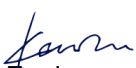



Prüfbericht-Nr.: <i>Test Report No.:</i>	50357905 001	Auftrags-Nr.: <i>Order No.:</i>	170249928	Seite 1 von 17 <i>Page 1 of 17</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2020-09-04	
Auftraggeber: <i>Client:</i>	AOK Industrial Company Limited Building 1, Shengzuozi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong, P.R. China			
Prüfgegenstand: <i>Test item:</i>	LED Street Light			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	see model list			
Auftrags-Inhalt: <i>Order content:</i>	Type examination			
Prüfgrundlage: <i>Test specification:</i>	IEC 62471:2006; EN 62471:2008 and client's requirement			
Wareneingangsdatum: <i>Date of receipt:</i>	2020-09-04	Detaillierte Fotodokumentation siehe Anlage zu diesem Bericht Detailed photo documentation see appendix to this report		
Prüfmuster-Nr.: <i>Test sample No.:</i>	170249928-040~041			
Prüfzeitraum: <i>Testing period:</i>	2020-09-04 to 2020-10-26			
Ort der Prüfung: <i>Place of testing:</i>	Standard-Tech Testing Services			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Siehe Sonstiges / See Other			
geprüft von / tested by:		kontrolliert von / reviewed by:		
2021-01-28 Ken Ou / Project Engineer 		2021-01-28 Mars Yan / Reviewer 		
Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>
Sonstiges / Other:				
- Optical output testing based on Photobiological safety, Risk Group 1. - Other than optical hazards have not been considered during investigation.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s)		N/A = nicht anwendbar N/T = nicht getestet N/A = not applicable N/T = not tested		
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

TEST REPORT	
EN 62471	
Photobiological Safety of Lamps and Lamp Systems	
Report Reference No.....:	50357905 001
Tested by (name + signature).....:	See cover page.
Approved by (name + signature).....:	See cover page.
Date of issue.....:	See cover page.
Total number of pages.....:	See cover page.
Applicant's name.....:	See cover page.
Address.....:	See cover page.
Test specification:	
Standard.....:	IEC 62471:2006; EN 62471:2008
Test procedure.....:	Test report only
Non-standard test method.....:	N/A
Test item description.....:	LED Street Light
Trade Mark.....:	N/A
Manufacturer.....:	Same as applicant
Model/Type reference.....:	see in model list
Ratings.....:	AC 220-240V, 50/60Hz, Class I and Class II, see model list for details

Test item particulars	
Equipment mobility:	--
Protection Class of equipment:	--
Mass of equipment (kg):	N/A
Lamp classification	
Lamp system group of the equipment:	Risk Group 1
Lamp system group of the radiation employed:	N/A
Maximum classification of the embedded lamp:	N/A
(if an embedded lamp is employed):	--
Test case verdicts:	--
Test case does not apply to the test object:	N/A
Test item does meet the requirement:	P(ass)
Test item does not meet the requirement:	F(ail)
Testing	
Date of receipt of test item:	See cover page
Date(s) of performance of test:	See cover page
General remarks: This report shall not be reproduced except in full without the written approval of the testing laboratory. The test results presented in this report relate only to the item(s) tested. “(see remark #)” refers to a remark appended to the report. “(see Annex #)” refers to an annex appended to the report. Throughout this report a point is used as the decimal separator. List of test equipment must be kept on file and available for review.	
Copy of marking plate and Warning Labels: N/A	
Summary of testing: This test report was issued for considering the potential radiation hazards resulting from the LED Lamp under the normal operating conditions only. The rating of LED has been considered for the testing as shown in the test result section. No further single fault and abnormal tests performed. This product accessible emission has been tested according to standard IEC 62471:2006 and EN 62471:2008 and found in compliance Risk Group 1. Models AOK-220WiL02-NV-L3-00-5770-T201-PH-I and AOK-220WiL02-NV-L5-00-5770-T202-PH-I were selected to do the test. The test was supplied at 240VAC, 50Hz under maximum continuing light output status. Tests performed at 200mm according to client's requirement. Test place: Standard-Tech Testing Services Address: Standard-Tech Building, No. 6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China	

General product information:

All models have the similar construction. The LED module and optical construction are similar except the LED quantity.

Class II models are same as the Class I models except the earthing terminal.

Models AOK-220WiL02-NV-L3-00-5770-T201-PH-I and AOK-220WiL02-NV-L5-00-5770-T202-PH-I which include the two types of LED with highest CCT, power and the most narrow beam angle were selected to do the test.

