



QPS EVALUATION SERVICES INC.

US FIELD EVALUATION LETTER OF COMPLIANCE

| | |
|--|----------------------------------|
| Company Name: | Spectrum Manufacturing Inc., |
| File Number: | QFE38011-47N |
| Company Contact: | Mani Bhardwaj |
| Company Address: | 88 Horner Ave Toronto ON M8Z 5Y3 |
| Inspection Location: (same as above <input checked="" type="checkbox"/>) | |
| Product Evaluated: | Stage & Studio Distribution Rack |
| Model Number: | MLD208C |
| Rating: | 208/120Y Vac, 24A, 60Hz, 3Ph/ 5W |

We have completed our evaluation of the product shown above using the following Standard(s): UL508A

NEC Code NFPA 70 Edition
2014

Please retain a copy of this Letter of Compliance and the Field Evaluation Report in your files for a minimum of 7 Years.

If you have any questions, please do not hesitate to call.

Regards,

A handwritten signature in blue ink, appearing to be 'M. Bhardwaj', is written over a faint circular stamp.




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| CUSTOMER INFORMATION | | | | | |
|---|---|------------------------------------|---|------|-------|
| Company Name: | Spectrum Mfg | PO Number: | | | |
| Company Contact: | Mani Bhardwaj | | | | |
| Company Location: | 88 Horner Ave., Toronto ON | Location of Inspection: | <input checked="" type="checkbox"/> Same as Customer | | |
| Date of Inspection: | Aug 9, 2017 | Service Agreement: | <input checked="" type="checkbox"/> On File <input type="checkbox"/> Signed | | |
| Time of Arrival: | | Time of Departure: | | | |
| EQUIPMENT INFORMATION | | | | | |
| Equipment Type: | Stage & Studio Distribution Rack | | | | |
| Model Number(s): | MLD208C | | | | |
| Installation Destination (If known) | | | | | |
| UL Standards: <small>(Referenced as a guide)</small> | UL508A | | | | |
| NEC (current edition) | 2014 | | | | |
| Electrical Rating | 208/120Y V <input checked="" type="checkbox"/> AC | 60 Hz | 24 <input checked="" type="checkbox"/> A <input type="checkbox"/> W <input type="checkbox"/> VA | 3 Ph | NA HP |
| Model Number MLD208C | Serial Number Aug 2017 | Label Number QFU219339 - 219389 | | | |
| REPORT INFORMATION | | | | | |
| Inspector Name: <small>(Report Prepared By)</small> | | Inspector Signature: |  | | |
| Report Reviewed By: | | Reviewer Signature: | | | |



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| B | Electrical Wiring Diagrams |
| C | Photos |
| D | Illustrations |
| E | Bill of Materials |
| Attachments | Field Evaluation Certificate <i>(optional – only provided upon request)</i> |

| REPORT | |
|------------|--|
| 1.0 | PURPOSE |
| 1.1 | The purpose of this inspection is to provide assurance that the equipment being evaluated meets the requirements of the appropriate codes and safety standards as outlined in our report. |
| 1.2 | These requirements are required by the local AHJ (Authority Having Jurisdiction) when equipment is not listed or recognized by a Third Party Nationally Recognized Testing Laboratory “NRTL”. This evaluation addresses only the electrical aspects of the equipment with respect to electrical fire and electrical shock hazards only. The environment where the equipment will be used and installed has been taken into consideration during the evaluation of the product. |
| 1.3 | In some jurisdictions, the authority having jurisdiction (AHJ) may have established requirements and/or practices for field evaluation and labelling. QPS’ policy is to comply with such additional requirements in those jurisdictions. |
| 1.4 | The field evaluation has also taken into consideration those requirements outlined in The National Electrical Code Sections 90.7 & 110.3 (A). |
| 1.5 | This document can be used by the AHJ to assess the completeness and the adequacy of the evaluation process performed by QPS during the field labelling process of the equipment identified in this report. |
| 1.6 | The field evaluation process was applied to this particular product since it was not a “listed” product. |
| 1.7 | The field evaluation process for the product listed in this report was for one-of-a-kind, limited production, used, or modified products that were not listed or labelled under a full listing and certification program. |
| 1.8 | This process could have been completed at the point of manufacturing, interim points of distribution, in the company’s facilities or at the final installation site or a combination of the above. The labeling location is identified in this report. |
| 2.0 | SUMMARY |



