시 험 성 적 서
TEST REPORT

성적서 번호 Report No.		ICRT-TR-R190232-0A
신청자 Client	기관명 Name	Hanwha Techwin Co., Ltd.
	주 소 Address	Hanwha Techwin R&D center, 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
시험대상품목 Sample description		Network Camera
모델명 Type designation		XNV-6080RS
정 격 Ratings		-
시험기간 Date of test		2019. 05. 03 ~ 2019. 05. 08
시험방법/항목 Test Method/Item		ISO 20653 : 2013
시험결과 Test Results		Reference to see Table 4)
확 인 Affirmation	작성자 Tested by 성 명 박 영 길 Name S. H. Gwon (서명) (Signature)	기술책임자 Technical Manager 성 명 이 한 국 Name H. K. Lee (서명) (Signature)

시험 확인 전본 2021/03/31 09:42:25 KST 정부시험확인센터

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This is certified that the above mentioned products have been tested for the sample provided by customer and forbid the use except for original purpose.

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2021. 03. 31

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1. Test Specimen

Fig. 1) Photo of the specimens

※ derivative model

- XNV-8080RS, XNV-6080RSA, XNV-8080RSA

2. Test Methods

2-1) Test Standard : ISO 20653 (2013) - IP6KX

a) Put the specimen into the dust chamber.

b) The test is carried out under the test conditions given in Table 1.

c) After the test, remove the dust from the surface of the specimen.

d) Check the appearance of the specimen and check the dust penetration inside.

Kind of dust	Density of dust	Operating mode		Test time
		Air-dust mixture	Break time	
A2 (Arizona dust)	2 kg/m^3	6 s	15 min	Total 20 cycles shall be performed.

Table 1) Condition of the test

2-2) Test Standard : ISO 20653 (2013) - IPX6K

a) Fix the specimen on the test shelf of spray tester.

b) Fix spray nozzle of test equipment at (2.5 ~ 3) m distance from product.

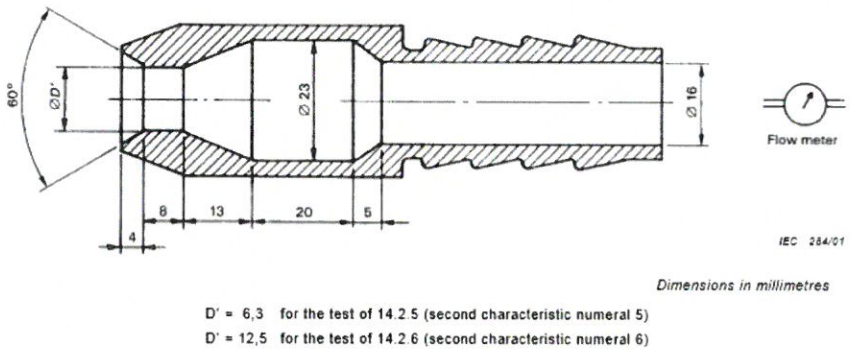
c) The test is carried out under the test conditions given in Table 2.

d) After the test, remove the water from the surface of the specimen.

e) Check the appearance of the specimen and the operation of the specimen.

Water temperature	Degree of protection	Operating Pressure	Nozzle diameter	Note
10 ± 5 ℃	6K	Approx. 1 000 kPa	6,3 mm	The test proceeds with non-operating conditions.
Water flow rate	Distance	Water splash cycle		
75 L / min ± 5 %	2,5 m to 3 m	1Cycle (30 min on / 30 min off) Total 48 Cycle		

Table 2) Condition of the test



Dimensions in millimetres

D' = 6,3 for the test of 14.2.5 (second characteristic numeral 5)

D' = 12,5 for the test of 14.2.6 (second characteristic numeral 6)

Fig. 2) Test device to verity protection against water 6K

2-3) Test Standard : ISO 20653 (2013) – IPX9K

a) Fix the specimen on the test shelf of IP9K tester.

