



TEST REPORT

KCTL Inc.

52-20, Sinjeong-ro 41 beon-gil, Giheung-gu,
Yongin-si, Gyeonggi-do 446-599, Korea
Tel : 82-31-326-6700 Fax : 82-505-299-8311
www.kctl.co.kr

Report No.:
KR17-YYP0032

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1. Client

- Name : Hanwha Techwin Co., Ltd
- Address : 1204, Changwon-daero, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, Korea
- Date of Receipt : 2016-12-27

2. Use of Report : For Quality evaluation

3. Name of Product and Model : CCTV Camera /
HCM-9020VQ* (* N: NTSC / P: PAL)

4. Manufacturer and Country of Origin : CPRO ELECTRONICE CO., Ltd. / Korea

5. Date of Test : 2017-01-04, 2017-01-24

6. Test method used : IEC 60529: 2013 (IP66)

7. Test Results : Refer to the test result in the test report

Affirmation	Tested by	Technical Manager
	Name: Kyung Hoon, Ahn (Signature)	Name : Do Hong, Choi (Signature)

2017-01-25

KCTL Inc.

As a test result of the sample which was submitted from the client, this report does not guarantee the whole product quality. This test report should not be used and copied without a written agreement by KCTL Inc.

REPORT REVISION HISTORY


Date	Revision	Page No
2017-01-25	Originally issued	-

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1. Test Laboratory

1.1 General

Name of Test Laboratory	KCTL INC.
Address	52-20, Sinjeong-ro 41 beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do 446-599, Korea
TEL	82 31-326-6700
FAX	82 505-299-8311
Home page	www.kctl.co.kr

1.2 Certificate of Designated Testing Laboratory

Mark.	Registration No.
NRRA	KR0040
KOLAS	No. KT231
IEC(CB-Scheme)	TL512
TUV-SUD	CARAT 15 08 93040 001
VCCI Council	R-3327, C-3706, T-1849, G-198
DSP Research, Inc.	G039
FCC	Test Firm Registration No. 687132
INDUSTRY CANADA	Company Address Code: 8035A

2. Product (EUT)

2.1 Specification

Division	Specification
Product Name	CCTV Camera
Model Name	HCM-9020VQ * (* N:NTSC / P:PAL)

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2.2 Product Photograph



[Front]



[Rear]

3. Test Method and Result

3.1 Protection against access to hazardous parts (IP6X)

3.1.1 Test Equipment

Instrument description	Model	Manufacturer	Serial number	Due Cal
Test Probe D	None	CERTIS	None	2018-01-15
Push Pull Gauge	FB30K	Imada	84013	2017-09-22

3.1.2 Date of test / Environment of test:

- 1) 2017.01.24
- 2) Temperature (19 ± 2) °C, Relative Humidity (29 ± 2) % R.H, Air pressure (101 ± 2) kPa

3.1.3 Test Conditions

Item	Description
First characteristic numeral	IP6X (Protected against access to hazardous parts with a wire)
Test condition	1. Access probe: 1.0 mm ø, 100 mm length 2. Test force: 1 N ± 10 %
Test location	All of the outside openings
Definition	The access probe of 1,0 mm ø shall not penetrate

3.1.4 Test Method

- 1) The access probe is pushed against or (in case of the test for first characteristic numeral 2) inserted through any openings of the enclosure with the force specified

3.1.5 Test Result

Check List	Test Result
Protected against access to hazardous parts with a wire	No abnormal was found

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3.1.6 TEST Photograph



[During the test 01]



[During the test 02]

3.2 Protection against solid foreign objects test (IP6X)

3.2.1 Test Equipment

Instrument description	Model	Manufacturer	Serial number	Due Cal
Dust Chamber	JFMD-002	JFM	20160201	N/A
Vacuum gauge	(-0.1~0) MPa	M.S	N/A	2017-02-19
STOP WATCH	HS-3	CASIO	510Q07	2017-12-01

3.2.2 Date of test / Environment of test:

- 1) 2017.01.24
- 2) Temperature (19 ± 3) °C, Relative Humidity (29 ± 4) % R.H, Air pressure (101 ± 2) kPa

3.2.3 Test Conditions

Item	Description
First characteristic numeral	IP6X (Dust-tight)
Enclosures	Category 1
Test condition	The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50 µm and the nominal width of a gap between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume
Test time	8 h
Definition	No ingress of dust

3.2.4 Test Method

- 1) The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump
- 2) The suction connection shall be made to a hole specially provided for this test
- 3) The object of the test is to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour. In no event shall the depression exceed 2 kPa (20 mbar) on the manometer
- 4) If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h.
- 5) If, with a maximum depression of 2 kPa (20 mbar), the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through, or a period of 8 h has elapsed.

