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The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
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Product Type	Model/Type Reference	Report Reference #	Status
Digital Video Recorder	SVR-430	E158873-A2-UL	
Video Presenter	UF-80, UF-80DX, UF-80ST	E158873-A4-UL	
Video Presenter	SDP-900DXAN, SDP-950DXAN, SDP-950STAN	E158873-A6-UL	
Video Presenter	SDP-850, SDP-850DX	E158873-A9-UL	
Video Presenter	SDP-6500DXA	E158873-A12-UL	
Video Presenter	UF-130DX	E158873-A14-UL	
Video Presenter	UF-130ST	E158873-A15-UL	
Network Video Recorder	SNR-6400, SNR-3200, SRN-3250, SRN-6450	E158873-A16-UL	
Video Presenter	SDP-860	E158873-A18-UL	
Digital Video Recorder.	SVR-1670	E158873-A19-UL	
UTP Power Supply Unit	SPU-400	E158873-A20-UL	Withdrawn
Digital Video Recorder.	SRD-1630D, SRD-1630, SRD-1610D, SRD-1610, SRD-830D, SRD-830, SRD-1670D, SRD-1670DC, SRD-1670, SRD-1671, SRD-870D, SRD-870DC, SRD-870, SRD-871, SRD-1650D, SRD-1650DC, SRD-1650, SRD-1651, SRD-850D, SRD-850DC, SRD-850, SRD-851, SRD-1630DCP, SRD-1630DCN, SRD-1610DCP, SRD-1610DCN, SRD-830DCP, SRD-830DCN, SRD-####\$&@	E158873-A24-UL	
Digital Presenter	SDP-760	E158873-A44-UL	
Network Camera	SNP-5300H*, SNP-6201H* (* is N or P: N = NTSC, P=PAL)	E158873-A45-UL	
Network Camera	SND-7011*, SND-5011*, SND-5061*, SND-7061*, SNV-5010*, SNZ-5200* (* is N or P: N = NTSC, P=PAL)	E158873-A46-UL	
Network Camera	SNP-5300*, SNP-6201* (* is N or P: N = NTSC, P=PAL)	E158873-A47-UL	
Digital Color Camera	SCP-3371H*, SCP-2371H*, SCP-2271H*, SCP-2373H*, SCP-2273H* (* is N or P: N = NTSC, P=PAL)	E158873-A48-UL	
Digital Color Camera	SCP-3371*, SCP-2371*, SCP-2271*, SCP-2373*, SCP-2273* (* is N or P: N = NTSC, P=PAL)	E158873-A49-UL	
Network Camera	SND-7082*, SND-7082F*, SNV-7082* (* is N or P: N = NTSC, P=PAL)	E158873-A50-UL	
Network Camera	SNB-7001*, SNB-5001*, SNB-3002* (* is N or P: N = NTSC, P=PAL)	E158873-A51-UL	
Network Camera	SNO-7082R* (* is N or P: N = NTSC, P=PAL)	E158873-A52-UL	
Network Camera	SNB-7002* (* is N or P: N = NTSC, P=PAL)	E158873-A53-UL	
DIGITAL COLOR CAMERA	SCV-2010F*, SCD-1020R*, SCD-2080R*, SCD-2020R*, SCD-2010*, SCD-2010B*, SCD-2010F*, SCB-3020*, SCB-3021*, SCB-2010*, SCO-1020R* (* is N or P: N=NTSC, P=PAL)	E158873-A54-UL	
Network Camera	SNB-6004*, SNB-6003*, SNB-5004*, SNB-5003*, SNB-7004*, SNB-6005* (* is N or P: N = NTSC, P=PAL)	E158873-A55-UL	
Network Camera	SND-6084*, SND-6083*, SND-5084*, SND-5083*,	E158873-A56-UL	

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	SND-7084* (* is N or P: N = NTSC, P=PAL)		
DIGITAL COLOR CAMERA	SCD-2022*, SCD-2022R*, SCD-2042R* (* is N or P: N = NTSC, P=PAL)	E158873-A58-UL	
Digital Color Camera	SCB-2004*, SCB-2005* (* is N or P: N = NTSC, P=PAL);	E158873-A59-UL	
Digital Color Camera	SCD-2082*, SCV-2082R*, SCV-3083*, SCD-3083* (* is N or P: N = NTSC, P=PAL)	E158873-A60-UL	
Network Camera	SND-6084R*, SND-7084R*, SND-5084R* (* is N or P: N = NTSC, P=PAL)	E158873-A61-UL	
NETWORK CAMERA	SNO-6084R*. SNO-7084R* (* is N or P: N = NTSC, P=PAL)	E158873-A62-UL	
Network Camera	SNV-6084R*, SNV-6084*, SNV-5084*, SNV-7084*, SNV-7084R*, SNV-5084R*, SNV-6084T* (* is N or P: N = NTSC, P=PAL)	E158873-A63-UL	
Digital Color Camera	SCO-2081R* (* is N or P: N = NTSC, P=PAL)	E158873-A64-UL	
DIGITAL COLOR CAMERA	SCB-2004*D, SCB-2005*D (* is N or P: N = NTSC, P=PAL)	E158873-A65-UL	
DIGITAL VIDEO RECORDER	SRD-1673D*, SRD-1654D*, SRD-854D*, SRD-852D*, SRD-1673*, SRD-1653*, SRD-873*, SRD-1640*, SRD-840* (* is N or P, N=NTSC / P=PAL)	E158873-A66-UL	
Network Camera	SNP-6200RH*, SCP-2370RH* (* is N or P: N=NTSC,P=PAL)	E158873-A67-UL	
Network Camera	SNV-6012M* (* is N or P: N = NTSC, P=PAL)	E158873-A68-UL	
Network Camera	SNF-7010*, SNF-7010V*, SNF-7010VM* (* is N or P: N = NTSC, P=PAL)	E158873-A69-UL	
Network Camera	SNO-6011R* (* is N or P: N = NTSC, P=PAL)	E158873-A72-UL	
Network Camera	SND-6011R* (* is N or P: N = NTSC, P=PAL)	E158873-A73-UL	
Digital Video Recorder	SRD-1680D*, SRD-880D* (* is N:NTSC / P:PAL)	E158873-A74-UL	
DIGITAL COLOR CAMERA	SCZ-2373*, SCZ-2273* (* is N or P: N = NTSC, P=PAL)	E158873-A75-UL	
NETWORK CAMERA	SCO-6081R* (* is N or P: N = NTSC, P=PAL)	E158873-A76-UL	
DIGITAL COLOR CAMERA	SCV-6081R* and SCD-6081R* (* is N or P: N = NTSC, P=PAL)	E158873-A77-UL	
NETWORK VIDEO RECORDER	SRN-4000	E158873-A78-UL	
DIGITAL COLOR CAMERA	SCD-6021* (* is N or P: N = NTSC, P=PAL)	E158873-A81-UL	
NETWORK CAMERA	SNV-6013* (* is N or P: N = NTSC, P=PAL)	E158873-A83-UL	
NETWORK CAMERA	SNB-6010*, SNB-6010A*, SNB-6011*, SNB-6010B*, SNB-6011B* (* is N or P: N = NTSC, P=PAL)	E158873-A85-UL	
NETWORK CAMERA	SNP-6320H*, SNP-5430H* (* is N or P: N = NTSC, P=PAL)	E158873-A86-UL	
NETWORK CAMERA	SNP-6320*, SNP-5430* (* is N or P: N = NTSC, P=PAL)	E158873-A87-UL	
Network Video Recorder	SRN-472S, XRN-810S* (* is N or P: N = NTSC, P=PAL)	E158873-A88-UL	
Digital Video Recorder	SRD-1676D*, SRD-1656D*, SRD-876D* (* is N or P, N=NTSC/ P=PAL)	E158873-A89-UL	
DIGITAL COLOR CAMERA	SCB-5000* (* is N or P: N = NTSC, P=PAL)	E158873-A90-UL	

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DIGITAL COLOR CAMERA	SCB-5000*D (* is N or P: N = NTSC, P=PAL)	E158873-A91-UL	
DIGITAL COLOR CAMERA	SCD-5080* (* is N or P: N = NTSC, P=PAL)	E158873-A92-UL	
DIGITAL COLOR CAMERA	SCB-5003*, SCB-5005*, HCB-6001* (* is N or P: N = NTSC, P=PAL)	E158873-A94-UL	
DIGITAL COLOR CAMERA	SCV-5082* (* is N or P: N = NTSC, P=PAL)	E158873-A95-UL	
DIGITAL COLOR CAMERA	SCD-5083*, SCD-5083R*, SCD-5082*, SCD-5083B*, SCD-5081R* (* is N or P: N = NTSC, P=PAL)	E158873-A96-UL	
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NETWORK CAMERA	SNF-8010VM*, SNF-8010* (* is N or P: N = NTSC, P=PAL)	E158873-A98-UL	
DIGITAL COLOR CAMERA	SCD-5030*, SCD-5020* (* is N or P: N = NTSC, P=PAL)	E158873-A99-UL	
NETWORK CAMERA	SNO-5084R* (* is N or P: N = NTSC, P=PAL)	E158873-A100-UL	
DIGITAL COLOR CAMERA	SCO-5083R*, SCO-5081R* (* is N or P: N = NTSC, P=PAL)	E158873-A101-UL	
NETWORK CAMERA	SNP-6321*, SNP-L6233* (* is N or P: N = NTSC, P=PAL)	E158873-A102-UL	
NETWORK CAMERA	SNP-6321H*, SNP-L6233H* (* is N or P: N = NTSC, P=PAL)	E158873-A103-UL	
DIGITAL COLOR CAMERA	SCV-5085* (* is N or P: N = NTSC, P=PAL)	E158873-A104-UL	
NETWORK CAMERA	SNB-8000* (* is N or P: N = NTSC, P=PAL)	E158873-A105-UL	
NETWORK CAMERA	SNV-8080* (* is N or P: N = NTSC, P=PAL)	E158873-A106-UL	
NETWORK CAMERA	SNZ-6320	E158873-A107-UL	
NETWORK CAMERA	SNP-6320RH*, SNP-L6233RH* (* is N or P: N=NTSC,P=PAL)	E158873-A108-UL	
NETWORK CAMERA	SNP-5321H*, SNP-L5233H* (* is N or P: N = NTSC, P=PAL)	E158873-A109-UL	
NETWORK CAMERA	SNP-5321*, SNP-L5233* (* N: NTSC / P:PAL)	E158873-A110-UL	
NETWORK CAMERA	SND-L6013R*, SND-L6013*, SND-L6012*, SND-L5013* (* is N or P: N:NTSC/ P:PAL)	E158873-A111-UL	
NETWORK CAMERA	SNO-L6083R*, SNO-L5083R* (* is N or P: N = NTSC, P=PAL)	E158873-A113-UL	
Network Video Recorder	SRN-1673S*(* is N or P)	E158873-A115-UL	
NETWORK CAMERA	SNO-L6013R* (* is N or P: N = NTSC, P=PAL)	E158873-A118-UL	
NETWORK CAMERA	SND-L6083R*, SND-L5083R* (* is N or P: N = NTSC, P=PAL)	E158873-A119-UL	
Network Video Recorder	SRN-873S* (* is N or P: N = NTSC, P=PAL)	E158873-A120-UL	
NETWORK CAMERA	SNV-L6083R*, SNV-L5083R* (* is N or P: N = NTSC, P=PAL)	E158873-A121-UL	
NETWORK	SNB-9000* (* is N or P: N = NTSC, P=PAL)	E158873-A122-UL	