Model list:

model	power	LED driver	size	LED type	LED connecting	LED quantity
class I						
AOK-20WiL02-NV-L3-00-XX70-BN-PH-I	20W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 3030 2D	6S18P	108
AOK-20WiL02-NV-L5-00-XX70-BN-PH-I	20W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 5050	2S18P	36
AOK-20WiL02-NV-L3-00-XX70-BN-PH-I	20W	SS-30VA-56B	470*230*79mm	LUXEON 3030 2D	6S18P	108
AOK-30WiL02-NV-L3-00-XX70-BN-PH-I	30W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 3030 2D	6S18P	108
AOK-30WiL02-NV-L5-00-XX70-BN-PH-I	30W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 5050	2S18P	36
AOK-30WiL02-NV-L3-00-XX70-BN-PH-I	30W	SS-30VA-56B	470*230*79mm	LUXEON 3030 2D	6S18P	108
AOK-40WiL02-NV-L3-00-XX70-BN-PH-I	40W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 3030 2D	6S18P	108
AOK-40WiL02-NV-L5-00-XX70-BN-PH-I	40W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 5050	2S18P	36
AOK-40WiL02-NV-L3-00-XX70-BN-PH-I	40W	SS-50VA-56B	470*230*79mm	LUXEON 3030 2D	6S18P	108
AOK-50WiL02-NV-L3-00-XX70-BN-PH-I	50W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*80mm	LUXEON 3030 2D	16S9P	144
AOK-50WiL02-NV-L5-00-XX70-BN-PH-I	50W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*80mm	LUXEON 5050	3S18P	54
AOK-50WiL02-NV-L3-00-XX70-BN-PH-I	50W	SS-50VA-56B	470*230*80mm	LUXEON 3030 2D	6S18P	108
AOK-60WiL02-NV-L3-00-XX70-BN-PH-I	60W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*81mm	LUXEON 3030 2D	16S9P	144
AOK-60WiL02-NV-L5-00-XX70-BN-PH-I	60W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*81mm	LUXEON 5050	3S18P	54
AOK-60WiL02-NV-L3-00-XX70-BN-PH-I	60W	SS-75VA-56B	470*230*81mm	LUXEON 3030 2D	6S24P	144
AOK-70WiL02-NV-L3-00-XX70-BN-PH-I	70W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*82mm	LUXEON 3030 2D	16S9P	144
AOK-70WiL02-NV-L5-00-XX70-BN-PH-I	70W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*82mm	LUXEON 5050	3S18P	54
AOK-70WiL02-NV-L3-00-XX70-BN-PH-I	70W	SS-75VA-56B	470*230*82mm	LUXEON 3030 2D	6S24P	144
AOK-80WiL02-NV-L3-00-XX70-BN-PH-I	80W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 3030 2D	24S6P	144
AOK-80WiL02-NV-L5-00-XX70-BN-PH-I	80W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 5050	6S12P	72
AOK-80WiL02-NV-L3-00-XX70-BN-PH-I	80W	SS-100VA-56B	646*240*137mm	LUXEON 3030 2D	8S18P	144
AOK-90WiL02-NV-L3-00-XX70-BN-PH-I	90W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 3030 2D	24S6P	144
AOK-90WiL02-NV-L5-00-XX70-BN-PH-I	90W	Xi FP 110W 0.3-1.0A	646*240*	LUXEON	6S12P	72