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| | | |
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| 2.1 | The equipment was labelled as indicated on page 2 of this report and modifications outlined in the field evaluation checklist were completed prior to the equipment being labelled. | |
| 2.2 | The equipment listed in this field evaluation report complies with the requirements as outlined in this report and the field evaluation shall not be considered as the equivalent of a listing. The equipment listed in this report is suitable for the installation location as identified in this report. | |
| 3.0 | CONDITIONS OF ACCEPTANCE | |
| 3.1 | Procedures used to approve the equipment described in this report comply with International Accreditation Service (IAS) accreditation criteria AC354 and are based on the American Council for Electrical Safety Competency Guidelines for Third Party Field Evaluation Bodies and Recommended Practice and Procedures for Unlabeled Electrical Equipment Evaluation. | |
| 3.2 | The product that has been field evaluated and labelled shall not be altered in any way; otherwise this will negate the Field Evaluation label that was applied. (If the product is altered in any manner, please contact your local QPS inspector for guidance.) | |
| 3.3 | A re-inspection of the product is required when any electrical refurbishing takes place or primary components that are not direct replacements are substituted. | |
| 3.4 | The equipment evaluation is based on sound engineering practices and upon compliance with the specific standards referenced in this document. | |
| 3.5 | The acceptance of this report applies to the electrical circuits and components only, as referenced in this report. Unless otherwise noted, it specifically excludes the examination for the suitability of the use of equipment involving toxic or corrosive gases; steam and locations defined as hazardous locations by the National Electrical Code. | |
| 3.6 | The equipment is marked with an interrupting rating as required for industrial control equipment if applicable. | <input type="checkbox"/> N/A |
| 3.7 | Referenced Electrical ANSI/UL Standard(s) | UL508A |
| | Referenced Edition of National Electrical Code: | NFPA70-2014 |
| 3.8 | It may be necessary to perform an on site evaluation to re-inspect the wiring, etc. if the equipment is dismantled for shipment to the point where the wiring was disturbed. | On Site Evaluation Required: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 4.0 | PRODUCT EVALUATION PROCEDURES | |
| 4.1 | Inspection | |
| 4.1.1 | <p>The following major components in the primary were verified and marked with a listing of an "NRTL" or were evaluated by QPS for acceptance in this field evaluation project. Detailed information on the components can be found in the BOM.</p> <p>Note: The components that are in the primary circuit or a safety circuit were inspected to ensure that they bear the Listing or Recognition mark of an "NRTL". This designation ensures that the component complies with the relevant standard. If there was no listing mark, the component would have been separately evaluated for acceptance in the application, taking into consideration the relevant UL standard.</p> | |
| 4.2 | Components Reviewed (Safety Critical) | |
| | Component | Acceptable |
| | Circuit Breakers | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| | | Comments |
| | | Schneider Electric Multi 9 C-60 series P/N 60146 UL489 Type CB's 6 x 15A 2 Pole. |



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| | Motor Contactors | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Fuses | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Busmann (P/N MDA-1-R) 1A x 250Vac 1/4" x 1 1/4" MDA with panel mount fuse holder (P/N HTB-361R). |
| | Disconnect Switches | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Transformers | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Overload Relays | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Motors | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | AC Drives | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | DC Drives | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Fans | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Wiring | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | 14 Awg Type TEW 105 deg C. |
| | Control Relays | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Power Supplies | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Astrodyne Model SPU15A-102 P/N 900-0637 Meanwell EPP-100-24 is cULus Listed File E183744 5Vdc/2.4A Max Output |
| | Hardware or firmware components and wiring for safety interlock circuits | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| 4.3 | Critical Components: The components listed above and any other additional critical safety components not mentioned above are identified in the BOM and described in detail. | | |
| 4.4 | Supplementary Protectors: are to be strictly used for overload protection in a secondary control circuit taking into the consideration the fault current available on the secondary terminals of the control transformer and the withstand rating of the device. They are not to be used for branch circuit protection. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| 4.5 | Visual Inspection | | |
| 4.5.1 | The equipment was visually inspected with particular attention in the following areas: | | |
| | | Acceptable | Comments (If necessary) |
| | Use of "Approved" Components | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | All components UL Listed or Equivalent and suitably rated for their purpose. See BOM File QFE38011-20N BOM Spectrum |



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| | Properly sized overcurrent protection for all motors and transformers | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Warning Markings | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | “Disconnect Power Supply Before Servicing” and “Replace Fuse With Same Type And Ratings Only” are permanently labelled. |
| | Wiring Ampacities | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | Grounding | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | NFPA-70 Wiring Methods | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | Guarding of Live Parts | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | Damaged Components | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | |
| | Electrical Clearances | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | Wiring Bending Space | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | Drawings verified to match equipment | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| | Environment Suitability | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Indoor Use Only |
| | Nameplate and Markings | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

TESTS

| | | | |
|-----|---|---|---|
| 5.0 | Electrical testing may include but is not limited to the following: | | |
| | Test | Result | Comments |
| | Dielectric Strength Test (Mandatory): | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A | 1500 Vac for 1 minute |
| | Leakage Current Test: | <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> N/A | UL Listed Locking Pin & Sleeve Plug PCE type 0259, 30A/208-120/5 pin. |
| | Flame Test (mandatory if applicable): | <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> N/A | Metal Construction |
| | Heat Rise Testing: | <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> N/A | |
| | Ground Impedance Test: | <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> N/A | |
| | Safety Circuit Functional Tests (interlocks and emergency off): | <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> N/A | |
| | Abnormal Testing | <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input checked="" type="checkbox"/> N/A | |
| | Test Equipment Used | <input checked="" type="checkbox"/> Dielectric Tester # 5311 Cal Due Date: Jan 23, 2018 | <input type="checkbox"/> Simpson Meter # 5201 Calibration Due Date: Oct 19, 2017 |

ALTERATIONS NONE REQUIRED- THIS MODEL IS IN COMPLIANCE WITH ABOVE LISTED REQUIREMENTS WHEN IMPLEMENTATION OF THE ALTERATIONS IDENTIFIED CANNOT BE COMPLETED DURING THE INSPECTION VISIT, YOU ARE REQUIRED TO CONTACT QPS IN A REASONABLE AMOUNT OF TIME AFTER COMPLETION FOR A FOLLOW-UP INSPECTION

FOLLOW-UP INSPECTION REQUIRED: YES NO The alterations listed below have been incorporated in the labeled product



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| 1. | Submitter's nameplate shall list model number, July 2017 date code, 208Vac, 24A, 60Hz, 3Ph/5W. |
| 2. | Add "Disconnect Power Before Servicing" and "Replace Fuse With Same Type And Ratings Only" caution notices. |
| 3. | |
| Notes: | |
| 1. | |
| 2. | |
| 3. | |