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NETWORK CAMERA	SNO-8081R* (* is N or P: N = NTSC, P=PAL)	E158873-A128-UL	
NETWORK CAMERA	SNV-6085R* (* is N or P: N = NTSC, P=PAL) SNV-6085* (* is N or P: N = NTSC, P=PAL)	E158873-A129-UL	
DIGITAL COLOR CAMERA	SCB-6003* (* is N or P: N = NTSC, P=PAL)	E158873-A130-UL	
DIGITAL COLOR CAMERA	SCO-6023R* (* is N or P: N = NTSC, P=PAL)	E158873-A132-UL	
DIGITAL COLOR CAMERA	SCV-6083R* (* is N or P: N = NTSC, P=PAL)	E158873-A133-UL	
DIGITAL COLOR CAMERA	SCV-6023R* (* is N or P: N = NTSC, P=PAL)	E158873-A135-UL	
DIGITAL COLOR CAMERA	SCD-6023R*, SCD-6013* (* is N or P: N = NTSC, P=PAL)	E158873-A136-UL	
DIGITAL COLOR CAMERA	SCD-6083R* (* is N or P: N = NTSC, P=PAL)	E158873-A137-UL	
DIGITAL COLOR CAMERA	SCO-6083R* (* is N or P: N = NTSC, P=PAL)	E158873-A138-UL	
NETWORK CAMERA	SNV-L6014RM*, SNV-L6013R* (* is N or P: N = NTSC, P=PAL)	E158873-A139-UL	
DIGITAL COLOR CAMERA	PNO-9080R* (* is N or P: N = NTSC, P=PAL)	E158873-A140-UL	
NETWORK CAMERA	PNV-9080R* (* is N or P: N = NTSC, P=PAL)	E158873-A141-UL	
NETWORK CAMERA	PND-9080R* (* is N or P: N = NTSC, P=PAL)	E158873-A142-UL	
Digital Video Recorder	SRD-1685*, SRD-894*, HRD-842* (* is N or P, N=NTSC/ P=PAL)	E158873-A143-UL	
Digital Video Recorder	SRD-1694*, HRD-1642* (* is N or P, N=NTSC/ P=PAL)	E158873-A144-UL	
Network Video Recorder (NVR)	XRN-2011*, XRN-2010*, XRN-3010*, XRN-1610* (* is N or P: N=NTSC, P=PAL)	E158873-A146-UL	
NETWORK CAMERA	QNO-7030R*, QNO-7020R*, QNO-7010R*, QNO-6030R*, QNO-6020R*, QNO-6010R*, QNO-6070R*, QNO-7080R*, QNO-6071R* (* is N or P: N = NTSC, P=PAL)	E158873-A147-UL	
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NETWORK CAMERA	QNV-7030R*, QNV-7020R*, QNV-7010R*, QNV-6030R*, QNV-6020R*, QNV-6010R*, QNV-6070R*, QNV-7080R* (* is N or P: N = NTSC, P=PAL)	E158873-A149-UL	
Network Video Recorder	XRN-1610S* (* is N or P: N=NTSC, P=PAL)	E158873-A150-UL	
NETWORK CAMERA	PNF-9010RV*, PNF-9010R*, PNF-9010RVM* (* is N or P: N = NTSC, P=PAL)	E158873-A151-UL	

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Network Video Recorder	PRN-4011* (* is N or P: N=NTSC, P=PAL)	E158873-A153-UL	
DIGITAL COLOR CAMERA	HCP-6320*, HCP-6320A*, HCP-6230* (* is N or P: N = NTSC, P=PAL)	E158873-A154-UL	
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NETWORK CAMERA	PNP-9200RH*, XNP-6370RH*, XNP-6330RH* (* is N or P: N=NT, P=PAL)	E158873-A156-UL	
NETWORK CAMERA	XNB-8000*, XNB-6000* (* is N or P: N = NTSC, P=PAL)	E158873-A157-UL	
NETWORK CAMERA	XNO-8080R*, XNO-6080R*, XNO-6120R* (* is N or P: N = NTSC, P=PAL)	E158873-A158-UL	
NETWORK CAMERA	XNV-8040R*, XNV-8030R*, XNV-8020R*, XNV-6020*, XNV-6010*, XNV-6020R* (* is N or P: N = NTSC, P=PAL)	E158873-A159-UL	
NETWORK CAMERA	XND-8040R*, XND-8030R*, XND-8020R*, XND-6020*, XND-6010*, XND-6020R* (* is N or P: N = NTSC, P=PAL)	E158873-A160-UL	
NETWORK CAMERA	XNV-8080R* (* is N or P: N = NTSC, P=PAL) XNV-6080R* (* is N or P: N = NTSC, P=PAL) XNV-6080* (* is N or P: N = NTSC, P=PAL) XNV-6120R* (* is N or P: N = NTSC, P=PAL) XNV-6120* (* is N or P: N = NTSC, P=PAL)	E158873-A161-UL	
NETWORK CAMERA	XND-8080RV*, XND-8080R*, XND-6080RV*, XND-6080R*, XND-6080V*, XND-6080* (* is N or P: N = NTSC, P=PAL)	E158873-A162-UL	
AHD Multi Directional Camera	HCM-9020VQ* (* is N or P: N = NTSC, P=PAL)	E158873-A163-UL	
NETWORK CAMERA	XNO-8020R*, XNO-8030R*, XNO-8040R*, XNO-6010R*, XNO-6020R* (* is N or P: N = NTSC, P=PAL)	E158873-A164-UL	
NETWORK CAMERA	XNV-6011* (* is N or P: N = NTSC, P=PAL)	E158873-A165-UL	
DIGITAL COLOR CAMERA	HCD-6080R*, HCD-6070R* (* is N or P: N = NTSC, P=PAL)	E158873-A167-UL	
DIGITAL COLOR CAMERA	HCV-6080R*, HCV-6070R* (* is N or P: N = NTSC, P=PAL)	E158873-A168-UL	
NETWORK CAMERA	XNP-6120H* (* is N or P: N = NTSC, P=PAL)	E158873-A169-UL	
NETWORK CAMERA	XND-8020F*, XND-6011F* (* is N or P: N = NTSC, P=PAL)	E158873-A170-UL	
NETWORK CAMERA	PNM-9080VQ* (* is N or P: N = NTSC, P = PAL)	E158873-A172-UL	
Network Storage	SRB-160S	E158873-A173-UL	
NETWORK CAMERA	TNB-6030* (* is N or P: N = NTSC, P = PAL)	E158873-A174-UL	
NETWORK CAMERA	PNM-9081VQ* (* is N or P: N = NTSC, P = PAL)	E158873-A176-UL	
NETWORK CAMERA	XNO-6085R* (* is N or P: N = NTSC, P=PAL)	E158873-A177-UL	
NETWORK CAMERA	XNB-6005* (* is N or P: N = NTSC, P=PAL)	E158873-A178-UL	
NETWORK VIDEO	SNR-D5401N	E158873-A179-UL	

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RECORDER			
NETWORK CAMERA	XND-6085*, XND-6085V* (* is N or P: N = NTSC, P=PAL)	E158873-A180-UL	
NETWORK CAMERA	XNV-6085* (* is N or P: N = NTSC, P=PAL)	E158873-A181-UL	
NETWORK CAMERA	XNP-6040H* (* is N or P: N = NTSC, P=PAL)	E158873-A182-UL	
NETWORK VIDEO DECODER	SPD-150* (* is N or P: N = NTSC, P=PAL)	E158873-A184-UL	
DIGITAL COLOR CAMERA	HCB-6000*, HCB-7000* (* is N or P: N = NTSC, P=PAL)	E158873-A185-UL	
DIGITAL COLOR CAMERA	HCZ-6320* (* is N or P: N = NTSC, P=PAL)	E158873-A186-UL	
NETWORK CAMERA	XNF-8010RVM*, XNF-8010RV*, XNF-8010R* (* is N or P: N = NTSC, P=PAL)	E158873-A187-UL	
DIGITAL COLOR CAMERA	HCO-6070R*, HCO-6080R* (* is N or P: N = NTSC, P=PAL)	E158873-A188-UL	
NETWORK CAMERA	XNB-6001* (* is N or P: N = NTSC, P=PAL)	E158873-A189-UL	
DIGITAL COLOR CAMERA	HCO-7070R* (* is N or P: N = NTSC, P=PAL)	E158873-A190-UL	
LENS MODULE	SLA-T2480*, SLA-T2480V*, SLA-T4680*, SLA-T4680V* (* is N or P: N = NTSC, P=PAL)	E158873-A191-UL	
DIGITAL COLOR CAMERA	HCD-7070R* (* is N or P: N = NTSC, P=PAL)	E158873-A192-UL	
DIGITAL COLOR CAMERA	HCV-7070R* (* is N or P: N = NTSC, P=PAL)	E158873-A193-UL	
NETWORK VIDEO RECORDER	TRM-1610S	E158873-A194-UL	
LENS MODULE	SLA-T1080F* (* is N or P: N = NTSC, P=PAL)	E158873-A195-UL	
NETWORK SWITCH	SPN-10080P, SPN-10080PM	E158873-A196-UL	
ANALOG CAMERA	HCV-7010R*, HCV-7020R*, HCV-7030R* (* is N or P: N = NTSC, P=PAL)	E158873-A197-UL	
DIGITAL COLOR CAMERA	HCD-7010R*, HCD-7020R*, HCD-7030R* (* is N or P: N = NTSC, P=PAL)	E158873-A198-UL	
DIGITAL COLOR CAMERA	HCO-7010R*, HCO-7020R*, HCO-7030R* (* is N or P: N = NTSC, P=PAL)	E158873-A199-UL	
NETWORK CAMERA	XNP-6320, QNP-6230	E158873-A200-UL	
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NETWORK CAMERA	XNV-6012M, XNV-6012	E158873-A206-UL	
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NETWORK CAMERA	LNV-6070R	E158873-A210-UL	
NETWORK	LND-6070R	E158873-A213-UL	