XX70-BN-PH-I		SNLDAE 230V C133 sXt	137mm	5050		
AOK-90WiL02-NV-L3-00-XX70-BN-PH-I144	90W	SS-100VA-56B	646*240* 137mm	LUXEON 3030 2D	8S18P	144
AOK-100WiL02-NV-L3-00-XX70-BN-PH-I	100W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240* 137mm	LUXEON 3030 2D	24S8P	192
AOK-100WiL02-NV-L5-00-XX70-BN-PH-I	100W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240* 137mm	LUXEON 5050	6S12P	72
AOK-100WiL02-NV-L3-00-XX70-BN-PH-I	100W	SS-100VA-56B	646*240* 137mm	LUXEON 3030 2D	8S24P	192
AOK-120WiL02-NV-L3-00-XX70-BN-PH-I	120W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240* 137mm	LUXEON 3030 2D	24S8P	192
AOK-120WiL02-NV-L5-00-XX70-BN-PH-I	120W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240* 137mm	LUXEON 5050	6S12P	72
AOK-120WiL02-NV-L3-00-XX70-BN-PH-I	120W	SS-150VA-56B	646*240* 137mm	LUXEON 3030 2D	8S24P	192
AOK-130WiL02-NV-L3-00-XX70-BN-PH-I	130W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 3030 2D	30S8P	240
AOK-130WiL02-NV-L5-00-XX70-BN-PH-I	130W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 5050	8S15P	120
AOK-130WiL02-NV-L3-00-XX70-BN-PH-I	130W	SS-150VA-56B	676*290* 137mm	LUXEON 3030 2D	8S30P	240
AOK-140WiL02-NV-L3-00-XX70-BN-PH-I	140W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 3030 2D	30S8P	240
AOK-140WiL02-NV-L5-00-XX70-BN-PH-I	140W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 5050	8S15P	120
AOK-140WiL02-NV-L3-00-XX70-BN-PH-I	140W	SS-150VA-56B	676*290* 137mm	LUXEON 3030 2D	8S30P	240
AOK-150WiL02-NV-L3-00-XX70-BN-PH-I	150W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 3030 2D	30S8P	240
AOK-150WiL02-NV-L5-00-XX70-BN-PH-I	150W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 5050	8S15P	120
AOK-150WiL02-NV-L3-00-XX70-BN-PH-I	150W	SS-150VA-56B	676*290* 137mm	LUXEON 3030 2D	8S30P	240
AOK-160WiL02-NV-L3-00-XX70-BN-PH-I	160W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 3030 2D	40S8P	320
AOK-160WiL02-NV-L5-00-XX70-BN-PH-I	160W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 5050	8S15P	120
AOK-160WiL02-NV-L3-00-XX70-BN-PH-I	160W	SS-200VA-56B	676*290* 137mm	LUXEON 3030 2D	8S40P	320
AOK-170WiL02-NV-L3-00-XX70-BN-PH-I	170W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 3030 2D	40S8P	320
AOK-170WiL02-NV-L5-00-XX70-BN-PH-I	170W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	676*290* 137mm	LUXEON 5050	8S15P	120
AOK-170WiL02-NV-L3-00-XX70-BN-PH-I	170W	SS-200VA-56B	676*290* 137mm	LUXEON 3030 2D	8S40P	320
AOK-180WiL02-NV-L3-00-XX70-BN-PH-I	180W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	676*290* 137mm	LUXEON 3030 2D	40S8P	320
AOK-180WiL02-NV-L5-00-XX70-BN-PH-I	180W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	676*290* 137mm	LUXEON 5050	8S15P	120
AOK-180WiL02-NV-L3-00-XX70-BN-PH-I	180W	SS-200VA-56B	676*290* 137mm	LUXEON 3030 2D	8S40P	320
AOK-200WiL02-NV-L3-00-XX70-BN-PH-I	200W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 3030 2D	48S8P	384
AOK-200WiL02-NV-L5-00-XX70-BN-PH-I	200W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 5050	12S12 P	144
AOK-200WiL02-NV-L3-00-XX70-BN-PH-I	200W	SS-200VA-56B	756*308* 138mm	LUXEON 3030 2D	8S48P	384
AOK-220WiL02-NV-L3-00-XX70-BN-PH-I	220W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 3030 2D	48S8P	384
AOK-220WiL02-NV-L5-00-XX70-BN-PH-I	220W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 5050	12S12 P	144
AOK-220WiL02-NV-L3-00-XX70-BN-PH-I	220W	SS-240VA-56B	756*308* 138mm	LUXEON	8S48P	384

00-XX70-BN-PH-I			138mm	3030 2D		
Class II						
AOK-20WiL02-NV-L3-00-XX70-BN-PH-II	20W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 303 02D	6S18P	108
AOK-20WiL02-NV-L5-00-XX70-BN-PH-II	20W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 5050	2S18P	36
AOK-30WiL02-NV-L3-00-XX70-BN-PH-II	30W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 303 02D	6S18P	108
AOK-30WiL02-NV-L5-00-XX70-BN-PH-II	30W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 5050	2S18P	36
AOK-40WiL02-NV-L3-00-XX70-BN-PH-II	40W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 303 02D	6S18P	108
AOK-40WiL02-NV-L5-00-XX70-BN-PH-II	40W	Xi FP 40W 0.3-1.0A SNLDAE 230V C123 sXt	470*230*79mm	LUXEON 5050	2S18P	36
AOK-50WiL02-NV-L3-00-XX70-BN-PH-II	50W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*80mm	LUXEON 303 02D	16S9P	144
AOK-50WiL02-NV-L5-00-XX70-BN-PH-II	50W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*80mm	LUXEON 5050	3S18P	54
AOK-60WiL02-NV-L3-00-XX70-BN-PH-II	60W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*81mm	LUXEON 303 02D	16S9P	144
AOK-60WiL02-NV-L5-00-XX70-BN-PH-II	60W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*81mm	LUXEON 5050	3S18P	54
AOK-70WiL02-NV-L3-00-XX70-BN-PH-II	70W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*82mm	LUXEON 303 02D	16S9P	144
AOK-70WiL02-NV-L5-00-XX70-BN-PH-II	70W	Xi FP 75W 0.3-1.0A SNLDAE 230V C133 sXt	470*230*82mm	LUXEON 5050	3S18P	54
AOK-80WiL02-NV-L3-00-XX70-BN-PH-II	80W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 303 02D	24S6P	144
AOK-80WiL02-NV-L5-00-XX70-BN-PH-II	80W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 5050	6S12P	72
AOK-90WiL02-NV-L3-00-XX70-BN-PH-II	90W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 303 02D	24S6P	144
AOK-90WiL02-NV-L5-00-XX70-BN-PH-II	90W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 5050	6S12P	72
AOK-100WiL02-NV-L3-00-XX70-BN-PH-II	100W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 303 02D	24S8P	192
AOK-100WiL02-NV-L5-00-XX70-BN-PH-II	100W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 5050	6S12P	72
AOK-110WiL02-NV-L3-00-XX70-BN-PH-II	110W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 303 02D	24S8P	192
AOK-110WiL02-NV-L5-00-XX70-BN-PH-II	110W	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	646*240*137mm	LUXEON 5050	6S12P	72
AOK-130WiL02-NV-L3-00-XX70-BN-PH-II	130W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 303 02D	30S8P	240
AOK-130WiL02-NV-L5-00-XX70-BN-PH-II	130W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 5050	8S15P	120
AOK-140WiL02-NV-L3-00-XX70-BN-PH-II	140W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 303 02D	30S8P	240
AOK-140WiL02-NV-L5-00-XX70-BN-PH-II	140W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 5050	8S15P	120
AOK-150WiL02-NV-L3-00-XX70-BN-PH-II	150W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 303 02D	30S8P	240
AOK-150WiL02-NV-L5-00-XX70-BN-PH-II	150W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 5050	8S15P	120
AOK-160WiL02-NV-L3-00-XX70-BN-PH-II	160W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 303 02D	40S8P	320
AOK-160WiL02-NV-L5-00-XX70-BN-PH-II	160W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 5050	8S15P	120
AOK-170WiL02-NV-L3-00-XX70-BN-PH-II	170W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 303 02D	40S8P	320
AOK-170WiL02-NV-L5-00-XX70-BN-PH-II	170W	Xi FP 165W 0.3-1.0A SNLDAE 230V C170 sXt	646*240*137mm	LUXEON 5050	8S15P	120

