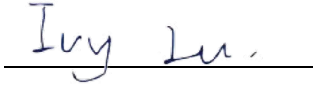


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Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2024-02-02	
Auftraggeber: Client:	Bemko Sp. z o.o. ul. Bocznicowa 13, 05-850 Jawczyce, Poland			
Prüfgegenstand: Test item:	LED Street Light			
Bezeichnung / Typ-Nr.: Identification / Type no.:	AVN series, details see model list			
Auftrags-Inhalt: Order content:	Test report			
Prüfgrundlage: Test specification:	IES TM-21-11			
Wareneingangsdatum: Date of sample receipt:	2024-03-11			
Prüfmuster-Nr.: Test sample no.:	A003679840			
Prüfzeitraum: Testing period:	2024-06-01 - 2024-06-06			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Guangdong) Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: Test result*:	See following pages			
geprüft von: tested by:			genehmigt von: authorized by:	
Datum: Date:	2024-07-11		Ausstellungsdatum: Issue date:	2024-07-11
Stellung / Position:	Dere Zhang / PE		Stellung / Position:	Ivy Lu / Authorizer
Sonstiges / Other:	The temperature measurement according to Annex A of IES LM-84-14 and Clause 12.4 of IEC 60598-1:2020.			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet			
* Legend:	P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) 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 above mentioned 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>				

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature <i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature</i>
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>
5	Factory / Fabrik: Bemko Sp. z o.o. Address: ul. Bocznicowa 13, 05-850 Jawczyce, Poland

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Produktbeschreibung
Product description

1	Produktdetails Product details	The products covered by this report are LED Street Light, for outdoor use. All models have same construction, except LED quantity, housing dimensions and LED driver. Model AVN-280B0-76I1-9006-T2M8 was chosen to conduct test basing on client provided declaration which have max. power and I _f for single LED.
2	Maße / Gewicht Dimensions / Weight	--
3	Bedienelemente Operating elements	--
4	Ausstattung / Zubehör Equipment / Accessories	--
5	Verwendete Materialien Used materials	--
6	Sonstiges Other	Test sample(s), as well sample information, description, product details and intended usage was provided by customer.
7	Prüfmusterbereitstellung: Test sample obtaining	☒ Sending by customer ☐ Sampling by TÜV Rheinland Group ☐ others:

Product details - model list

Model name*	Rated input	Rated power (W)	ta (°C)	LED type	LED quantity (pcs)	Used LED driver	Lifetime (h) [L70B50]	CCT (K)
					10in1 lens			
Series 1								
AVN-030B0-7xS1-9006-yyy	180-277V~, 50/60Hz	30	50	5050	40	SS-30GA-E62B	120000	2700-6500
AVN-040B0-7xS1-9006-yyy	180-277V~, 50/60Hz	40	50	5050	40	SS-50GA-E62B	120000	2700-6500
AVN-050B0-7xS1-9006-yyy	180-277V~, 50/60Hz	50	50	5050	40	SS-50GA-E62B	120000	2700-6500
AVN-060B0-7xS1-9006-yyy	180-277V~, 50/60Hz	60	50	5050	60	SS-75GA-E62B	120000	2700-6500
AVN-080B0-7xS1-9006-yyy	180-277V~, 50/60Hz	80	50	5050	60	SS-75GA-E62B	120000	2700-6500
AVN-100B0-7xS1-9006-yyy	180-277V~, 50/60Hz	100	50	5050	90	SS-100GA-E62B	120000	2700-6500
AVN-120B0-7xS1-9006-yyy	180-277V~, 50/60Hz	120	50	5050	90	SS-150GA-E62B	120000	2700-6500
AVN-150B0-7xS1-9006-yyy	180-277V~, 50/60Hz	150	50	5050	120	SS-150GA-E62B	120000	2700-6500
AVN-180B0-7xS1-9006-yyy	180-277V~, 50/60Hz	180	50	5050	120	SS-200GA-E62B	120000	2700-6500
AVN-200B0-7xS1-9006-yyy	180-277V~, 50/60Hz	200	50	5050	200	SS-200GA-E62B	120000	2700-6500
AVN-220B0-7xS1-9006-yyy	180-277V~, 50/60Hz	220	50	5050	200	SS-250GA-E62B	120000	2700-6500
AVN-240B0-7xS1-9006-yyy	180-277V~, 50/60Hz	240	50	5050	200	SS-250GA-E62B	120000	2700-6500

