



**Technical Report No. 68.167.15.0258.01C**  
**Dated 2015-06-10**

Client: Innokin Technology Co.,Ltd

Address: Building 6, XinXinTian Industrial park , Xinsha Road,  
Shajing, Baoan District, Shenzhen, China

Attn.: George

Sample Description: COOL FIRE IV

Model No.: /

Country of origin: CHINA

Exported to: Europe, North America

Location of Testing: TÜV SÜD Certification and Testing (China) Co., Ltd.  
Shenzhen Branch

Sample Received Date: 2015-05-28

Test Period: From 2015-05-28 to 2015-06-05

Test Requested and Conclusion: Test according to RoHS (Restriction of Hazardous Substances) directive 2011/65/EU on submitted samples

- Heavy Metal (Pb, Cd, Hg and CrVI) Content **PASS**
- Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content **PASS**

Test Result: Refer to the following page(s)

Remark: The result relates only to the items tested.

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**1. TESTED SUBJECT DESCRIPTION**

Sample Number	Item Name	Tested Material Description	Photo
001	Housing	Silvery metal	
002	Logo plate	Silvery metal	
003	Housing	Black plated silvery metal	
004	Housing	Red plated silvery metal	
005	Housing	Blue plated silvery metal	
006	Frame	Silvery metal	
007	Button	Silvery metal	
008	Button	Grey plastic	
009	Button	Silvery metal	
010	End frame	Silvery metal	
011	Button	Silvery metal	
012	Plate	Silvery metal	

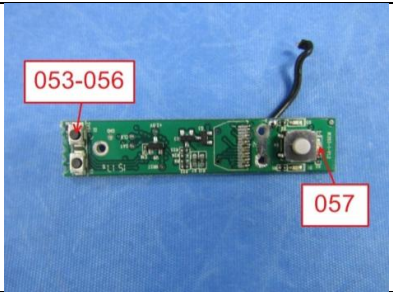
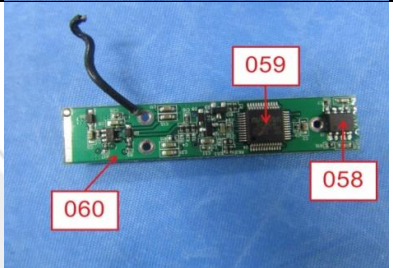



**Technical Report No. 68.167.15.0258.01C**  
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Sample Number	Item Name	Tested Material Description	Photo
013	Clapboard	Cyan paper	
014	Holder	White plastic	
015	Screw	Silvery metal	
016	Nut	Silvery metal	
017	Connector	Coppery metal	
018		Grey plastic	
019	Screw	Golden metal	
020	Glue	Transparent glue	
021	Wire	Black soft plastic jacket	
022		Red soft plastic jacket	
023		Coppery metal wire	
024	Switch	Black plastic button	
025		Silvery metal plate	
026		Black plastic base	
027		Coppery metal foil	
028		Silvery metal solder	
029	SMD capacitor	Yellow body	
030	Connect wire	Black soft plastic jacket	
031		Red soft plastic jacket	
032		Coppery metal wire	



**Technical Report No. 68.167.15.0258.01C**  
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Sample Number	Item Name	Tested Material Description	Photo
033	IC	Black body	
034	IC	Black body	
035	IC	Black body	
036	Small IC	Black body	
037	Small inductor	Grey body	
038	Bridge	Black plastic	
039		Coppery metal pin	
040	Socket	Silvery metal housing	
041		Black plastic	
042		Coppery metal pin	
043	Adhesive tape	Black plastic tape	
044	Adhesive tape	Brown plastic tape	
045	Adhesive tape	Red plastic tape	
046	Fuse	White body	
047	PCB unit	Green PCB	
048		Silvery metal solder	
049	Screen	Black foam	
050		Grey plastic	
051		Transparent glass with liquid	
052		Brown FPC	

**Technical Report No. 68.167.15.0258.01C**  
**Dated 2015-06-10**

Sample Number	Item Name	Tested Material Description	Photo
053	Switch	Black plastic button	
054		Silvery metal plate	
055		White plastic base	
056		Coppery metal foil	
057	SMD LED	White body	
058	IC	Black body	
059	IC	Black body	
060	PCB unit	Green PCB	
061	Out molding	White soft plastic	
062	Plug	Silvery metal housing	
063		White plastic	
064		Coppery metal pin	
065	Cable jacket	White soft plastic jacket	
066	Wire	Black soft plastic jacket	
067		Red soft plastic jacket	
068		Green soft plastic jacket	
069		White soft plastic jacket	
070		Coppery metal wire	
071	Micro plug	Silvery metal housing	
072		Black plastic	
073		Coppery metal pin	