AOK-180WiL02-NV-L3-00-XX70-BN-PH-II	180W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	646*240* 137mm	LUXEON 303 02D	40S8P	320
AOK-180WiL02-NV-L5-00-XX70-BN-PH-II	180W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	646*240* 137mm	LUXEON 5050	8S15P	120
AOK-200WiL02-NV-L3-00-XX70-BN-PH-II	200W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 303 02D	48S8P	384
AOK-200WiL02-NV-L5-00-XX70-BN-PH-II	200W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 5050	12S12 P	144
AOK-220WiL02-NV-L3-00-XX70-BN-PH-II	220W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 303 02D	48S8P	384
AOK-220WiL02-NV-L5-00-XX70-BN-PH-II	220W	Xi FP 330W 2:0.2-0.75A SNDAE 230V C240 sXt	756*308* 138mm	LUXEON 5050	12S12 P	144

Remark:

XX denotes the CCT, it can be 30-57 for 3000-5700K;

BN denotes the type of lens, it can be T20z, T30z, T21z, T31z, T41z (z=1 for 3030 LED; z=2 for 5050 LED);
T20=83*150°, T21=107*159°, T30=97*161° T31=86*154°, T41=112*145°.

LED specification:

Type	Manufacturer	Size (mm)	I _F (mA)	V _F (V)	CCT (K)	Viewing angle (°)
LUXEON 3030 2D	Lumileds	3.00x3.00x0.6 6	120	5.6-6.6	3000- 5700K	116
LUXEON 5050	Lumileds	5.00x5.18x0.7 0	240	23.5-26.5	3000- 5700K	116

EN 62471			
Clause	Requirement – Test	Result - Remark	Verdict
4	EXPOSURE LIMITS (EL'S)		P
4.1	General		P
4.2	Specific factors involved in the determination and application of retinal exposure limits	See below	P
4.2.1	Pupil diameter	7mm	P
4.2.2	Angular subtense of source and measurement field-of-view	See appended test data	P
4.3	Hazard exposure limits	See below	P
4.3.1	Actinic UV hazard exposure limit for the skin and eye	See appended test data	P
4.3.2	Near-UV hazard exposure limit for the eye	See appended test data	P
4.3.3	Retinal blue light hazard exposure limit	See appended test data	P
4.3.4	Retinal blue light hazard exposure limit- small source		N/A
4.3.5	Retinal thermal hazard exposure limit	See appended test data	P
4.3.6	Retinal thermal hazard exposure limit — weak visual stimulus	See appended test data	P
4.3.7	Infrared radiation hazard exposure limits for the eye	See appended test data	P
4.3.8	Thermal hazard exposure limit for the skin		N/A
Remark: The original Clause 4 of IEC 62471:2006 contains provisions governing limiting values for the exposure of persons falling within the area of the health and safety of workers. Within Europe those limiting values are already covered by the Artificial Optical Radiation Directive of the directive have to be applied instead of those fixed in IEC 62471:2006. For information the original Clause 4 of IEC 62471:2006 was moved to the informative Annex ZB under retention of the respective numbering.			