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AVN-250B0-7xS1-9006- yyy	180-277V~, 50/60Hz	250	50	5050	200	SS-250GA-E62B	120000	2700-6500
Series 2								
AVN-030B0-7xI1-9006- yyy	100-277V~, 50/60Hz	30	50	5050	40	EUM- 030S105DG	120000	2700-6500
AVN-040B0-7xI1-9006- yyy	100-277V~, 50/60Hz	40	50	5050	40	EUM- 050S150DG	120000	2700-6500
AVN-050B0-7xI1-9006- yyy	100-277V~, 50/60Hz	50	50	5050	40	EUM- 050S150DG	120000	2700-6500
AVN-060B0-7xI1-9006- yyy	100-240V~, 50/60Hz	60	50	5050	60	EUM- 075S210DG	120000	2700-6500
AVN-080B0-7xI1-9006- yyy	100-240V~, 50/60Hz	80	50	5050	60	EUM- 075S210DG	120000	2700-6500
AVN-100B0-7xI1-9006- yyy	100-240V~, 50/60Hz	100	50	5050	90	EUM- 100S280DG	120000	2700-6500
AVN-120B0-7xI1-9006- yyy	100-240V~, 50/60Hz	120	50	5050	90	EUM- 150S420DG	120000	2700-6500
AVN-150B0-7xI1-9006- yyy	200-240V~, 50/60Hz	150	50	5050	120	EUM- 150S420DG	120000	2700-6500
AVN-180B0-7xI1-9006- yyy	200-240V~, 50/60Hz	180	50	5050	120	EUM- 200S560DG	120000	2700-6500
AVN-200B0-7xI1-9006- yyy	200-240V~, 50/60Hz	200	50	5050	200	EUM- 200S560DG	120000	2700-6500
AVN-220B0-7xI1-9006- yyy	200-240V~, 50/60Hz	220	50	5050	200	EUM- 240S670DG	120000	2700-6500
AVN-240B0-7xI1-9006- yyy	200-240V~, 50/60Hz	240	50	5050	200	EUM- 240S670DG	120000	2700-6500
AVN-280B0-7xI1-9006- yyy	100-240V~, 50/60Hz	280	50	5050	200	EUM- 320S760DG	120000	2700-6500
Series 3								
AVN-025D1-7xI1-9006- yyy	200-240V~, 50/60Hz	25	50	5050	40	EBS- 025S070BT2	120000	2700-6500
AVN-040D1-7xI1-9006- yyy	200-240V~, 50/60Hz	40	50	5050	40	EBS- 040S105BT2	120000	2700-6500
AVN-060D1-7xI1-9006- yyy	200-240V~, 50/60Hz	60	50	5050	60	EBS- 080S150BT2	120000	2700-6500
AVN-080D1-7xI1-9006- yyy	200-240V~, 50/60Hz	80	50	5050	60	EBS- 080S150BT2	120000	2700-6500
AVN-100D1-7xI1-9006- yyy	200-240V~, 50/60Hz	100	50	5050	90	EBS- 120S105BT2	120000	2700-6500
AVN-120D1-7xI1-9006- yyy	200-240V~, 50/60Hz	120	50	5050	90	EBS- 120S105BT2	120000	2700-6500
AVN-150D1-7xI1-9006- yyy	200-240V~, 50/60Hz	150	50	5050	120	EBS- 165S150BT2	120000	2700-6500
AVN-165D1-7xI1-9006- yyy	200-240V~, 50/60Hz	165	50	5050	120	EBS- 165S150BT2	120000	2700-6500
Series 4								
AVN-030B0-7xS2-9006- yyy	180-277V~, 50/60Hz	30	50	5050	40	SS-30GA- E62BE	120000	2700-6500
AVN-040B0-7xS2-9006- yyy	180-277V~, 50/60Hz	40	50	5050	40	SS-50GA- E62BE	120000	2700-6500
AVN-050B0-7xS2-9006- yyy	180-277V~, 50/60Hz	50	50	5050	40	SS-50GA- E62BE	120000	2700-6500