**Technical Report No. 68.167.15.0258.01C**  
**Dated 2015-06-10**

Sample Number	Item Name	Tested Material Description	Photo
074	Housing	Purple plated silvery metal	
075	Housing	Magenta plated silvery metal	





Technical Report No. 68.167.15.0258.01C  
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2. TEST RESULTS

2.1. SCREENING

Test method: With reference to EN 62321:2009, analyzed by Energy Dispersive X-ray Fluorescence Spectrometers (XRF).

Sample No.	Total Cadmium	Total Chromium	Total Mercury	Total Lead	Total Bromine
001	BL	BL	BL	BL	N.A.
002	BL	BL	BL	BL	N.A.
003	BL	BL	BL	BL	N.A.
004	BL	BL	BL	BL	N.A.
005	BL	BL	BL	BL	N.A.
006	BL	BL	BL	BL	N.A.
007	BL	BL	BL	BL	N.A.
008	BL	BL	BL	BL	BL
009	BL	BL	BL	BL	N.A.
010	BL	BL	BL	BL	N.A.
011	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
012	BL	BL	BL	BL	BL
013	BL	BL	BL	BL	BL
014	BL	BL	BL	BL	BL
015	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
016	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
017	BL	BL	BL	OL <sup>(a)</sup>	N.A.
018	BL	BL	BL	BL	BL
019	BL	BL	BL	BL	N.A.
020	BL	BL	BL	BL	BL
021	BL	BL	BL	BL	BL
022	BL	BL	BL	BL	BL
023	BL	BL	BL	BL	N.A.
024	BL	BL	BL	BL	BL
025	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
026	BL	BL	BL	BL	BL
027	BL	BL	BL	BL	N.A.
028	BL	BL	BL	BL	N.A.
029	BL	BL	BL	BL	BL
030	BL	BL	BL	BL	BL
031	BL	BL	BL	BL	BL
032	BL	BL	BL	BL	N.A.
033	BL	BL	BL	BL	BL
034	BL	BL	BL	BL	BL
035	BL	BL	BL	BL	BL
036	BL	BL	BL	BL	BL



Technical Report No. 68.167.15.0258.01C  
Dated 2015-06-10

Sample No.	Total Cadmium	Total Chromium	Total Mercury	Total Lead	Total Bromine
037	BL	BL	BL	BL	Inconclusive <sup>(a)</sup>
038	BL	BL	BL	BL	Inconclusive <sup>(a)</sup>
039	BL	BL	BL	BL	N.A.
040	BL	BL	BL	BL	N.A.
041	BL	BL	BL	BL	BL
042	BL	BL	BL	BL	N.A.
043	BL	BL	BL	BL	BL
044	BL	BL	BL	BL	BL
045	BL	BL	BL	BL	BL
046	BL	BL	BL	BL	BL
047	BL	BL	BL	BL	Inconclusive <sup>(a)</sup>
048	BL	BL	BL	BL	N.A.
049	BL	BL	BL	BL	BL
050	BL	BL	BL	BL	BL
051	BL	BL	BL	BL	BL
052	BL	BL	BL	BL	BL
053	BL	BL	BL	BL	BL
054	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
055	BL	BL	BL	BL	BL
056	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
057	BL	BL	BL	BL	BL
058	BL	BL	BL	BL	BL
059	BL	BL	BL	BL	BL
060	BL	BL	BL	BL	Inconclusive <sup>(a)</sup>
061	BL	BL	BL	BL	BL
062	BL	BL	BL	BL	N.A.
063	BL	BL	BL	BL	Inconclusive <sup>(a)</sup>
064	BL	BL	BL	BL	N.A.
065	BL	BL	BL	BL	BL
066	BL	BL	BL	BL	BL
067	BL	BL	BL	BL	BL
068	BL	BL	BL	BL	BL
069	BL	BL	BL	BL	BL
070	BL	BL	BL	BL	N.A.
071	BL	Inconclusive <sup>(a)</sup>	BL	BL	N.A.
072	BL	BL	BL	BL	BL
073	BL	BL	BL	BL	N.A.
074	BL	BL	BL	BL	N.A.
075	BL	BL	BL	BL	N.A.





