returning any defective parts. Skyline Products will, at its sole discretion, repair or replace any defective part with a new or refurbished one and return the parts freight prepaid within 30 days of the receipt of the returned part.

Display modules or motherboards and other PCBs shipped for warranty repair must be packaged in static dissipative material and protected from shock and crushing. These parts must be shipped in an adequate shipping carton to maintain the warranty.

Returned parts must be labeled with the RMA number and shipped to:

Skyline Products
Attention: TSD Customer Service
2845 Delta Drive
Colorado Springs, CO 80910-1012

Parts returned without the RMA number clearly labeled on the outside of the package may be delayed. To expedite your return, please provide as much failure information as possible.

Damage resulting from actions not under the control of Skyline Products including but not limited to, acts of God; winds in excess of 120 miles per hour; traffic accidents; structural failure of the support structure; and vandalism are excluded.

Repair or tampering by untrained or unauthorized personnel shall void the warranty on all affected parts and software, as determined by the sole discretion of Skyline Products.

The City of Overland Park, KS, will indemnify, defend and hold Skyline Products, and its officers, directors, agents, and employees, harmless from and against any liability, claims, demands, costs, loss, damages and attorneys' fees (collectively "liability") incurred or suffered by Skyline Products to the extent such liability is the result of or arises out of (i) any fraudulent, wrongful or negligent act or omission of the City of Overland Park, or its employees; or (ii) the City of Overland Park's violation of any applicable law, regulation or rule.

IN ANY EVENT, SKYLINE PRODUCTS SHALL NOT BE LIABLE FOR ANY SPECIAL, PUNITIVE, CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SIMILAR DAMAGES DUE TO LOSS OF DATA, LOSS OF USE OF A SIGN OR ANY OTHER REASON. IN NO EVENT SHALL THE LIABILITY OF SKYLINE PRODUCTS FOR ANY DAMAGES EVER EXCEED THE COST OF REPAIRING THE DEFECTIVE HOUSING, PARTS OR SOFTWARE, REGARDLESS OF THE FORM OF THE CLAIM.