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CAMERA			
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CERTIFICATE OF COMPLIANCE

Certificate Number 20180212-E158873
Report Reference E158873-A209-UL
Issue Date 2018-FEBRUARY-12

Issued to: Hanwha Techwin Co Ltd
1204 Changwon-daero Seongsan-gu
Changwon-si Gyeongsangnam-do 51542 KOREA

This is to certify that representative samples of Information Technology Equipment Including Electrical Business Equipment
NETWORK CAMERA, Models:LNO-6030R, LNO-6020R, LNO-6010R

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 60950-1, Information Technology Equipment - Safety - Part 1: General Requirements
CAN/CSA C22.2 No. 60950-1-07, Information Technology Equipment - Safety - Part 1: General Requirements

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

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UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	NWQG, NWGQ7 (Information Technology Equipment Including Electrical Business Equipment)
Product:	NETWORK CAMERA
Model:	LNO-6030R, LNO-6020R, LNO-6010R
Rating:	PoE (37-57Vdc), 0.18 A
Applicant Name and Address:	HANWHA TECHWIN CO LTD 1204 CHANGWON-DAERO SEONGSAN-GU CHANGWON-SI GYEONGSANGNAM-DO 51542 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

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Prepared by: Sungil Kim

Reviewed by: Byeonguk Lee

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
 - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

NETWORK CAMERA with IR LED for indoor use.

Model Differences

Basic model is LNO-6030R. (Lens size: 6.0 mm)

Model LNO-6020R is identical to basic model LNO-6030R except for lens size and model designation. (Lens size: 3.6 mm)

Model LNO-6010R is identical to basic model LNO-6030R except for lens size and model designation. (Lens size: 2.8 mm)

Technical Considerations

- Equipment mobility : stationary
- Connection to the mains : No direct connection
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC I
- Mains supply tolerance (%) or absolute mains supply values : No direct connection
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class III (supplied by SELV)
- Considered current rating of protective device as part of the building installation (A) : N/A
- Pollution degree (PD) : N/A
- IP protection class : IP X0
- Altitude of operation (m) : Up to 2 000
- Altitude of test laboratory (m) : Less than 2 000
- Mass of equipment (kg) : 0.23
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 55 °C
- The product was investigated to the following additional standards: IEC 62471

- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- Marking Label is representatives of all models.

Additional Information

Original (4788340308)

Maximum normal load: Continuous operation with IR LED on.

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Replaceable batteries	"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."
Installation Manual - Network Environment	The following statement or similar shall be included in the User Manual: "Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building."
Installation Manual - UL Listed PoE Source	The following statement or similar shall be included in the User Manual: "The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802-3af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1."
Installation Manual - Selection of Power Supply	The Users Manual should provide simple instructions for the correct selection of a suitable Listed Class 2 Power Units, including a statement such as "This product is intended to be supplied by Power Unit marked "Class 2" or "LPS" and rated PoE(37 V - 57 V), 0.18 A."

Special Instructions to UL Representative

N/A

Production-Line Testing Requirements**Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.**

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
N/A						

Earthing Continuity Test Exemptions - This test is not required for the following models:

All models

Electric Strength Test Exemptions - This test is not required for the following models:

All models

Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:**Sample and Test Specifics for Follow-Up Tests at UL**

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					

1.5.1	TABLE: list of critical components					Pass
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Transparent cover enclosure (Plastic)	SABIC JAPAN L L C	143R(f1)	Min. 2.0 mm thickness, HB, 125 deg.C, No openings.	QMFZ2	UL (E207780)	
External side enclosure (Plastic)	COVESTRO DEUTSCHLAND AG [PC RESINS]	6165 X + (z)(f1)	Min. 1.3 mm thickness, V-0, 115 deg.C, No openings.	QMFZ2/8	UL (E41613)	
Internal plastic parts	LOTTE ADVANCED MATERIALS CO LTD	NH-1035(+)	Min. 1.5 mm thickness, V-0, 80 deg. C, No openings.	QMFZ2/8	UL (E115797)	
Transformer (T2)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO LTD	PDT2431SR	130 deg.C, See enclosure for more detail.	-	-	
Opto-coupler (LS1)	LITE-ON TECHNOLOGY CORP	LTV-816	Isolation Voltage: 5 300. Max. Operation Temperature: 110 deg.C	FPQU2/8	UL (E113898)	
Rechargeable button cell battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Lithium (Coin), Rechargeable, Max. 3.4 Vdc, Max. 300 mA.	BBCV2	UL (MH15628)	
Connectors and Receptacles (Secondary circuits)	Interchangeable	Interchangeable	-	ECBT2 or RTRT2	UL	
(Alternate)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated Min. V-2	QMFZ2	UL	
Internal Wiring (Secondary)	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; Min. 30 V, 80 deg.C	AVLV2	UL	
LED	CYBRIGHT IR LED	XB-L5BT3BAD-80	VF =Max. 1.8 V, IF=Max.100 mA, 14 EA, See enclosure for more detail.	-	-	
Thermal Pad	KOMOTECH CO LTD	GP-1	Min. 0.35 mm thickness, rated V-0, 150 deg.C	QMFZ2	UL (E245303)	
Cable	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE,	AVLV2	UL	

			neoprene, polyimide or marked VW-1; Min. 30 V, 80 deg.C			
FPWB	Interchangeable	Interchangeable	Min. V-0, 80 deg.C.	QMFZ2 or QMTS2	UL	
PWB	Interchangeable	Interchangeable	Min. V-1, 105 deg. C.	ZPMV2	UL	
Label	Interchangeable	Interchangeable	Min.70 deg.C if max. surface temperature not specified.	PGDQ2 or PGJ12	UL	