**Technical Report No. 68.167.15.0258.01C**  
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Note:

- “BL” denotes below limit
- “OL” denotes over limit
- “N.A.” denotes not applicable
- “(a)” denotes further confirmation test was conducted, results are listed in 2.2 and 2.3.
- XRF screening limits in mg/kg for regulated elements in various matrices

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL
Cd	$X < (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X > (130+3\sigma)$
Pb	$X < (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X > (1300+3\sigma)$
Hg	$X < (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X > (1300+3\sigma)$
Br	$X < (300-3\sigma)$	$X > (300-3\sigma)$	NA
Cr	$X < (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	$X < (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X > (130+3\sigma)$
Pb	$X < (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X > (1300+3\sigma)$
Hg	$X < (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X > (1300+3\sigma)$
Cr	$X < (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	COMPLEX MATERIAL		
	BL	INCONCLUSIVE	OL
Cd	$X < (50-3\sigma)$	$(50-3\sigma) < X < (150+3\sigma)$	$X > (150+3\sigma)$
Pb	$X < (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X > (1500+3\sigma)$
Hg	$X < (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X > (1500+3\sigma)$
Br	$X < (250-3\sigma)$	$X > (250-3\sigma)$	NA
Cr	$X < (500-3\sigma)$	$X > (500-3\sigma)$	NA

**2.2. POLYBROMINATED BIPHENYLS AND POLYBROMINATED DIPHENYL ETHERS CONTENT**

Test Method: With reference to EN 62321:2009, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting Limit: 5mg/kg]

Test Item		Result [mg/kg]		RoHS Requirement [mg/kg]
		Sample 037+047+060	Sample 038+063	
PBBs	Monobromobiphenyl	< 5	< 5	Sum of PBBs < 1000
	Dibromobiphenyl	< 5	< 5	
	Tribromobiphenyl	< 5	< 5	
	Tetrabromobiphenyl	< 5	< 5	
	Pentabromobiphenyl	< 5	< 5	
	Hexabromobiphenyl	< 5	< 5	
	Heptabromobiphenyl	< 5	< 5	
	Octabromobiphenyl	< 5	< 5	
	Nonabromobiphenyl	< 5	< 5	
	Decabromobiphenyl	< 5	< 5	
	Sum of PBBs	< 5	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	< 5	Sum of PBDEs < 1000
	Dibromodiphenyl Ether	< 5	< 5	
	Tribromodiphenyl Ether	< 5	< 5	
	Tetrabromodiphenyl Ether	< 5	< 5	
	Pentabromodiphenyl Ether	< 5	< 5	
	Hexabromodiphenyl Ether	< 5	< 5	
	Heptabromodiphenyl Ether	< 5	< 5	
	Octabromodiphenyl Ether	< 5	< 5	
	Nonabromodiphenyl Ether	< 5	< 5	
	Decabromodiphenyl Ether	< 5	< 5	
	Sum of PBDEs	< 5	< 5	

Note:

- “mg/kg” denotes miligram per kilogram
- “<” denotes less than

**2.3. HEAVY METAL CONTENT**

Test method: With reference to EN 62321:2009, analyzed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and UV-Vis spectrophotometer. [Reporting Limit: 2mg/kg for cadmium; 10mg/kg for hexavalent chromium, lead and mercury.]

Sample No.	Result [mg/kg]			
	Total Cadmium	Hexavalent Chromium	Total Mercury	Total Lead
011	--	Negative	--	--
015	--	Negative	--	--
016	--	Negative	--	--
017	--	--	--	3.17x10 <sup>4(a)</sup>
025	--	Negative	--	--
054	--	Negative	--	--
056	--	Negative	--	--
071	--	Negative	--	--
<b>RoHS Requirement</b>	100	1000	1000	1000

Note:

- “mg/kg” denotes milligram per kilogram
- “<” denotes less than
- “Negative” denotes the absence of Cr(VI) coating.
- “--” denotes tested by XRF, result is listed in 2.1
- “(a)” denotes the exempt item according to DIRECTIVE 2011/65/EU Annex III item 6(c) “Copper alloy containing up to 4 % lead by weight”.

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TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch  
 TÜV SÜD Group

Prepared by:



**Kevin Cheng**  
**Project Handler**



Reviewed by:



**Mario Ma**  
**Designated Reviewer**

**APPENDIX:**

Photos of submitted products



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