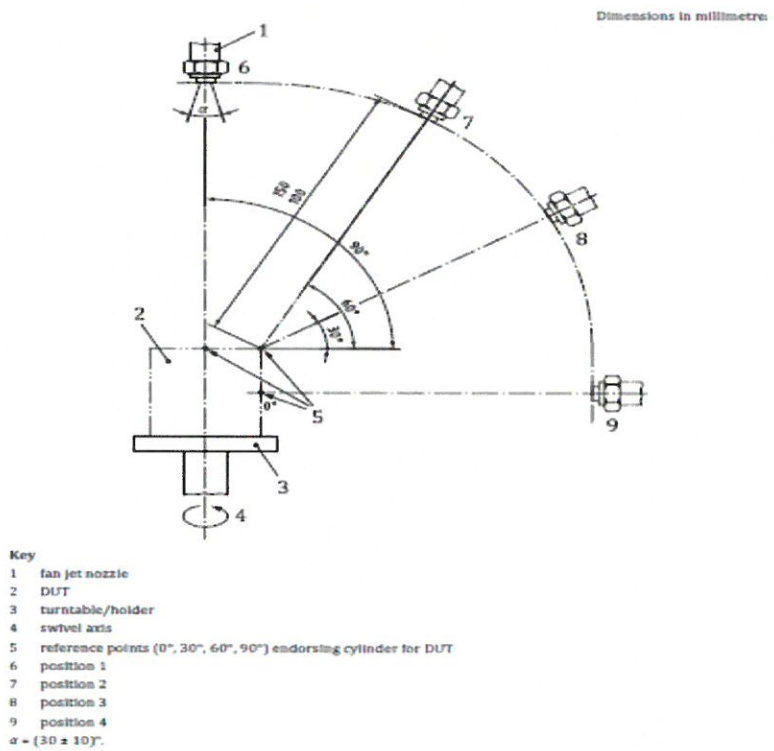
b) The test is carried out under the test conditions given in Table 3.

c) After completion of the test, the water on the specimen surface is completely removed.

d) Check the appearance of the specimen and check the water penetration inside.

Tun table speed (r/min)	Water temperature (℃)	Water flow rate (L/min)	Operating Pressure (kPa)
5 ± 1	80 ± 5	14 to 16	8 000 to 10 000
	Spray angle position	Distance (mm)	Exposure time
	0°, 30°, 60°, 90°	100 to 150	30 s per position

Table 3) Condition of the test



Key
1 fan jet nozzle
2 DUT
3 turntable/holder
4 swivel axis
5 reference points (0°, 30°, 60°, 90°) endorsing cylinder for DUT
6 position 1
7 position 2
8 position 3
9 position 4
$\alpha = (30 \pm 10)°$.

Fig. 3) Test device to verity protection against water 9K

3. Photos of the test set-up and Test Graph

3-1) IP6KX

Fig. 4) Photo of the test specimen set up

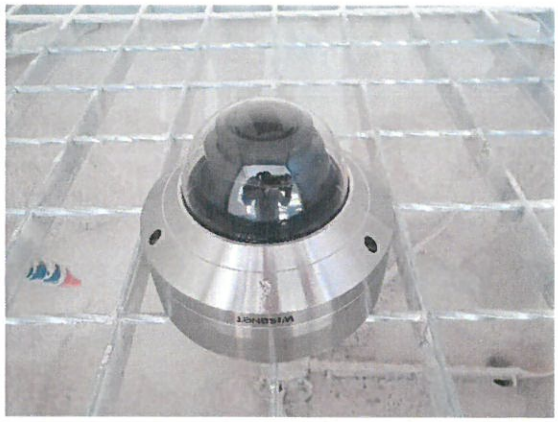


Fig. 5) Photo of the test specimen set up (Enlarge)