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Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
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AVN-060B0-7xS2-9006-yyy	180-277V~, 50/60Hz	60	50	5050	60	SS-75GA-E62BE	120000	2700-6500
AVN-080B0-7xS2-9006-yyy	180-277V~, 50/60Hz	80	50	5050	60	SS-75GA-E62BE	120000	2700-6500
AVN-100B0-7xS2-9006-yyy	180-277V~, 50/60Hz	100	50	5050	90	SS-100GA-E62BE	120000	2700-6500
AVN-120B0-7xS2-9006-yyy	180-277V~, 50/60Hz	120	50	5050	90	SS-150GA-E62BE	120000	2700-6500
AVN-150B0-7xS2-9006-yyy	180-277V~, 50/60Hz	150	50	5050	120	SS-150GA-E62BE	120000	2700-6500
AVN-180B0-7xS2-9006-yyy	180-277V~, 50/60Hz	180	50	5050	120	SS-200GA-E62BE	120000	2700-6500
AVN-200B0-7xS2-9006-yyy	180-277V~, 50/60Hz	200	50	5050	200	SS-200GA-E62BE	120000	2700-6500
AVN-220B0-7xS2-9006-yyy	180-277V~, 50/60Hz	220	50	5050	200	SS-250GA-E62BE	120000	2700-6500
AVN-240B0-7xS2-9006-yyy	180-277V~, 50/60Hz	240	50	5050	200	SS-250GA-E62BE	120000	2700-6500
AVN-250B0-7xS2-9006-yyy	180-277V~, 50/60Hz	250	50	5050	200	SS-250GA-E62BE	120000	2700-6500
Series 5								
AVN-025D1-7xI2-9006-yyy	200-240V~, 50/60Hz	25	50	5050	40	EBS-025S070BT2	120000	2700-6500
AVN-040D1-7xI2-9006-yyy	200-240V~, 50/60Hz	40	50	5050	40	EBS-040S105BT2	120000	2700-6500
AVN-060D1-7xI2-9006-yyy	200-240V~, 50/60Hz	60	50	5050	60	EBS-080S150BT2	120000	2700-6500
AVN-080D1-7xI2-9006-yyy	200-240V~, 50/60Hz	80	50	5050	60	EBS-080S150BT2	120000	2700-6500
AVN-100D1-7xI2-9006-yyy	200-240V~, 50/60Hz	100	50	5050	90	EBS-120S105BT2	120000	2700-6500
AVN-120D1-7xI2-9006-yyy	200-240V~, 50/60Hz	120	50	5050	90	EBS-120S105BT2	120000	2700-6500
AVN-150D1-7xI2-9006-yyy	200-240V~, 50/60Hz	150	50	5050	120	EBS-165S150BT2	120000	2700-6500
AVN-165D1-7xI2-9006-yyy	200-240V~, 50/60Hz	165	50	5050	120	EBS-165S150BT2	120000	2700-6500
Model name*	Rated input	Rated power (W)	ta (°C)	LED type	LED quantity (pcs) 8in1 lens	Used LED driver	Lifetime (h) [L70B50]	CCT (K)
Series 6								
AVN-030B0-7xS1-9006-yyy8	180-277V~, 50/60Hz	30	50	5050	32	SS-30GA-E62B	120000	2700-6500
AVN-040B0-7xS1-9006-yyy8	180-277V~, 50/60Hz	40	50	5050	32	SS-50GA-E62B	120000	2700-6500
AVN-050B0-7xS1-9006-yyy8	180-277V~, 50/60Hz	50	50	5050	32	SS-50GA-E62B	120000	2700-6500
AVN-060B0-7xS1-9006-yyy8	180-277V~, 50/60Hz	60	50	5050	48	SS-75GA-E62B	120000	2700-6500
AVN-080B0-7xS1-9006-yyy8	180-277V~, 50/60Hz	80	50	5050	48	SS-75GA-E62B	120000	2700-6500
AVN-100B0-7xS1-9006-yyy8	180-277V~, 50/60Hz	100	50	5050	72	SS-100GA-E62B	120000	2700-6500