3.2.5 Test Result

Check List	Test Result
No ingress of dust	No abnormal was found

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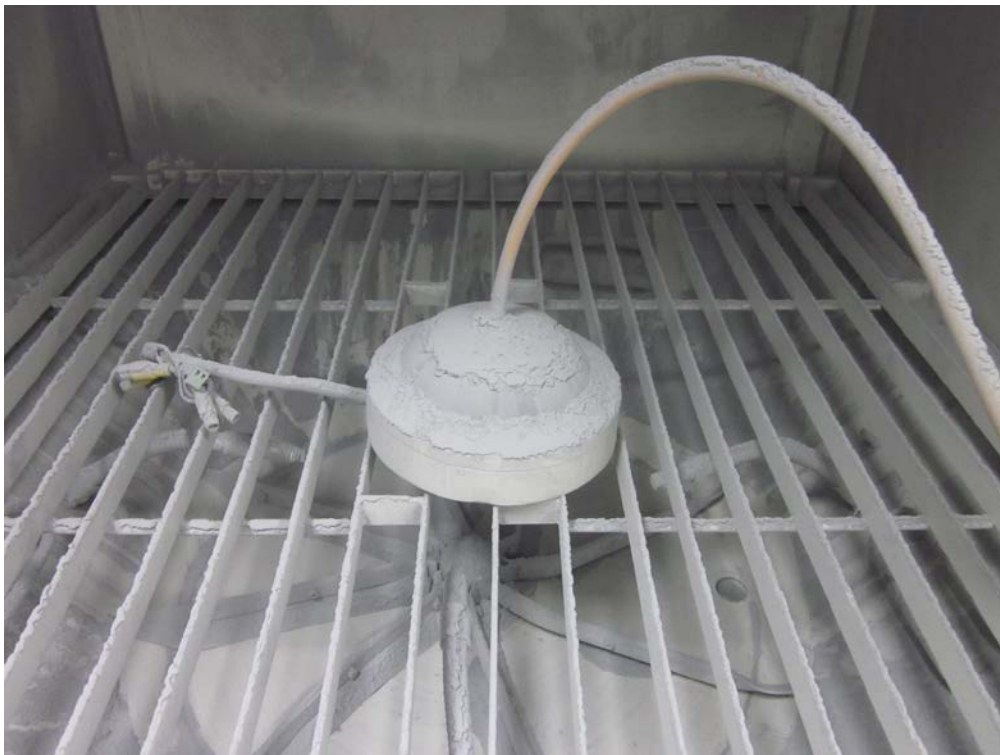
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3.2.6 TEST Photograph



[During the test]



[After test]

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[Test result confirme 01]



[Test result confirme 02]

3.3 Protection against water test (IPX6)

3.3.1 Test Equipment

Instrument description	Model	Manufacturer	Serial number	Due Cal
Flow Meter	F-1000-RT	BLUE-WHITE	01	2017-03-07
Spray Nozzle	IP06-N	ELEX POLYTECH	0160054	2017-03-17
Measuring Tape	3.5m	KOMELON	-	2018-07-07
STOP WATCH	HS-3	CASIO	510Q07	2017-12-01

3.3.2 Date of test / Environment of test:

- 1) 2017.01.04
- 2) Temperature (19 ± 2) °C, Relative Humidity (36 ± 2) % R.H, Air pressure (101 ± 2) kPa

3.3.3 Test Conditions

Item	Description
Second characteristic numeral	IPX6 (Protected against powerful water jets)
Test condition	1. Water jet hose nozzle diameter: 12.5 mm 2. Water flow rate: 100 L/min±5% 3. Distance: 2.5~3.0 m
Test time	1 min/m ² , at least 3 min
Definition	Water projected in powerful jets against the enclosure from any direction shall have no harmful effects

3.3.4 Test Method

- 1) The tests are conducted with fresh water
- 2) The water pressure is adjusted to give the specified delivery rate
- 3) The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle

3.3.5 Test Result

Check List	Test Result
Protected against powerful water jets	No abnormal was found

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3.3.6 TEST Photograph



[During the test]



[During the test_Water flow rate]

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[Test result confirme 01]



[Test result confirme 02]