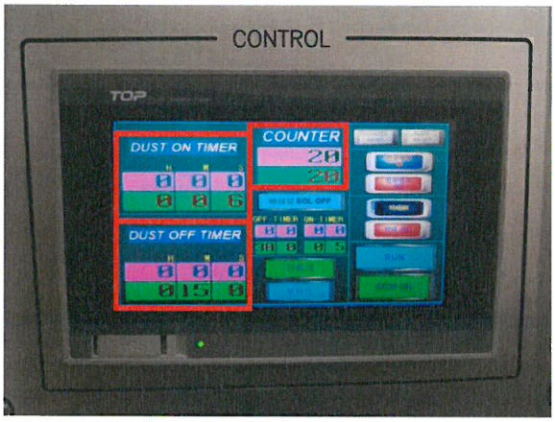


Fig. 6) Photo of the test condition

Fig. 7) Photo of the test specimen set up
(After of the test)

3-2) IPX6K

Figure 8) Photo of the specimen set up

Figure 9) Photo of the specimen set up (enlarge)

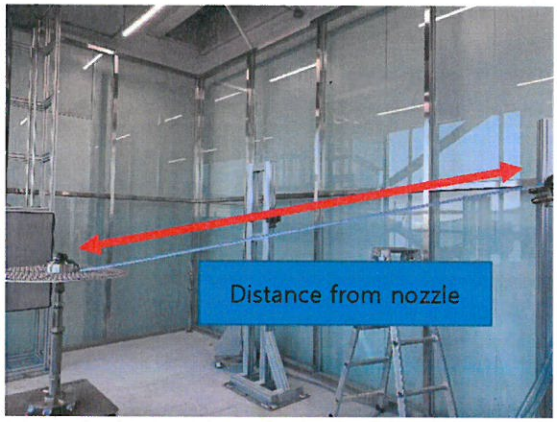


Figure 10) Photo of the specimen set up
(Distance from nozzle)

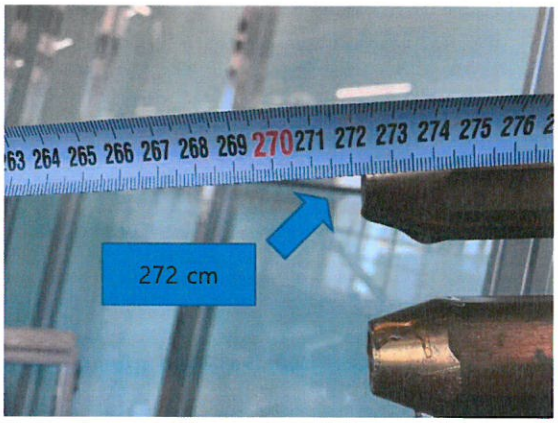


Figure 11) Photo of the specimen set up
(Enlarge, Distance from nozzle)

Figure 12) Photo of the test condition
(Test time)

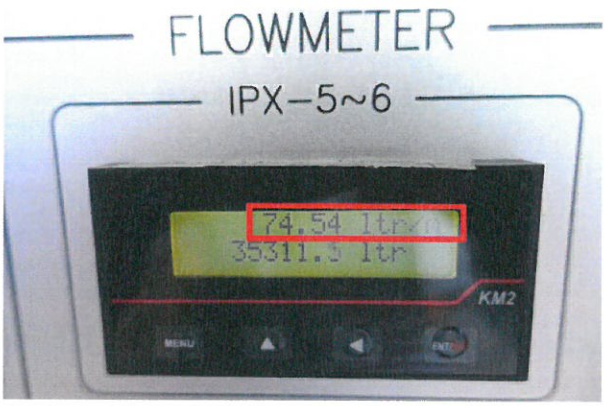


Figure 13) Photo of the test condition
(Water flow rate)

