

Havis-Shields Equipment Corp.

Summary Report for NFPA 1901 compliance of SAE J575 testing of work lights

KR-CCL-1-WP, KR-CCL-2-WP, and KR-CCL-3-WP

Summary:

NFPA 1901 2009 edition requires that certain vehicle-mounted luminaires that are used on the exterior of a fire apparatus must comply with specific tests specified in SAE J575, including Corrosion, Moisture, Dust, High-temperature, Warpage, Low-temperature, Vibration, and Durability. This document summarizes Havis-Shields determination of compliance with each of these criteria.

Testing:

Corrosion: SAE J575 requires 240 hours of salt spray exposure in an ASTM B117 salt spray cabinet with no visible corrosion. Havis-Shields subjected fixtures to a minimum of 3,000 hours of salt water exposure in an ASTM B117 salt spray test, and found no failure of seals, no water or salt penetration, no adverse effect on the performance or function of the lights, and no adverse effect on the appearance of the lights. This product far exceeds SAE J575 requirements, and therefore complies with NFPA 1901.

Moisture: SAE J575 permits an immersion test to be used in substitution of a moisture test, so Havis-Shields standard waterproofing test has been conducted to fulfill this requirement. In this test, 100% of fixtures are immersed under at least 6" of water for at least one minute. No water penetration is permissible for the test to pass. All tested samples and all production fixtures have passed this test. Therefore, this product complies with NFPA 1901.

Dust: SAE J575 permits the immersion test from the Moisture test requirement to be used in substitution to the Dust test. Since Havis-Shields has already tested and certified these products to be 100% waterproof using the SAE J575 waterproofing test, this product complies with NFPA 1901.

High-Temperature: This test is not clearly defined in SAE J575. Havis-Shields subjected representative samples of luminaires to long-term operation at an elevated ambient of 60C for 36 hours, with no failures and no reduction in performance observed. Therefore, we believe that our luminaires exceed any high-temperature requirement that may be reasonably expected of an emergency vehicle light, and therefore complies with NFPA 1901.

Warpage: SAE J575 requires no warpage to be measurable after one hour of normal operation. Havis-Shields has subjected representative test samples to over two years of operation, and no warpage has been measured. This luminaire far exceeds SAE J575 warpage requirements, and therefore complies with NFPA 1901.

Low-Temperature: This test is not clearly defined in SAE J575. Havis-Shields subjected representative samples of luminaires to operation at a reduced ambient temperature of -17C. No failures were observed, and all performance characteristics remained within specification. Therefore, we believe that our luminaires exceeds any low-temperature requirement that may be reasonably expected of an emergency vehicle light, and therefore complies with NFPA 1901.

Vibration: A SAE J575 vibration test was conducted by an independent laboratory, and was found to comply with a passing test result.

Durability: This test is not clearly defined in SAE J575. Havis-Shields subjected representative samples of luminaires to impact tests, drop tests, and twisting tests, and found no failures in testing. In conjunction with passing vibration testing, we believe that our luminaires should exceed any durability requirement that may be reasonably expected of an emergency vehicle light, and therefore complies with NFPA 1901.

Conclusion:

Havis-Shields KR-CCL-1-WP, KR-CCL-2-WP, and KR-CCL-3-WP fixtures meet or exceed all requirements of Corrosion, Moisture, Dust, High-temperature, Warpage, Low-temperature, Vibration, and Durability testing, as defined in SAE J575 and as interpreted by Havis-Shields. Havis-Shields therefore certifies compliance with these requirements of NFPA 1901.