5	MEASUREMENT OF LAMPS AND LAMP SYSTEMS		P
5.1	Measurement conditions	See below	P
5.1.1	Lamp ageing (seasoning)		P
5.1.2	Test environment	See appended test data	P
5.1.3	Extraneous radiation	Considered	P
5.1.4	Lamp operation		N/A
5.1.5	Lamp system operation		P
5.2	Measurement procedure	See below	P
5.2.1	Irradiance measurements		P
5.2.2	Radiance measurements		P
5.2.3	Measurement of source size	See appended test data	P
5.2.4	Pulse width measurement for pulsed sources	CW	N/A

EN 62471			
Clause	Requirement – Test	Result - Remark	Verdict
5.3	Analysis methods	See below	P
5.3.1	Weighting curve interpolations		P
5.3.2	Calculations		P
5.3.3	Measurement uncertainty	See page 2	P

6	LAMP CLASSIFICATION		P
6.1	Continuous wave lamps	See below	P
6.1.1	Exempt group		N/A
6.1.2	Risk Group 1 (Low-Risk)		P
6.1.3	Risk Group 2 (Moderate-Risk)		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
6.2	Pulsed lamps	CW	N/A

	EQUIPMENT MANUFACTURE INFORMATION (DATA SHEET) ABOUT THE COMPONENT CONTAINING LAMP SYSTEM		P
	Manufacturer	See LED specification in page 6	P
	Type designation	See LED specification in page 6	P
	Structure		N/A
	Wavelength	See spectrum distribution	P
	Output power (min. and max.)	Max.	P
	Radiation	Visible radiation	P
	Continuous	CW	P
	Pulsed		N/A
	Pulse time		N/A
	Pulse repetition frequency		N/A
	Others		N/A

	MEASUREMENT EQUIPMENT		P
	Type of equipment	See page 2	P
	Manufacturer		P
	Type designation		P
	Others		P

EN 62471			
Clause	Requirement – Test	Result - Remark	Verdict

Details of measurement procedure and measurement results:

Test conditions:

1. Tests performed on AOK-220WiL02-NV-L3-00-5770-T201-PH-I and AOK-220WiL02-NV-L5-00-5770-T202-PH-I, supplied at 240VAC, 50Hz under maximum continuing light output status.
2. Ambient temperature: $23 \pm 2^\circ\text{C}$, Humidity: $45 \pm 10\%$.
3. Measurement distance: 0.20m.

Calculation of the Hazard exposure limits for the Exempt group:

The philosophical basis for the exempt group classification is that the lamp does not pose any photobiological hazard for the end points in this standard. This requirement is met by any lamp that does not pose:

- an actinic ultraviolet hazard (E_s) within 8-hours exposure (30000 s), nor
- a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min) nor
- a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor
- a retinal thermal hazard (L_R) within 10 s, nor
- an infrared radiation hazard for the eye (E_{IR}) within 1000 s.

These lamps are in the Exempt Group.

Also, lamps that emit infrared radiation without a strong visual stimulus (i.e., less than $10 \text{ cd} \cdot \text{m}^{-2}$) and do not pose a near-infrared retinal hazard (L_{IR}) within 1000 s are in the Exempt Group.

Calculation of the Hazard exposure limits for the Risk Group 1 (Low-Risk):

The philosophical basis for this classification is that the lamp does not pose a hazard due to normal behavioral limitations on exposure. This requirement is met by any lamp that exceeds the limits for the Exempt Group but that does not pose:

- an actinic ultraviolet hazard (E_s) within 10000 s, nor
- a near ultraviolet hazard (E_{UVA}) within 300 s, nor
- a retinal blue-light hazard (L_B) within 100 s, nor
- a retinal thermal hazard (L_R) within 10 s, nor
- an infrared radiation hazard for the eye (E_{IR}) within 100 s.

These lamps are in Risk Group 1 (Low-Risk).

Also, lamps that emit infrared radiation without a strong visual stimulus (i.e., less than $10 \text{ cd} \cdot \text{m}^{-2}$) and do not pose a near-infrared retinal hazard (L_{IR}), within 100 s are in Risk Group 1 (Low-Risk).

Model: AOK-220WiL02-NV-L5-00-5770-T202-PH-I									
Risk			Exempt Group		Risk Group 1 (Low-Risk)		Risk Group 2 (Mod-Risk)		Ref.
Optical hazard	Wavelength range	Units	Limit	Result	Limit	Result	Limit	Result	
1. E _s	200-400 nm	W/m ²	0.001	2.55x10 ⁻⁴	--	--	--	--	Exempt Group
2. E _{UVA}	315-400 nm	W/m ²	0.33	2.95x10 ⁻⁴	--	--	--	--	Exempt Group
3. L _B	300-700 nm	W/m ² sr	100	--	10000	3.30 x10 ⁺³	--	--	Risk Group 1
4. E _{B(small source)}	300-700 nm	W/m ²	--	--	--	--	--	--	--
5. L _R	380-1400 nm	W/m ² sr	28000/α	4.19x10 ⁻⁴	--	--	--	--	Exempt Group
6. L _{IR}	780-1400 nm	W/m ² sr	6000/α	17.22	--	--	--	--	Exempt Group
7. E _{IR}	780-3000 nm	W/m ²	100	4.24x10 ⁻³	--	--	--	--	Exempt Group
8. E _H	380-3000 nm	W/m ²	3556.56	1.43	N/A	N/A	N/A	N/A	Exempt Group
Over view of classification									Risk Group 1
Note: Angular subtense of whole lamp is 55.02 mrad.									