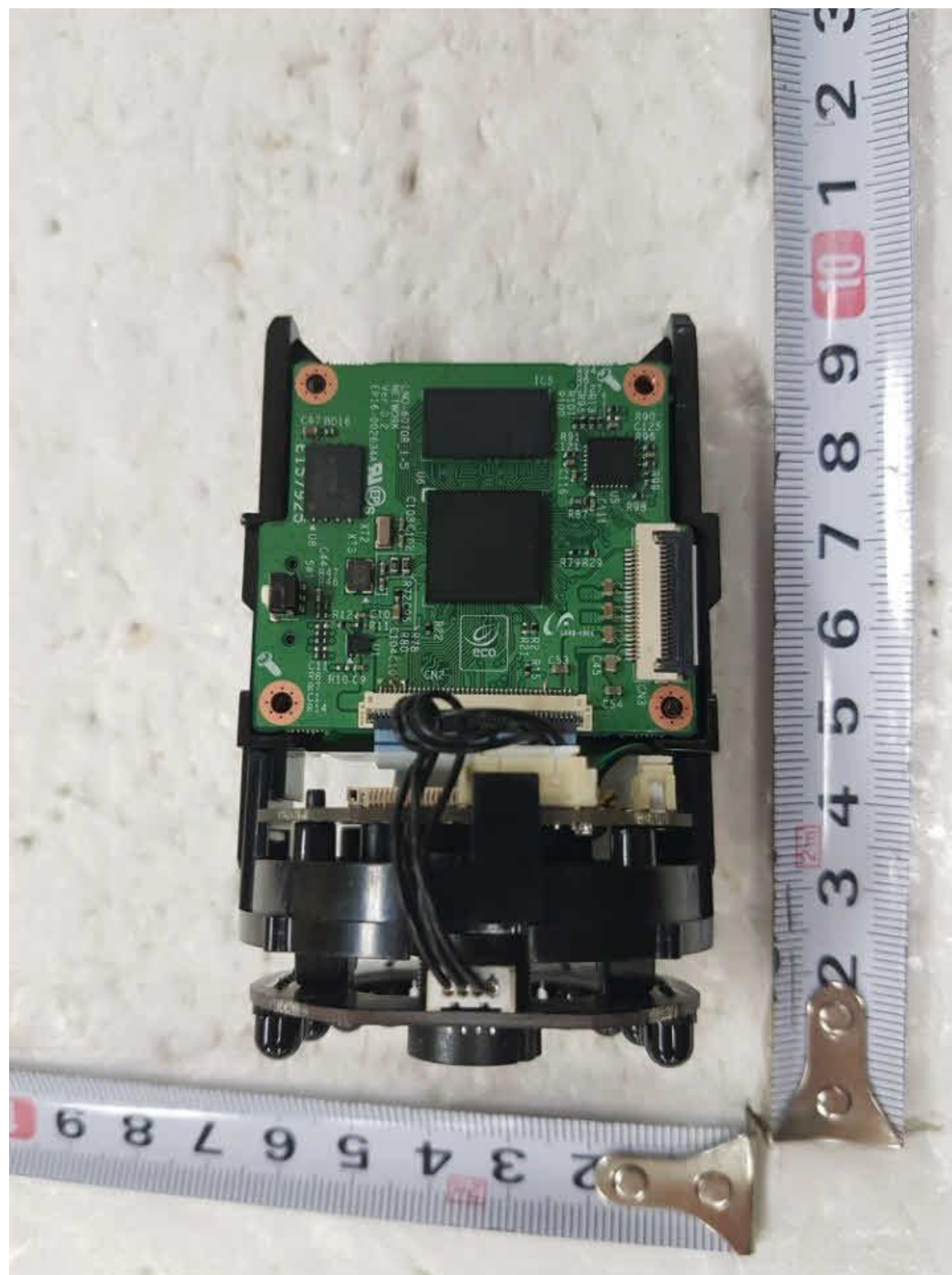
Enclosures

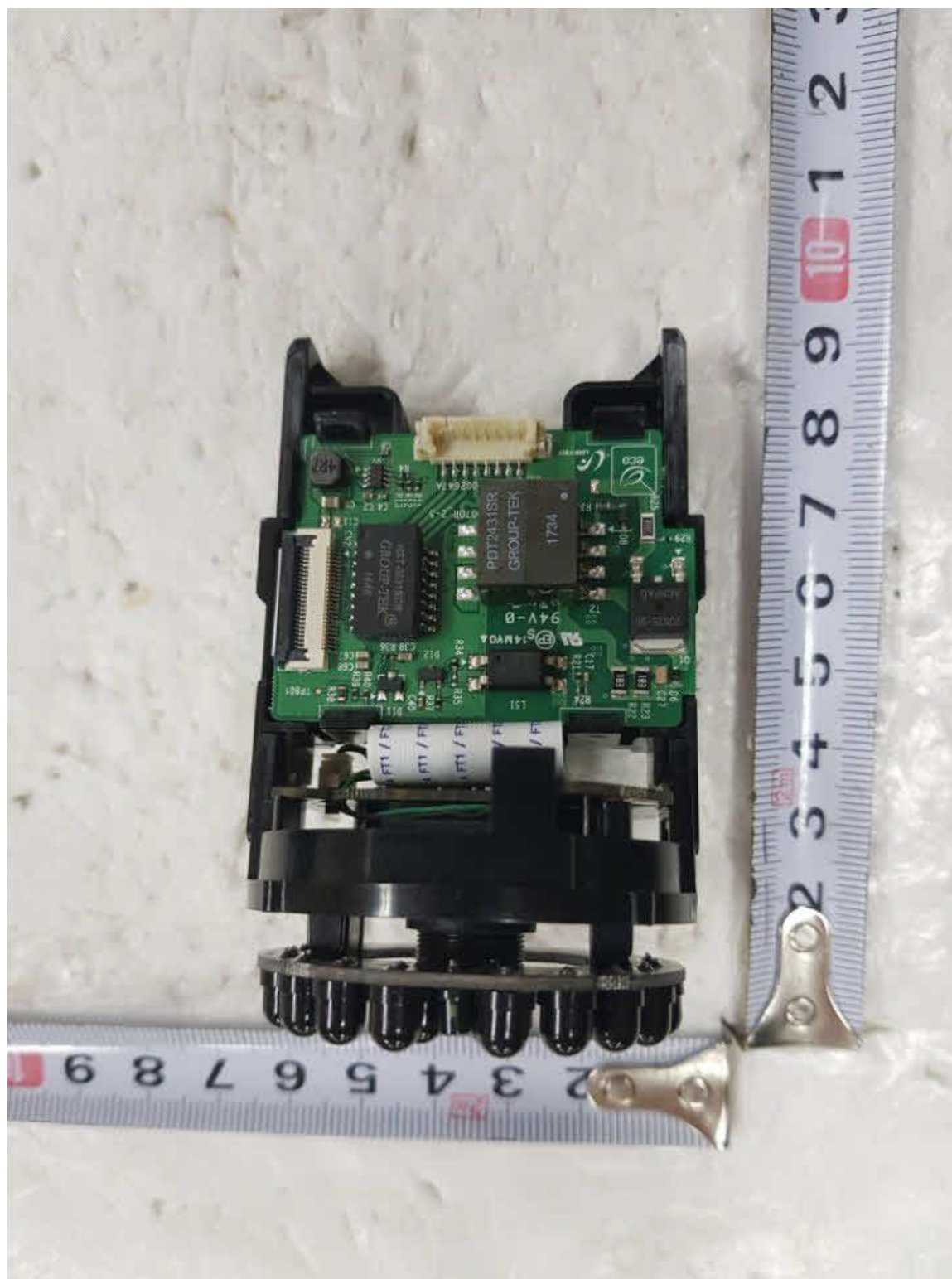
<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	Overall view
Photographs	3-02	Internal view -1
Photographs	3-03	Internal view -2
Photographs	3-04	Main board
Photographs	3-05	Power board
Photographs	3-06	Heatsink
Manuals	6-01	Manual
Miscellaneous	7-01	Transformer (T2) spec by SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO LTD
Miscellaneous	7-02	Enclosure dimension
Miscellaneous	7-03	Label
Miscellaneous	7-04	Dual language safety labeling CRD
Miscellaneous	7-05	IEC 62471 report

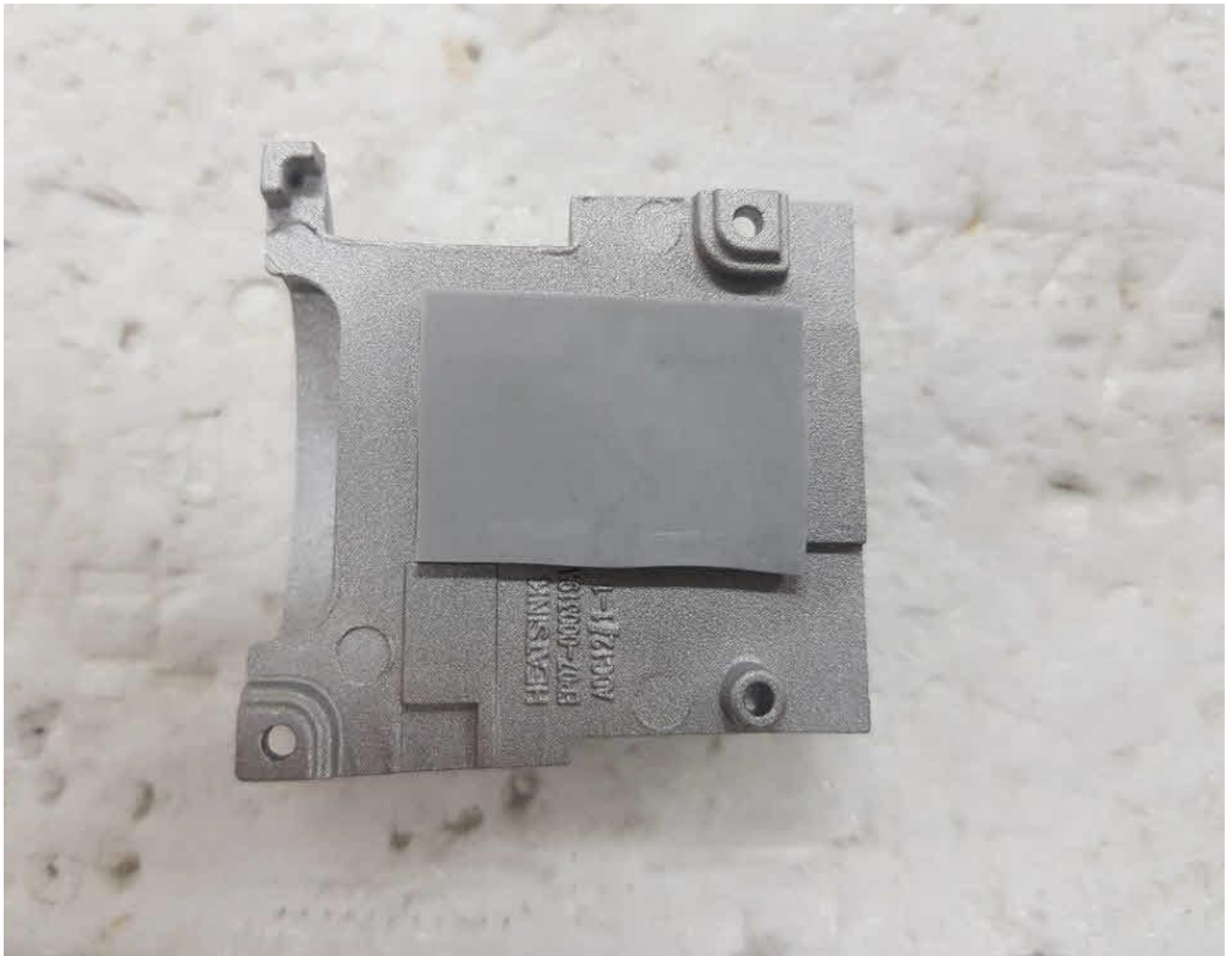












overview

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" and rated from PoE, 0.18A.
16. If you use excessive force when installing the product, the camera may be damaged and malfunction. If you forcibly install the product using non-compliant tools, the product may be damaged.
17. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
This may cause damage to the product.
18. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
19. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
Install the product by referring to "Installation & connection" in the user manual.
20. Installing or using the product in water can cause serious damage to the product.



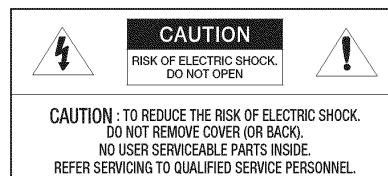
WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

overview

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Please use the input power with just one camera and other devices must not be connected.

The ITE is to be connected only to PoE networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802-3af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102.
As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.
The high temperature of the product surface may cause a burn.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
 - Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction
- ※ Please read this manual for the safety before using of goods and keep it in the safe place.

WARNING

To prevent damage which may caused by IR LED, don't stare at operating lamp.

For below models only.

LND-6010R/LND-6020R/LND-6030R/LND-6070R

LNO-6010R/LNO-6020R/LNO-6030R/LNO-6070R

LVN-6010R/LNV-6020R/LNV-6030R/LNV-6070R

Risk Group 1

WARNING IR emitted from this product.

Do not stare at operating lamp.