3-3) IPX9K

Fig. 14) Photo of the test set up

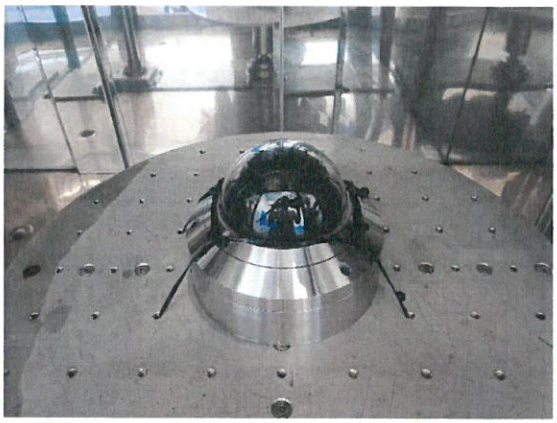


Fig. 15) Photo of the test set up (Enlarge)

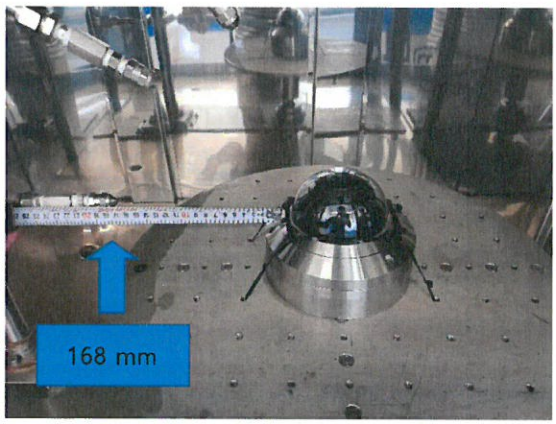


Fig. 16) Photo of the test specimen set up (0°)

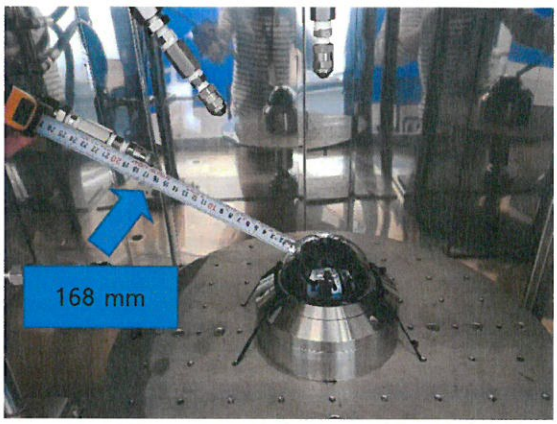


Fig. 17) Photo of the test specimen set up (30°)

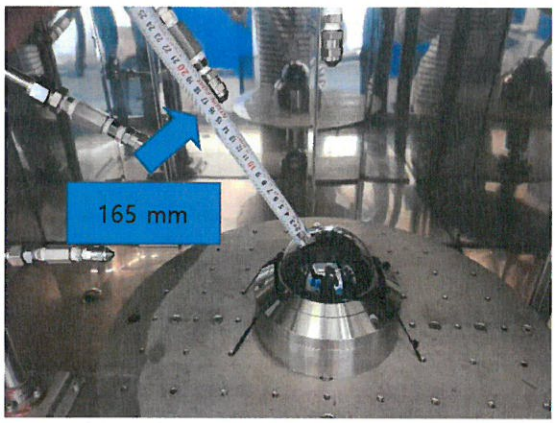


Fig. 18) Photo of the test specimen set up (60°)

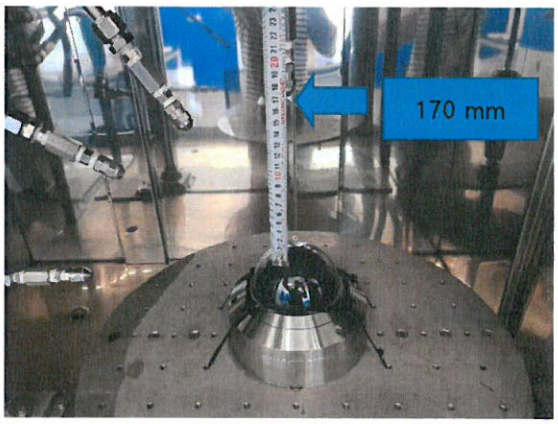


Fig. 19) Photo of the test specimen set up (90°)