Appendix: Photo Documentation

Overview of AOK-70WiL02-NV-L3-00-XX70-BN-PH-I (same for 20W, 30W, 40W, 50W, 60W models except different LED quantity and size)



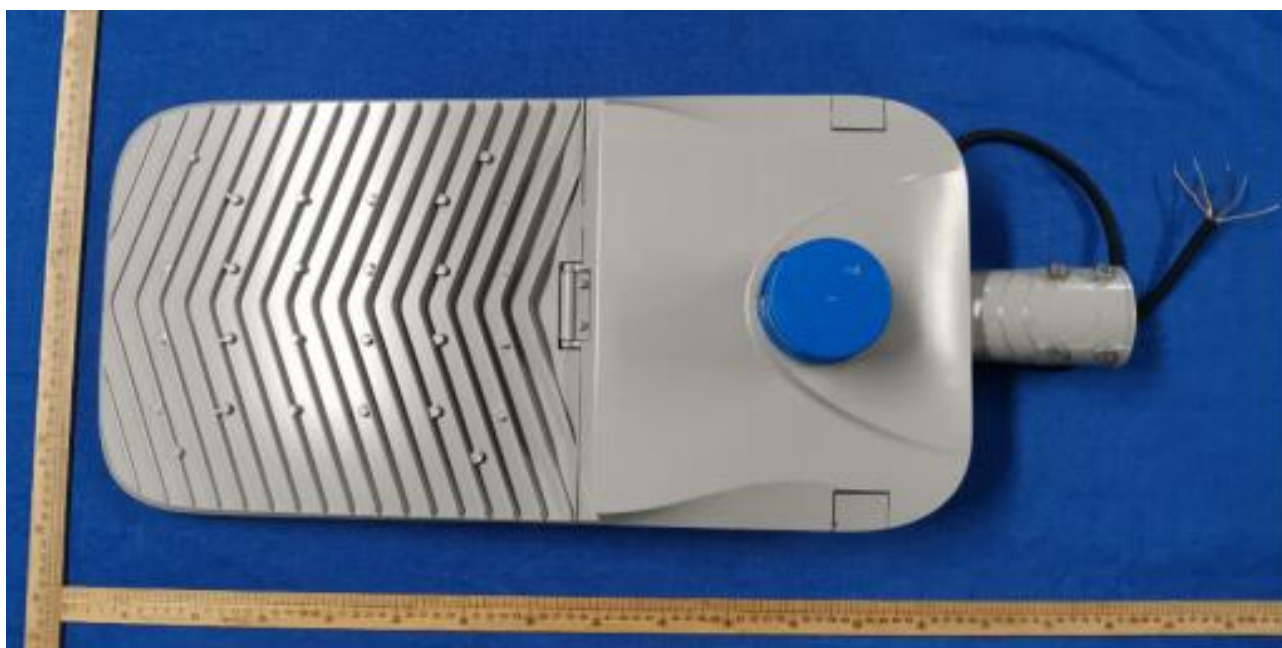
Overview of AOK-70WiL02-NV-L3-00-XX70-BN-PH-I (same for 20W, 30W, 40W, 50W, 60W models except different LED quantity and size)



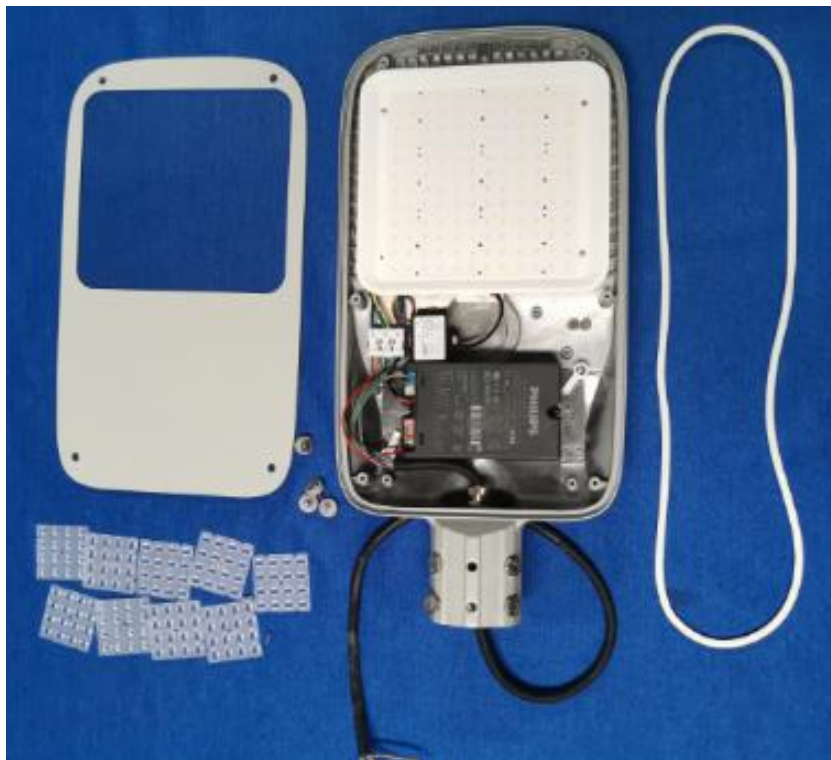
Over view of AOK-200WiL02-NV-L3-00-XX70-BN-PH-I (same for 80W, 90W, 100W, 120W, 130W, 140W, 150W, 160W, 170W, 180W and 200W models except different LED quantity and size)