Product tested against IEC 62471

présentation

INSTRUCTIONS IMPORTANTES RELATIVES À LA SÉCURITÉ

1. Veuillez lire ces instructions.
2. Conservez ces instructions.
3. Prêtez attention à tous les avertissements.
4. Veuillez suivre toutes les instructions.
5. N'utilisez pas cet appareil à proximité de l'eau.
6. Nettoyez la zone contaminée sur la surface du produit avec un chiffon doux et sec ou un chiffon humide. (Ne pas utiliser un détergent ou des produits cosmétiques contenant de l'alcool, des solvants et des tensioactifs ou des produits contenant du pétrole, car ils peuvent déformer ou endommager le produit.)
7. N'obstruez pas les ouvertures de ventilation. Procédez à l'installation conformément aux instructions du fabricant.
8. Ne pas installer l'appareil à proximité de sources de chaleur comme les radiateurs, les registres de chaleur et les autres appareils (incluant les amplificateurs) produisant de la chaleur.
9. Veillez à vous conformer aux sécurités des prises de terre et polarisées. Une prise dite polarisée est composée de deux fiches, une plus large que l'autre. Une prise de terre est composée de deux fiches et d'une troisième fiche pour la terre. La troisième fiche, plus large que les deux autres, est fournie pour votre sécurité. Si la prise qui vous est fournie ne correspond pas à votre prise murale, demandez à un électricien de remplacer la prise obsolète.
10. Veillez à ce que personne ne marche ou se prenne les pieds dans le cordon d'alimentation et particulièrement au niveau des fiches et des prises de courant et au niveau où ils se situent.
11. N'utilisez que des accessoires ou des produits additionnels spécifiés par le fabricant.
12. Utilisez uniquement un chariot, un socle, un trépied, un support ou une table recommandés par le fabricant ou vendus avec l'appareil. Si vous utilisez un chariot, déplacez le chariot transportant l'appareil avec précaution afin d'éviter les blessures que pourrait entraîner un basculement accidentel.
13. Débranchez cet appareil en cas d'orage ou de non-utilisation prolongée.
14. Veuillez faire appel au personnel qualifié pour tous travaux de maintenance. Les travaux de maintenance sont nécessaires si l'appareil a été endommagé de quelque manière que ce soit, comme cordon d'alimentation endommagé, liquide répandu, objets tombés sur l'appareil, appareil exposé à la pluie et à l'humidité, il ne fonctionne pas normalement ou est tombé par terre.
15. Ce produit est destiné à être alimenté par un boîtier d'alimentation de «Classe 2» ou «LPS» ayant une puissance nominale de PoE, 0,16A.
16. Si vous utilisez une force excessive lors de l'installation du produit, la caméra risque d'être endommagée et de ne pas fonctionner correctement.
Si vous installez le produit à l'aide d'outils non conformes, le produit risque d'être endommagé.
17. Ne pas installer le produit dans un endroit où des substances chimiques ou des nuages d'huile existent ou peuvent être générés. Comme les huiles comestibles telles que l'huile de soja peuvent endommager ou déformer le produit, n'installez pas le produit dans la cuisine ou près de la table de cuisine. Cela peut endommager le produit.
18. Lors de l'installation du produit, veillez à ne pas laisser la surface du produit se colorer avec une substance chimique.
Certains solvants chimiques tels que des produits de nettoyage ou des adhésifs peuvent causer de graves dommages à la surface du produit.
19. Si vous installez / désassemblez le produit d'une manière qui n'a pas été recommandée, les fonctions / performances de production peuvent ne pas être garanties.
Installez le produit en vous référant à "Installation et connexion" dans le manuel d'utilisation.
20. L'installation ou l'utilisation du produit dans l'eau peut causer des dommages importants au produit.



AVERTISSEMENT

AFIN DE RÉDUIRE LE RISQUE D'INCENDIE OU DE DÉCHARGE ÉLECTRIQUE, N'EXPOSEZ PAS CET APPAREIL À LA PLUIE NI À L'HUMIDITÉ. NE PAS INSÉRER D'OBJET MÉTALLIQUE PAR LES FENTES DE VENTILATION OU TOUTE AUTRE OUVERTURE SITUÉE SUR L'ÉQUIPEMENT.

Veillez à éviter toute projection de liquide sur l'appareil et ne placez jamais sur celui-ci des récipients contenant des liquides, tels que des vases.

Pour éviter les blessures, cet appareil doit être fermement fixé au mur/plafond conformément aux consignes d'installation.

ATTENTION



EXPLICATION DES SYMBOLES GRAPHIQUES



Le symbole de l'éclair se terminant par une flèche inscrit dans un triangle équilatéral sensibilise l'utilisateur à la présence d'une « tension élevée » au sein de l'unité, susceptible d'être suffisamment puissante pour présenter un risque de décharge électrique.



Le symbole de point d'exclamation inscrit dans un triangle équilatéral sensibilise l'utilisateur à la présence d'importantes instructions de fonctionnement et de maintenance (entretien et réparation) dans la documentation accompagnant l'appareil.

présentation

Catégorie de classe I

Un appareil appartenant à une catégorie de type CLASSE I doit être connecté à la prise murale secteur dotée d'une connexion de mise à la terre de protection.

Batterie

Les batteries (module batterie ou piles installées) ne doivent pas être exposées à des températures excessives, telles que la chaleur du soleil, le feu ou toute autre source de même type.

Appareil déconnecté

Débranchez la prise principale de l'appareil si celui-ci est défectueux. Contactez un réparateur situé dans votre région.

Lorsque l'appareil est exploité hors des États-Unis, il est possible d'utiliser le code HAR pour recourir aux services d'une agence agréée.

ATTENTION

Il existe un risque d'explosion si la batterie est remplacée par une autre de modèle incorrect. Éliminez les batteries usagées conformément aux instructions.

Les instructions d'entretien sont fournies à l'intention d'un personnel qualifié exclusivement. Pour réduire les risques de chocs électriques, ne procédez pas à des réparations autres que celles qui sont indiquées dans les instructions de fonctionnement, à moins que vous ne soyez qualifié pour ce faire.

Veillez utiliser l'alimentation en entrée sur une seule caméra, les autres périphériques ne doivent pas être connectés.

L'ITE ne doit être connecté que sur un réseau PoE sans routage vers l'alimentation extérieure.

Veillez lire attentivement les consignes de sécurité recommandées ci-après.

- Ne placez pas cet appareil sur une surface inégale.
- N'installez pas l'appareil sur une surface où il pourrait être exposé à la lumière directe du soleil ou situé à proximité d'un équipement de chauffage ou d'une zone exposée à un froid extrême.
- Ne placez pas cet appareil à proximité de matériaux conducteurs.
- N'essayez de réparer cet appareil vous-même.
- Évitez de placer un verre d'eau sur ce produit.
- N'installez pas le produit à proximité de sources magnétiques.
- Ne bloquez pas les ouvertures de ventilation.
- Ne placez pas d'éléments lourds sur le produit.
- Veuillez porter des gants de protection lors de l'installation / retrait de la caméra. La température élevée de la surface du produit peut causer une brûlure.

Le guide de l'utilisateur est un manuel d'instructions portant sur l'utilisation du produit.

La signification des indications fournies dans le manuel est comme suit.

- Référence : Dans le cas de la fourniture d'informations pour aider à l'utilisation du produit.
- Notification : En cas de risques d'endommagement du produit et de blessures à l'utilisateur provoqués par le non respect des instructions fournies.

※ Veuillez lire ce manuel et notamment les passages liés à la sécurité du produit, et gardez-le en lieu sûr.

ATTENTION

Pour éviter tout dommage pouvant être causé par la DEL IR,

ne regardez pas le témoin de fonctionnement

Pour les modèles ci-dessous seulement.

LND-6010R/LND-6020R/LND-6030R/LND-6070R

LNO-6010R/LNO-6020R/LNO-6030R/LNO-6070R

LVN-6010R/LNV-6020R/LNV-6030R/LNV-6070R

Groupe de risque 1

AVERTISSEMENT IR émis par ce produit.




Ne pas regarder la lampe de commande

Produit testé contre IEC 62471

GROUP-TEK[®]

承认书

SPECIFICATION FOR APPROVAL

客户名称 CUSTOMER	
客户料号 MODEL NO.	
产品名称 PART NAME	POWER TRANSFORMER
产品型号 PART TYPE	PDT2431SR
版本 REV	X2
签名 SIGNATURE	制图:  2017-06-22 Drawn by 黄春梅 审核:  2017-06-22 Checked by 杨时启 批准:  2017-06-22 Approved by 欧阳伯萍
客户承认 CUSTOMER APPROVAL	承认印: SIGNET 签名: SIGNATURE

深圳市联泰兴电子科技有限公司**SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD**

地址: 深圳市宝安区石岩街道应人石工业区伟泰路 1 栋 (P. C: 518108)

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TEL: +86-755-29810619 29810976 FAX: +86-755-29810159

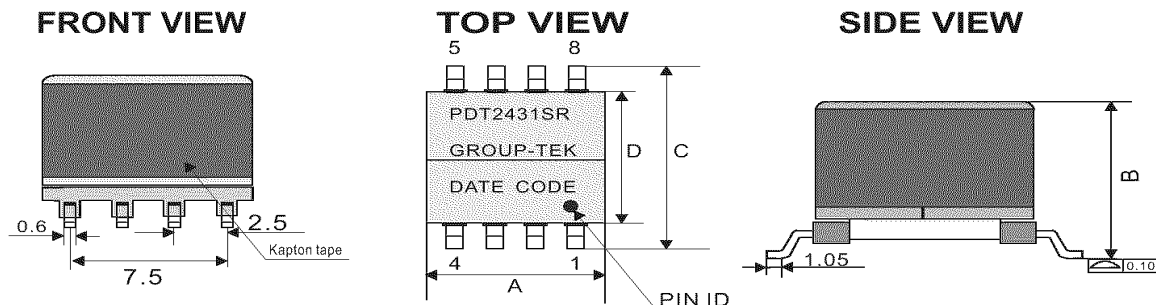
Http://www.group-tek.com E-mail:sale1@group-tek.com

GROUP-TEK[®]

A Leading Supplier of Magnetic Components

PDT2431SR

2. Mechanical Dimensions:



Note:

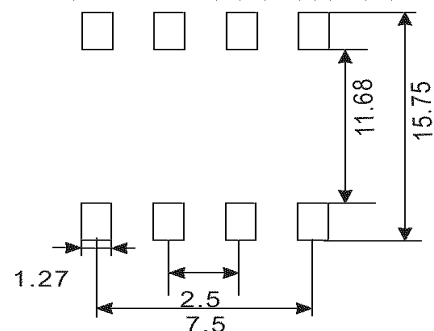
1.Wrap 2Ts of 6mm tape around the finished part.

