



VIPAC ENGINEERS & SCIENTISTS

Vipac Engineers & Scientists Limited

ABN 33 005 453 627

The Victorian Technology Centre
 Private Bag 16, Port Melbourne, Victoria, 3207, AUSTRALIA
 Telephone +61 3 9647 9700 Facsimile +61 3 9646 4370

Web www.vipac.com.au

TEST CERTIFICATE

CLIENT: WESTAFLEX / UNIFLEX (AUST) **REF NO.:** 30V-08-0190-TRP-427730-2
 PTY LTD **REPORT NO.:** 427730-2
 140-160 BAMFIELD ROAD **DATE:** 24 Nov 2008
 Heidelberg West
 VIC 3081
CONTACT: MICHAEL STERLING

TEST TYPE: WATER SPRAY TEST
PART DESCRIPTION: FAN AND MOTOR ASSEMBLY
SERIAL NO: SAMPLE 1 (R2E 220-AA52-72)
 SAMPLE 2 (R2E 220-BD92-09)
TEST SPECIFICATION: AS 60529 – Degrees of protection provided by enclosures (IP Code) – IPX6, table 8 (Test means and main test conditions for the tests for protection against water), section 6 and clause 14.2.6

TEST INFORMATION:

Engineer:	Chris Johnson	
Title:	Project Engineer – Automotive	
Operation of test sample:	Non-powered	
Water nozzle size:	12.5 mm diameter	
Water flow rate:	100 litres / minute	
Distance of nozzle to sample:	2.7 meters	
Duration of test	3 minutes	
Sample 1 Test Date:	19/11/08	
Sample 2 Test Date	27/11/08	
Ambient Environmental Conditions:	Sample 1	Sample 2
Ambient Temperature (°C):	19.2	21.0
Relative Humidity (%):	68	39
Barometric Pressure (kPa):	100.6	100.9

Table 1 – Water Spray Test Information



Figure 1 – Flow meter, high volume pump and water tank



Figure 2 – 12.5 mm nozzle



Figure 3 - Sample 1 mounted in fixture and test underway (similar for sample 2)

RESULTS:

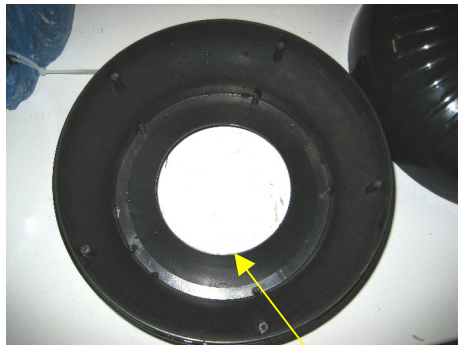


Figure 4 – Sample 1, The Engineer noted water pooling inside housing and dripping down inside of enclosure

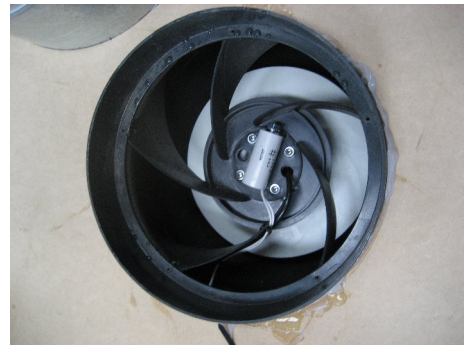


Figure 5 - Sample 1, The Engineer noted minimal water near fan motor enclosure, no water inside fan motor

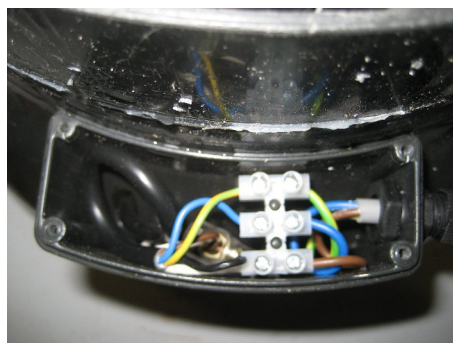


Figure 6 – Sample 1, The Engineer noted some water migration into base of terminal housing



Figure 5 – Sample 2, The Engineer noted water pooling inside housing and dripping down inside of



Figure 6 – Sample 2, The Engineer noted minimal water near fan motor enclosure, no water inside fan motor

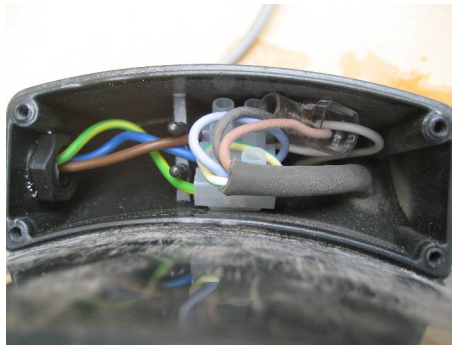


Figure 7 – Sample 1, The Engineer noted some water migration into base of terminal housing

Note: Both samples were powered up (240 volts) pre-test and post test. Each sample function was the same

Comment: Samples returned to Westaflex / Uniflex Australia for inspection

AUTHOR:	Christopher Johnson PROJECT ENGINEER <div style="text-align: right;">Date</div>
APPROVED:	Maurizio Demontis TEAM LEADER - AUTOMOTIVE <div style="text-align: right;">Date</div>