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AVN-120B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	120	50	5050	72	SS-150GA-E62B	120000	2700-6500
AVN-150B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	150	50	5050	96	SS-150GA-E62B	120000	2700-6500
AVN-180B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	180	50	5050	96	SS-200GA-E62B	120000	2700-6500
AVN-200B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	200	50	5050	160	SS-200GA-E62B	120000	2700-6500
AVN-220B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	220	50	5050	160	SS-250GA-E62B	120000	2700-6500
AVN-240B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	240	50	5050	160	SS-250GA-E62B	120000	2700-6500
AVN-250B0-7xS1-9006- yyy8	180-277V~, 50/60Hz	250	50	5050	160	SS-250GA-E62B	120000	2700-6500
Series 7								
AVN-030B0-7xI1-9006- yyy8	100-277V~, 50/60Hz	30	50	5050	32	EUM- 030S105DG	120000	2700-6500
AVN-040B0-7xI1-9006- yyy8	100-277V~, 50/60Hz	40	50	5050	32	EUM- 050S150DG	120000	2700-6500
AVN-050B0-7xI1-9006- yyy8	100-277V~, 50/60Hz	50	50	5050	32	EUM- 050S150DG	120000	2700-6500
AVN-060B0-7xI1-9006- yyy8	100-240V~, 50/60Hz	60	50	5050	48	EUM- 075S210DG	120000	2700-6500
AVN-080B0-7xI1-9006- yyy8	100-240V~, 50/60Hz	80	50	5050	48	EUM- 075S210DG	120000	2700-6500
AVN-100B0-7xI1-9006- yyy8	100-240V~, 50/60Hz	100	50	5050	72	EUM- 100S280DG	120000	2700-6500
AVN-120B0-7xI1-9006- yyy8	100-240V~, 50/60Hz	120	50	5050	72	EUM- 150S420DG	120000	2700-6500
AVN-150B0-7xI1-9006- yyy8	200-240V~, 50/60Hz	150	50	5050	96	EUM- 150S420DG	120000	2700-6500
AVN-180B0-7xI1-9006- yyy8	200-240V~, 50/60Hz	180	50	5050	96	EUM- 200S560DG	120000	2700-6500
AVN-200B0-7xI1-9006- yyy8	200-240V~, 50/60Hz	200	50	5050	160	EUM- 200S560DG	120000	2700-6500
AVN-220B0-7xI1-9006- yyy8	200-240V~, 50/60Hz	220	50	5050	160	EUM- 240S670DG	120000	2700-6500
AVN-240B0-7xI1-9006- yyy8	200-240V~, 50/60Hz	240	50	5050	160	EUM- 240S670DG	120000	2700-6500
AVN-280B0-7xI1-9006- yyy8	100-240V~, 50/60Hz	280	50	5050	160	EUM- 320S760DG	120000	2700-6500
Series 8								
AVN-025D1-7xI1-9006- yyy8	200-240V~, 50/60Hz	25	50	5050	32	EBS- 025S070BT2	120000	2700-6500
AVN-040D1-7xI1-9006- yyy8	200-240V~, 50/60Hz	40	50	5050	32	EBS- 040S105BT2	120000	2700-6500
AVN-060D1-7xI1-9006- yyy8	200-240V~, 50/60Hz	60	50	5050	48	EBS- 080S150BT2	120000	2700-6500
AVN-080D1-7xI1-9006- yyy8	200-240V~, 50/60Hz	80	50	5050	48	EBS- 080S150BT2	120000	2700-6500
AVN-100D1-7xI1-9006- yyy8	200-240V~, 50/60Hz	100	50	5050	72	EBS- 120S105BT2	120000	2700-6500
AVN-120D1-7xI1-9006- yyy8	200-240V~, 50/60Hz	120	50	5050	72	EBS- 120S105BT2	120000	2700-6500