Unit: mm

A MAX	B MAX	C MAX	D TYP
12.7	11.43	15.24	10.60

SUGGESTED PAD LAYOUT


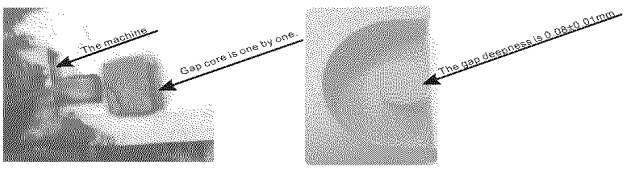
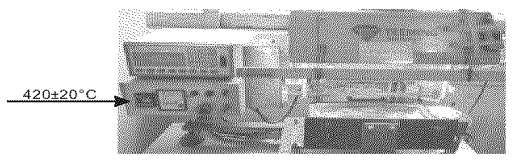
Unit: mm Tolerances: +/-0.2



3. Electrical Characteristics :

Specifications Test: at 25 °C. Operating Temperature: -40 to +105°C			
NO.	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	(3-4)@200kHz, 0.1v	155uH+/-10%.
2	Inductance	(2-1)@200kHz, 0.1v	30uH+/-15%.
3	Inductance	(7-5)/(8-6)@200kHz, 0.1v	5.3uH+/-15%.
4	Leakage Inductance	(3-4) with shorted other@200kHz, 0.1v	3.6uH MAX.
5	DCR	(3-4) @ 25°C	0.414 Ω Max.
6		(7+8)-(5+6) @ 25°C	0.06Ω Max.
7		(2-1) @ 25°C	0.822Ω Max.
8	HI-POT	PRI TO SEC	1500Vac 1mA 3Sec.
9	T/R	(3-4):(9+10-7+8):(2-1)	33:6:14±2%.

4.Overhauling List.

NO.	ITEM	SPECIFICATION
1	Tape turns	2T
2	Margin tape thickness	0.15mm
3	Winding turns	N1:33T N2:6T N3:14T
4	Pins order/Pin connection .	1T
5	Marking Information	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> PDT2431SR GROUP-TEK DATE CODE  </div>
6	Gap the center leg	
7	Solder Temperature	

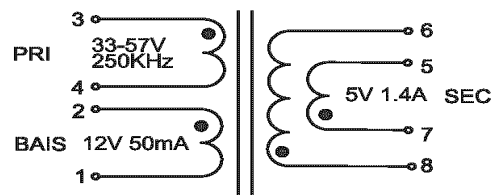
5. Winding Information:

WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
1	3--4	0.30mm 2UEW	33	2T w6.0mm	N/A	N/A	1
2	8--6 7--5	0.30mm 2UEW R 0.30mm 2UEW N	6	2T w6.0mm	2T W0.80mm	N/A	1
3	2--1	0.23mm 2UEW	14	2T w6.0mm	2T W0.80mm	N/A	1

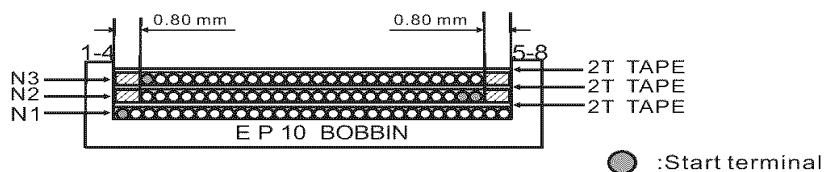
NOTE :

1. -Place the bobbin pin 1 right side of operator.

6. Schematic:



7. Winding construction



8. Material List

NO.	ITEM.	MATERIALS	SUPPLIERS/MANUFACTURES	UL FILE NO.
1	BOBBIN	PHENOLIC T375J UL RATING: 94V-0 THERMAL RATING:150°C	CHANG CHUN PLASTIC CO LTD.	QMFZ2.E59481
2	CORE	Ep10 PG232A	High-tech Electronics Co.,Ltd.	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO.: 2UEW 0.23mm 0.30mm THERMAL RATING:180°C	Shing Shun Magnet wire(HuiZhou) Co.,Ltd	E255839
4	TAPE	ADHESIVE POLYESTER TAPE TYPE NO.:W-001 THERMAL RATING:130°C yellow tape: for inner coils	Shen zhen Weichuangda Packing material Co.,Ltd	E333581
5	TAPE	DHESIVE POLYESTER TAPE TYPE NO.:519(kapton tape) THERMAL RATING:200°C Kapton tape: for outside of core	Shen zhen yanda electronic Technology Co.,Ltd	E309332
6	SOLDER	SN/CU: 99.3/0.7	Gao Xin stannum industry Co.,Ltd	N/A
7	Glue	E-500(xx) E-504H-1 THERMAL RATING:130°C	Dong Guan city eatto electronic material Co.,Ltd	E218090
8	INK	VIC-120	Shenshen Huarui samwo group Co.,Ltd	N/A

9. PACKING INFORMATION:

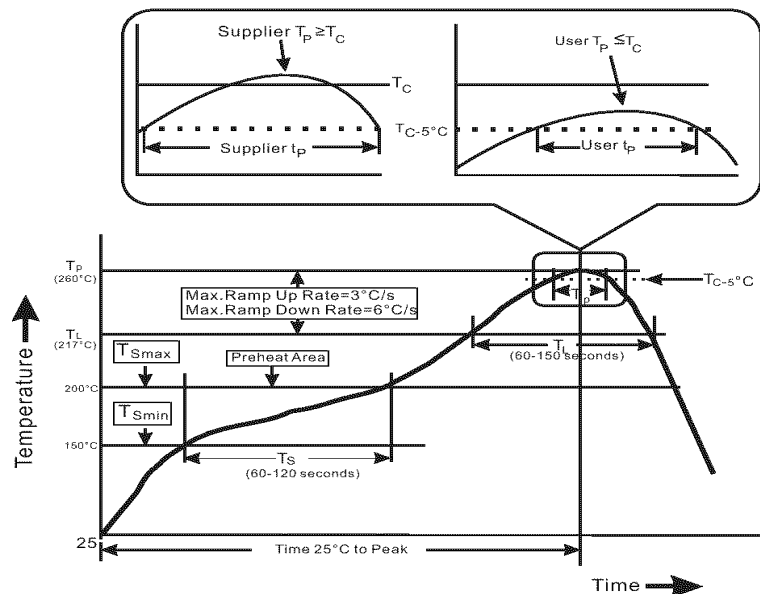
DESCRIPTION	QTY
PIECES PER REEL	250
PIECES PER POCKET	1
PIECES PER BOX	750
REEL PER BOX	3
GROSS WEIGHT PER BOX(KG)	TBD
NET WEIGHT PER BOX(KG)	TBD

GROUP-TEK®

A Leading Supplier of Magnetic Components

PDT2431SR

1. Recommended Lead Free IR Reflow Curve



Item	Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
1	Preheat/Soak Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-120 seconds
2	Ramp-up rate (T_l to T_p)	3 °C/second max.	3 °C/second max.
3	Liquidous temperature (T_l) Time (t_l) maintained above T_l	183 °C 60-150 seconds	217 °C 60-150 seconds
4	Peak package body temperature (T_p)	For users T_p must not exceed the Classification temp in Table 4-1 (IPC/JEDEC J-STD-020D.1). For suppliers T_p must equal or exceed the Classification temp in Table 4-1 (IPC/JEDEC J-STD-020D.1).	
5	Time (t_p)* within 5°C of the specified classification temperature (T_c), see Figure 5-1 (IPC/JEDEC J-STD-020D.1).	20* seconds	30* seconds
6	Ramp-down rate (T_p to T_l)	6 °C/second max.	6 °C/second max.
7	Time 25 °C to peak temperature	6 minutes max.	8 minutes max.
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.			

Note:

- 1: All temperatures refer to the center of the package, measured on the package body surface that is facing up during assembly reflow (e.g., live-bug). If parts are reflowed in other than the normal live-bug assembly reflow orientation (i.e., dead-bug), T_p shall be within $\pm 2^\circ\text{C}$ of the live-bug T_p and still to accurately measure actual peak package body temperatures refer to JEP140 for recommended thermocouple use. meet the T_c requirements, otherwise, the profile shall be adjusted to achieve the latter.
- 2: Reflow profiles in this document are for classification/preconditioning and are not meant to specify board assembly profiles. Actual board assembly profiles should be developed based on specific process needs and board designs and should not exceed the parameters in Table 5-2. For example, if T_c is 260°C and time t_p is 30 seconds, this means the following for the supplier and the user. For a supplier: The peak temperature must be at least 260°C . The time above 255°C must be at least 30 seconds. For a user: The peak temperature must not exceed 260°C . The time above 255°C must not exceed 30 seconds.
- 3: All components in the test load shall meet the classification profile requirements.
- 4: SMD packages classified to a given moisture sensitivity level by using Procedures or Criteria defined within any previous version of J-STD-020, JESD22-A112 (rescinded), IPC-SM-786 (rescinded) do not need to be reclassified to the current revision unless a change in classification level or a higher peak classification temperature is desired.

2. Reliability Test Criteria.

- 2.1 Operating temperature range: 0°C to 70°C
- 2.2 Terminal strength: Pull test withstand $9.8\text{N } 60\pm 0.5\text{S}$ no looseness or movement.
- 2.3 Solderability: Dipped in $245^\circ\text{C} \pm 5^\circ\text{C}$ molten solder for 3 ± 0.5 seconds, 95% min shall be smooth any and bright
- 2.4 Resistance to soldering heat : Convection reflow condition setting: peak temperature at $260^\circ\text{C} \pm 5^\circ\text{C}$ above 217°C for 60-150 seconds, ramp-up rate $2-3^\circ\text{C/s}$. Ramp-down rate 6°C/s Max. No mechanical problem found. No electrical failure found per our specification.
- 2.5 Vibration: 1.5mm amplitude total excursion 10-55-10 Hz traversed in 1 minute, x.y.z, axis for 2 hours. Shall not be any abnormality.
- 2.6 Random drop (Packing condition): Height 60cm, 3 times on the wood floorboard, shall not be any abnormality.
- 2.7 Damp Heat: $60\pm 2^\circ\text{C}$, $93\pm 3\%$ RH 96 hours.
- 2.8 Change of temperature: exposed 5 cycle; each consisting of 30 minutes at $-20\pm 2^\circ\text{C}$, 2-3 minutes at $20\pm 2^\circ\text{C}$, 30 minutes at $85\pm 2^\circ\text{C}$, 2-3 minutes at $20\pm 2^\circ\text{C}$.