Over view of AOK-220WiL02-NV-L3-00-XX70-BN-PH-I (same for 80W, 90W, 100W, 120W, 130W, 140W, 150W, 160W, 170W, 180W and 200W models except different LED quantity and size)



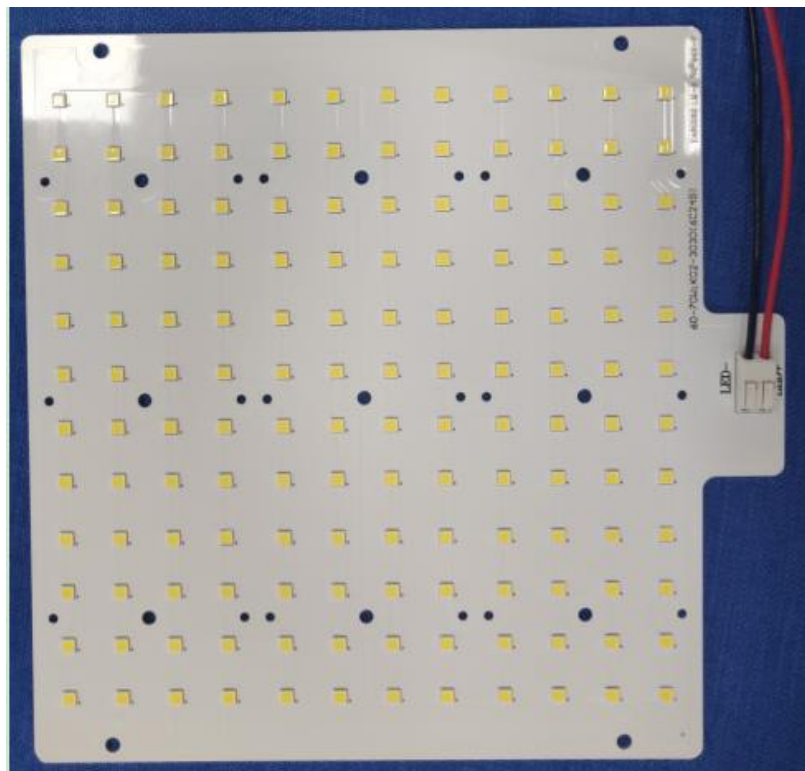
Exploded view of AOK-70WiL02-NV-L3-00-XX70-BN-PH-I (same for 20W, 30W, 40W, 50W, 60W models except different LED quantity and size)



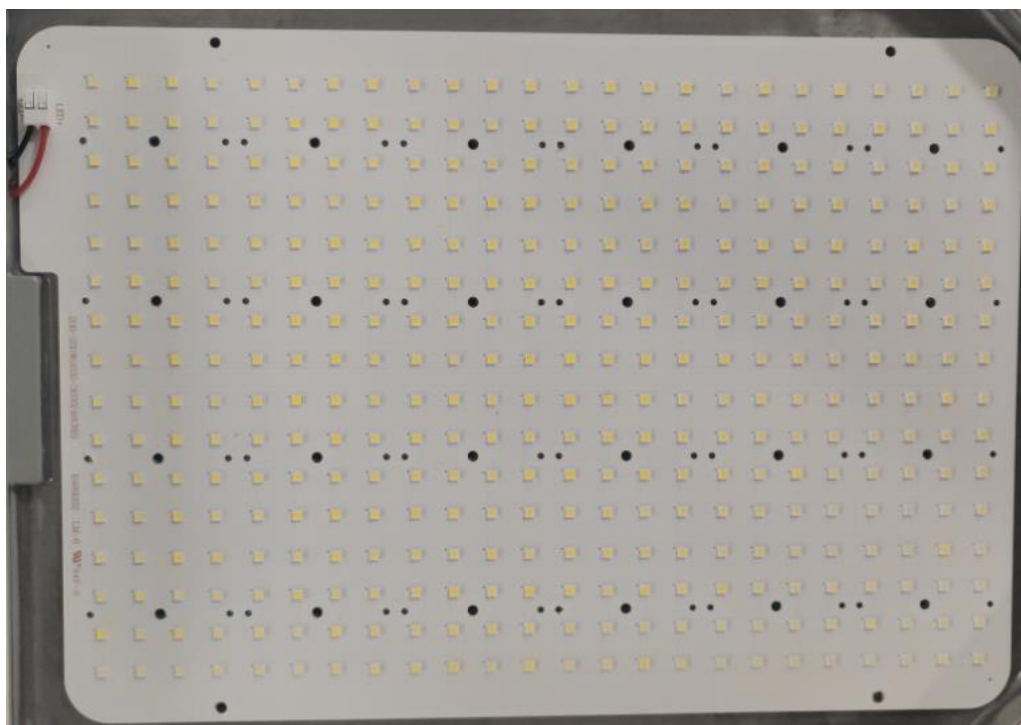
Exploded view of AOK-220WiL02-NV-L3-00-XX70-BN-PH-I (same for 80W, 90W, 100W, 120W, 130W, 140W, 150W, 160W, 170W, 180W and 200W models except different LED quantity and size)