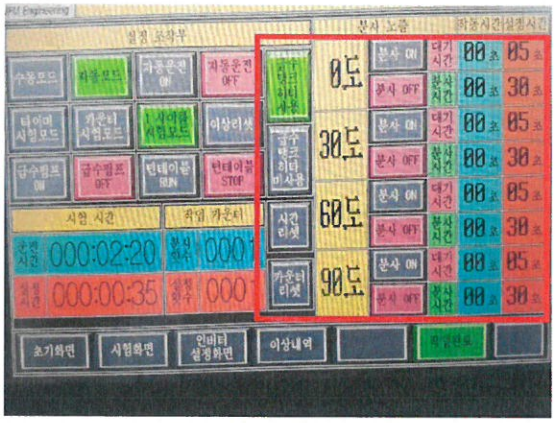


Fig. 20) Photo of the test condition
(Exposure time - 30 s per position)

Fig. 21) Photo of the test specimen set up
(Water pressure)

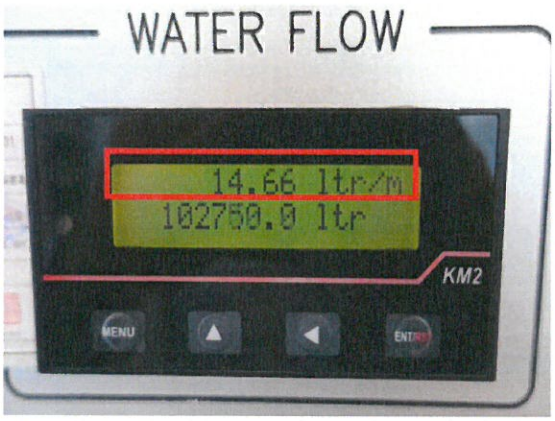


Fig. 22) Photo of the test specimen set up
(Water flow rate)

Fig. 23) Photo of the test specimen set up
(Water temperature)

4. Test Result

4-1) IP6KX

Fig. 24) Photo of specimen after the test

Fig. 25) Photo of specimen after the test

4-2) IPX6K

Fig. 26) Photo of specimen after the test

Fig. 27) Photo of specimen after the test

4-3) IPX9K

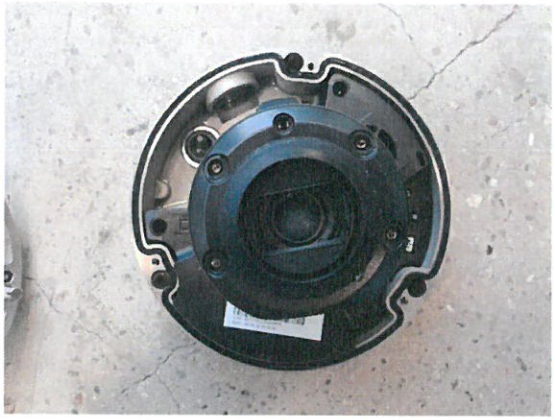


Fig. 28) Photo of specimen after the test

Fig. 29) Photo of specimen after the test

Test name	Test result	Note
IP6KX	No dust penetrated inside the tester	Visual inspection
IPX6K	No water penetrated inside the tester	
IPX9K	No water penetrated inside the tester	

Table 4) Test result

5. Test equipment

Equipment name	Model	Manufacturer	Next Calibration date
Dust Test Chamber	JFMD-0004	JFMTECH / KOREA	2019. 11. 20
Waterproof Tester	JFMB-008-IPX	JFMTECH / KOREA	2020. 01. 28
Waterproof tester	JFMB-008-9K	JFMTECH / KOREA	2020. 01. 17
Tape measure	KMC-34 (5.5 m * 19 mm)	KOMELON / CHINA	2019. 10. 11

END.