Remarks:

After reliability test per item 7,8,9,10 in prior to the test as specified, the transformer / coil would be exposed to the room temperature for 1-2 hours, the component meets all requirements according to this specification.

This parts should not contain any substances which are specified in STS-TP01-015

NO	PART NAME	CODE NO.	MATERIAL	Q'TY	REMARK
1	-	-	-	1	-

Technical drawing of a mechanical part, likely a camera lens or sensor housing, showing multiple views and dimensions.

Top View: Shows a circular flange with a central rectangular opening. Dimensions: $\phi 58.6 [2.31^*]$ (outer diameter), $101.8 [4.01^*]$ (total width), $88.8 [3.50^*]$ (main body width), and $80.2 [3.16^*]$ (flange width).

Side View: Shows the profile of the part. Dimensions: $101.8 [4.01^*]$ (total width), $88.8 [3.50^*]$ (main body width), and $80.2 [3.16^*]$ (flange width).

Front View: Shows the front of the part, including the lens or sensor area.

Detail View (Flange): Shows a cross-section of the flange with three mounting holes. Dimensions: $\phi 62.8 [2.48^*]$ (outer diameter), $\phi 48 [1.89^*]$ (inner diameter), and $3 - \phi 5.5 [0.22^*]$ HOLES (three holes with diameter 5.5 mm).

CHANGE

CHANGE		UNIT	MM	DESIGN	CHECK	APPROVAL	PART NAME	APPEARANCE
		SCALE	1/1	HTW	-	-	MODEL NAME	LNO-6010R/6020R/6030R
				17.11.16	-	-		
				HANWHA TECHWIN			CODE NO.	-



Project No. 4788340308
 Compliance
 Review
 Conducted by: _____

File E158873

Page 1

Printed Name

Signature

Date _____

Standard SCC Requirements and Guidance - Product Certification Body Accreditation Program Edition/ Revision Date 2016-04-06

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
9.2.3 CBs shall include dual language safety labeling within their product certification requirements, if so required by the standard or by the authority having jurisdiction.					
The manufacturer has confirmed they have the ability to include English and French safety labeling exactly as specified in the product standard; or, if NOT specified in the product standard, the ability to include English and French safety labelling consisting of markings associated with the signal words DANGER, WARNING, and CAUTION when required.	X			The ability of the manufacturer to include these markings was verified by either (1) visual inspection of the markings on the actual product or (2) draft of labels that will be applied to the product or (3) written confirmation from the customer of the markings that will appear on the product. If the product standard provides the exact translation, the evidence must match the exact translation. If the product standard does NOT provide the exact translation, the evidence must simply include both the English and French text (no verification of translation is required).	N/A

Project No. 4788340308

File E158873

Page 2

Compliance

Review

Conducted by:

Printed Name

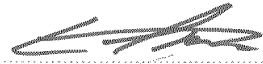
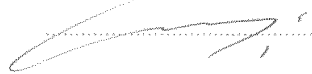
Signature

Date

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
Manufacturer has a method to manage distribution of products, IF all products with the Canadian certification mark are NOT going to include the dual language.	X			<p>Evaluation staff are to only verify that the manufacturer has a method to control distribution.</p> <p>Evaluation staff do not have to record the method of control nor are the evaluation staff expected to verify the effectiveness of the method of control. This requirement to verify that a method exists will be noted in the FUS Procedure. The UL Field Engineer will verify the method during surveillance.</p> <p>If the manufacturer is going to include the dual language on all products with the Canadian certification mark, then this item is N/A; no further action required.</p>	N/A



Page 1 of 15

TEST REPORT IEC 62471 and/or EN 62471 Photobiological safety of lamps and lamp systems	
Report Reference No.	F690501/RF-SAF009803
Order No.	G-44-2018-00128
Tested by (name + signature)	Ethan Kim 
Approved by (name + signature)	ChangMin Yi 
Date of issue	January 23, 2018
Total number of pages	15
Testing Laboratory	SGS Korea Co., Ltd. Gunpo Laboratory
Address	14, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, 15807, Republic of Korea
Applicant's name	Hanwha Techwin Co., Ltd.
Address	Hanwha Techwin R&D center, 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
Test specification:	
Standard	<input checked="" type="checkbox"/> IEC 62471: 2006 (First Edition) <input type="checkbox"/> EN 62471: 2008
Test procedure	Test report
Non-standard test method	N/A
Test Report Form No.	IECEN62471A
TRF Originator	VDE Testing and Certification Institute
Master TRF	Dated 2009-05
TRF Modified by	SGS Korea Co., Ltd. Gunpo Laboratory
Modified TRF Form No.	TRF No. SAF5102-IEC62471A(2015/11/11)(0)
Test item description	Network Camera
Trade Mark	-
Manufacturer	Same as applicant
Model/Type reference	LNO-6030R
Ratings	37-57 Vd.c.; 0,18 A

TRF No. SAF5102-IEC62471A(2015/11/11)(0)

**Summary of testing:**

- The equipment is powered by PoE ((35 – 57 V d.c.))
- Testing were performed with adapter supplied by the applicant

Hazard	Risk Group
Actinic UV	Exempt
Near UV	Exempt
Blue Light	Exempt
Retinal Thermal Weak Visual	Group 1

Tests performed (name of test and test clause):

- 4.3.1 Actinic UV hazard exposure limit for the skin and eye
- 4.3.2 Near-UV hazard exposure limit for eye
- 4.3.3 Retinal blue light hazard exposure limit
- 4.3.5 Retinal thermal hazard exposure limit
- 4.3.7 Infrared radiation hazard exposure limits for the eye
- 4.3.8 Thermal hazard exposure limit for the skin

Testing location:

Refer to page 1.

Summary of compliance with National Differences: None**Copy of marking plate:**

-



Test item particulars		—
Tested lamp	<input checked="" type="checkbox"/> continuous wave lamps	<input type="checkbox"/> pulsed lamps
Tested lamp system	—	
Lamp classification group	<input type="checkbox"/> exempt	<input checked="" type="checkbox"/> risk 1 <input type="checkbox"/> risk 2 <input type="checkbox"/> risk 3
Lamp cap	—	
Bulb	—	
Rated of the lamp	—	
Furthermore marking on the lamp	—	
Seasoning of lamps according IEC standard	—	
Used measurement instrument	Bentham IDR300-PSL	
Temperature by measurement	25 ± 5 °C	
Information for safety use	—	
Possible test case verdicts:		
— test case does not apply to the test object : N/A		
— test object does meet the requirement : P (Pass)		
— test object does not meet the requirement : F (Fail)		
Testing:		
Date of receipt of test item : January 16, 2018		
Date (s) of performance of tests : January 19, 2018		
General remarks:		
Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.		
The test results presented in this report relate only to the object tested.		
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
"(See Enclosure #)" refers to additional information appended to the report.		
"(See appended table)" refers to a table appended to the report.		
Throughout this report a comma is used as the decimal separator.		
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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.		



General product information:

- The product can emit IR(non visible infrared light) when powered
- LED 14 EA (Manufacture: Cybright IR LED Technology Co., Ltd;
Model: XB-L5BT3BAD-80); $V_F = \text{Max. } 1.8 \text{ Vd.c. (Max)}$; $I_F = 100 \text{ mA}$; Angle = 80°
- Factory:
HANWHA TECHWIN (TIANJIN) CO., LTD.
No.11 Weiliu Rd, Micro-Electronic Industrial Park, TEDA, Tianjin, 300385, People's Republic of China



IEC / EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
4	EXPOSURE LIMITS		—
4.1	General		P
	The exposure limits in this standard is not less than 0,01 ms and not more than any 8-hour period and should be used as guides in the control of exposure		P
	Detailed spectral data of a light source are generally required only if the luminance of the source exceeds 10^4 cd m^{-2}		P
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye		P
	The exposure limit for effective radiant exposure is 30 J m^{-2} within any 8-hour period		P
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broad-band source, the effective integrated spectral irradiance, E_s , of the light source shall not exceed the levels defined by:		P
	$E_s \cdot t = \sum_{200}^{400} \sum_f E_f(\lambda, t) \cdot S_{UV}(\lambda) \cdot \Delta\lambda \cdot \Delta t \leq 30 \text{ J m}^{-2}$		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		P
	$t_{\max} = \frac{30}{E_s} \text{ s}$		P
4.3.2	Near-UV hazard exposure limit for eye		P
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed 10000 J m^{-2} for exposure times less than 1000 s. For exposure times greater than 1000 s (approximately 16 minutes) the UV-A irradiance for the unprotected eye, E_{UVA} , shall not exceed 10 W m^{-2} .		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for time less than 1000 s, shall be computed by:		P
	$t_{\max} \leq \frac{10000}{E_{UVA}} \text{ s}$		P
4.3.3	Retinal blue light hazard exposure limit		P
	To protect against retinal photochemical injury from chronic blue-light exposure, the integrated spectral radiance of the light source weighted against the blue-light hazard function, $B(\lambda)$, i.e., the blue-light weighted radiance, L_B , shall not exceed the levels defined by:		P



IEC / EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$L_B \cdot t = \sum_{380}^{700} \sum_i L_{\lambda}(\lambda, t) \cdot B(\lambda) \cdot \Delta\lambda \cdot \Delta t \leq 10^6 \quad \text{J} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$		P
	$L_B = \sum_{380}^{700} L_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda \leq 100 \quad \text{W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$		P
4.3.4	Retinal blue light hazard exposure limit - small source		N/A
	Thus the spectral irradiance at the eye E_{λ} , weighted against the blue-light hazard function $B(\lambda)$ shall not exceed the levels defined by:		N/A
	$E_B \cdot t = \sum_{380}^{700} \sum_i E_{\lambda}(\lambda, t) \cdot B(\lambda) \cdot \Delta\lambda \cdot \Delta t \leq 100 \quad \text{J} \cdot \text{m}^{-2}$		N/A
	$E_B = \sum_{380}^{700} E_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda \leq 1 \quad \text{W} \cdot \text{m}^{-2}$		N/A
4.3.5	Retinal thermal hazard exposure limit		N/A
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_{λ} , weighted by the burn hazard weighting function $R(\lambda)$ (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		N/A
	$L_{IR} = \sum_{380}^{1400} L_{\lambda} \cdot R(\lambda) \cdot \Delta\lambda \leq \frac{50\,000}{\alpha \cdot t^{0.25}} \quad \text{W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$		N/A
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		P
	For an infrared heat lamp or any near-infrared source where a weak visual stimulus is inadequate to activate the aversion response, the near infrared (780 nm to 1400 nm) radiance, L_{IR} , as viewed by the eye for exposure times greater than 10 s shall be limited to:		P
	$L_{IR} = \sum_{780}^{1400} L_{\lambda} \cdot R(\lambda) \cdot \Delta\lambda \leq \frac{6\,000}{\alpha} \quad \text{W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$		P
4.3.7	Infrared radiation hazard exposure limits for the eye		N/A
	The avoid thermal injury of the cornea and possible delayed effects upon the lens of the eye (cataractogenesis), ocular exposure to infrared radiation, E_{IR} , over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:		N/A
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 18\,000 \cdot t^{-0.75} \quad \text{W} \cdot \text{m}^{-2}$		N/A
	For times greater than 1000 s the limit becomes:		N/A