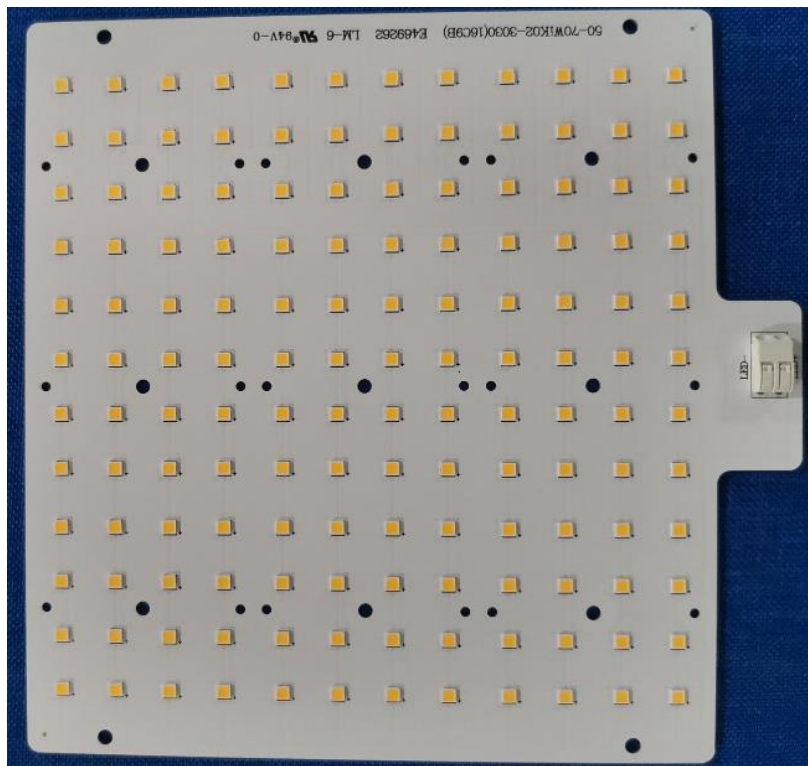
LED module with 3030 LED of 70W model (same for 20W, 30W, 40W, 50W, 60W models except different LED quantity)



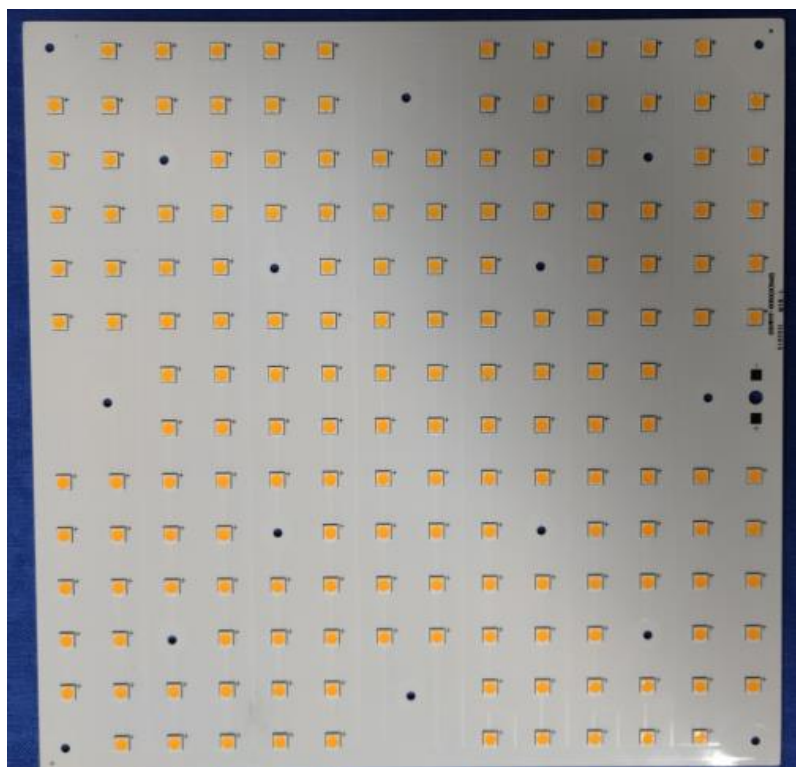
LED module with 3030 LED of 220W model (same for 80W, 90W, 100W, 120W, 130W, 140W, 150W, 160W, 170W, 180W and 200W models except different LED quantity)



LED module with 5050 LED of 70W model (same for 20W, 30W, 40W, 50W, 60W models except different LED quantity)



LED module with 5050 LED of 220W model (same for 80W, 90W, 100W, 120W, 130W, 140W, 150W, 160W, 170W, 180W and 200W models except different LED quantity)



view of lens



---End of Test Report---