IEC / EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$E_{IR} = \sum_{380}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 100 \quad W \cdot m^{-2}$		N/A
4.3.8	Thermal hazard exposure limit for the skin		N/A
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		N/A
	$E_{H-T} = \sum_{380}^{3000} \sum_t E_{\lambda}(\lambda, t) \cdot \Delta\lambda \cdot \Delta t \leq 20\,000 \cdot t^{0.25} \quad J \cdot m^{-2}$		N/A
5	MEASUREMENT OF LAMPS AND LAMP SYSTEMS		—
5.1	Measurement conditions		P
	Measurement conditions shall be reported as part of the evaluation against the exposure limits and the assignment of risk classification.		P
5.1.1	Lamp ageing (seasoning)		N/A
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		N/A
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in absence of such standards, the appropriate national standards or manufacturer's recommendations.		P
5.1.3	Extraneous radiation		P
	Careful checks should be made to ensure that extraneous sources of radiation and reflections do not add significantly to the measurement results.		P
5.1.4	Lamp operation		P
	Operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC lamp standard, or		N/A
	– the manufacturer's recommendation		P
5.1.5	Lamp system operation		N/A
	The power source for operation of the test lamp shall be provided in accordance with:		N/A
	– the appropriate IEC standard, or		N/A
	– the manufacturer's recommendation		N/A
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	Minimum aperture diameter 7mm.		P



IEC / EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	Maximum aperture diameter 50 mm.		P
	The measurement shall be made in that position of the beam giving the maximum reading.		P
	The measurement instrument is adequate calibrated.		P
5.2.2	Radiance measurements		P
5.2.2.1	Standard method		P
	The measurements made with an optical system.		P
	The instrument shall be calibrated to read in absolute radiant power per unit receiving area and per unit solid angle to acceptance averaged over the field of view of the instrument.		P
5.2.2.2	Alternative method		N/A
	Alternatively to an imaging radiance set-up, an irradiance measurement set-up with a circular field stop placed at the source can be used to perform radiance measurements.		N/A
5.2.3	Measurement of source size		P
	The determination of α , the angle subtended by a source, requires the determination of the 50% emission points of the source.		P
5.2.4	Pulse width measurement for pulsed sources		N/A
	The determination of Δt , the nominal pulse duration of a source, requires the determination of the time during which the emission is > 50% of its peak value.		N/A
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations		P
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.		P
5.3.2	Calculations		P
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		P
5.3.3	Measurement uncertainty		P
	The quality of all measurement results must be quantified by an analysis of the uncertainty.		P
6	LAMP CLASSIFICATION		—



IEC / EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	For the purposes of this standard it was decided that the values shall be reported as follows:		P
	– for lamps intended for general lighting service, the hazard values shall be reported as either irradiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm		N/A
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		P
6.1	Continuous wave lamps		P
6.1.1	Exempt Group		F
	In the exempt group are lamps, which do not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		P
	– an actinic ultraviolet hazard (E_s) within 8-hours exposure (30000 s), nor		P
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min), nor		P
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor	Exceed the limit; See next group	F
	– an infrared radiation hazard for the eye (E_{IR}) within 1000 s		N/A
6.1.2	Risk Group 1 (Low-Risk)		P
	In this group are lamps, which exceeds the limits for the exempt group but that does not pose:		P
	– an actinic ultraviolet hazard (E_s) within 10000 s, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 100 s, nor		N/A
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		N/A
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 100 s are in Risk Group 1.		N/A
6.1.3	Risk Group 2 (Moderate-Risk)		N/A
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		N/A



IEC / EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	– an actinic ultraviolet hazard (E_s) within 1000 s exposure, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N/A
	– a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		N/A
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 10 s are in Risk Group 2.		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
	Lamps which exceed the limits for Risk Group 2 are in Group 3.		N/A
6.2	Pulsed lamps		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	CENELEC COMMON MODIFICATIONS (EN)		—
4	EXPOSURE LIMITS		—
	Contents of the whole Clause 4 of IEC 62471:2006 moved into a new informative Annex ZB		—
	Clause 4 replaced by the following:		N/A
	Limits of the Artificial Optical Radiation Directive (2006/25/EC) have been applied instead of those fixed in IEC 62471:2006		N/A
4.1	General		N/A
	First paragraph deleted		—



IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1 Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	3.62E-05	0,003	—	0,03	—
Near UV	—	E_{UVA}	$W \cdot m^{-2}$	10	1.38E-05	33	—	100	—
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	0.0029	10000	—	4000000	—
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	1,0*	0E+00	1,0	0E+00	400	—
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/ α	—	28000/ α	—	71000/ α	—
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ α	2.76E+06	6000/ α	2.65E+03	6000/ α	2.65E+03
IR radiation, eye	—	E_{IR}	$W \cdot m^{-2}$	100	—	570	—	3200	—
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

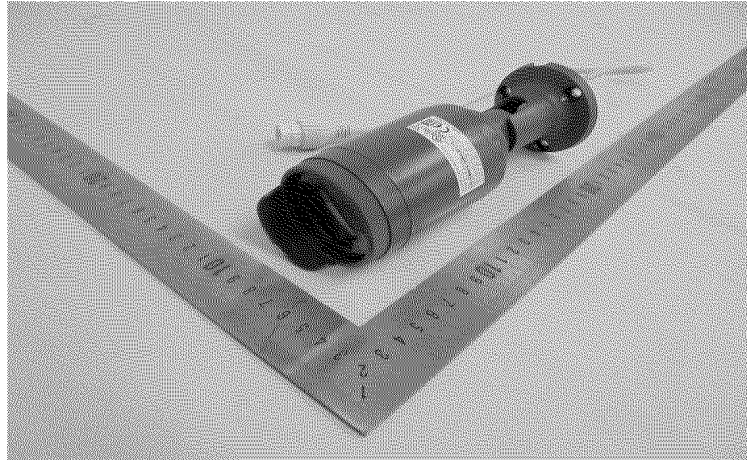


EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict

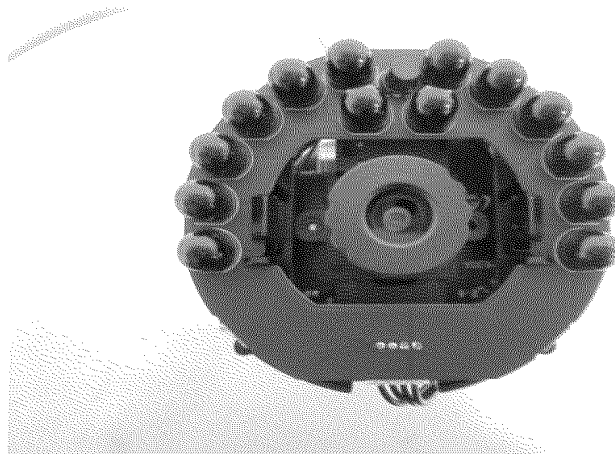
Table 6.1		Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)							N/A
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	—	—	—	—	—
Near UV	—	E_{UVA}	$W \cdot m^{-2}$	0,33	—	—	—	—	—
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	—	10000	—	4000000	—
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	0,01*	—	1,0	—	400	—
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	$28000/\alpha$	—	$28000/\alpha$	—	$71000/\alpha$	—
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 $0,0017 \leq \alpha \leq 0,011$	—				
				$6000/\alpha$ $0,011 \leq \alpha \leq 0,1$	—				
IR radiation, eye	—	E_{IR}	$W \cdot m^{-2}$	100	—	570	—	3200	—
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian. ** Involves evaluation of non-GLS source									

**Photo documentation**

* External View (1 of 1)



* LED Power On View (1 of 1)

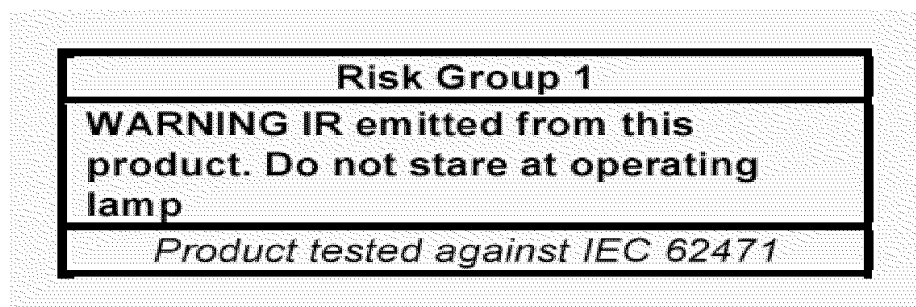




Furthermore remarks

* Resulting IEC 62471 Classification and Labelling

Hazard	Risk Group
Actinic UV	Exempt
Near UV	Exempt
Blue Light	Exempt
Retinal Thermal Weak Visual	Group 1



- END OF TEST REPORT -

TRF No. SAF5102-IEC62471A(2015/11/11)(0)

Test Record

Test Record No. 1

1. Test result relate only to the items tested.

2. The manufacturer submitted representative production samples of NETWORK CAMERA, LNO-6030R.

3. Only the test listed were considered necessary.

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Input: Single-Phase (1.6.2)	
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	
Stress Relief (4.2.7, 4.2.1)	
Loading - Wall and Ceiling Mounted Equipment (4.2.10)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as a part of this Test Record. NOTE: These supplements are only available to the Applicant via the CDA system.

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Datasheet	2-01	Datasheet