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AVN-150D1-7xI1-9006-yyy8	200-240V~, 50/60Hz	150	50	5050	96	EBS- 165S150BT2	120000	2700-6500
AVN-165D1-7xI1-9006-yyy8	200-240V~, 50/60Hz	165	50	5050	96	EBS- 165S150BT2	120000	2700-6500
Series 9								
AVN-030B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	30	50	5050	32	SS-30GA- E62BE	120000	2700-6500
AVN-040B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	40	50	5050	32	SS-50GA- E62BE	120000	2700-6500
AVN-050B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	50	50	5050	32	SS-50GA- E62BE	120000	2700-6500
AVN-060B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	60	50	5050	48	SS-75GA- E62BE	120000	2700-6500
AVN-080B0-7xS2-9006-yyy	180-277V~, 50/60Hz	80	50	5050	48	SS-75GA- E62BE	120000	2700-6500
AVN-100B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	100	50	5050	72	SS-100GA- E62BE	120000	2700-6500
AVN-120B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	120	50	5050	72	SS-150GA- E62BE	120000	2700-6500
AVN-150B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	150	50	5050	96	SS-150GA- E62BE	120000	2700-6500
AVN-180B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	180	50	5050	96	SS-200GA- E62BE	120000	2700-6500
AVN-200B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	200	50	5050	160	SS-200GA- E62BE	120000	2700-6500
AVN-220B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	220	50	5050	160	SS-250GA- E62BE	120000	2700-6500
AVN-240B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	240	50	5050	160	SS-250GA- E62BE	120000	2700-6500
AVN-250B0-7xS2-9006-yyy8	180-277V~, 50/60Hz	250	50	5050	160	SS-250GA- E62BE	120000	2700-6500
Series 10								
AVN-025D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	25	50	5050	32	EBS- 025S070BT2	120000	2700-6500
AVN-040D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	40	50	5050	32	EBS- 040S105BT2	120000	2700-6500
AVN-060D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	60	50	5050	48	EBS- 080S150BT2	120000	2700-6500
AVN-080D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	80	50	5050	48	EBS- 080S150BT2	120000	2700-6500
AVN-100D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	100	50	5050	72	EBS- 120S105BT2	120000	2700-6500
AVN-120D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	120	50	5050	72	EBS- 120S105BT2	120000	2700-6500
AVN-150D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	150	50	5050	96	EBS- 165S150BT2	120000	2700-6500
AVN-165D1-7xI2-9006-yyy8	200-240V~, 50/60Hz	165	50	5050	96	EBS- 165S150BT2	120000	2700-6500

*Note:

a) 'x' denotes CCT. For example, x=2 means 2700K, x=3 means 3000K, x=4 means 4000K, x=5 means 5000K, x=6 means 6500K.

b) 'yyy' denotes lens type, it can be T2M, T2S, T3M, T3S.

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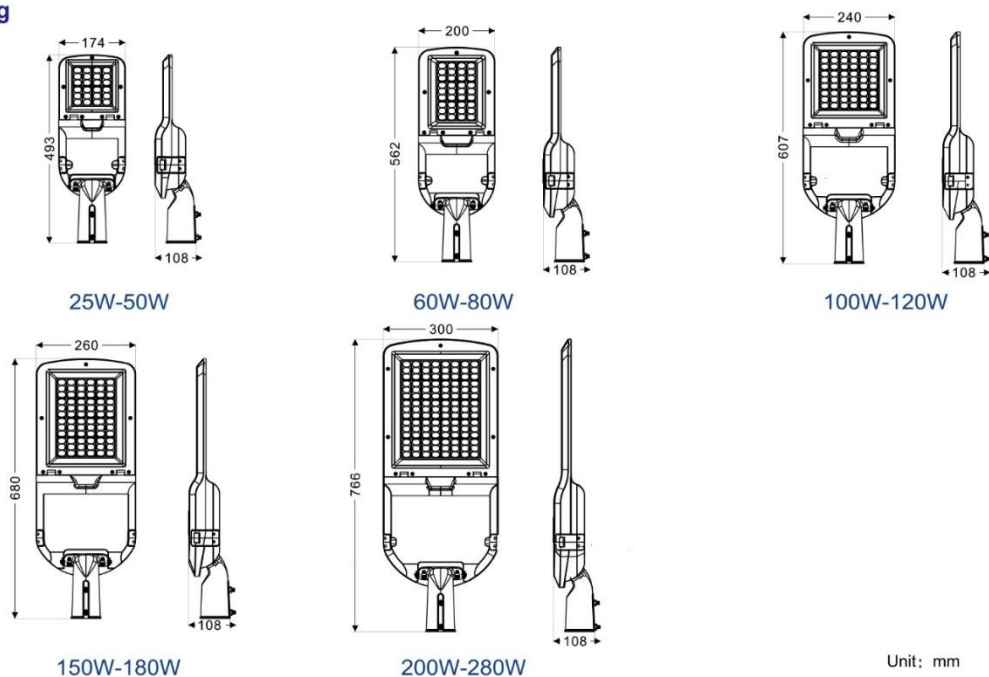
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LED specification:

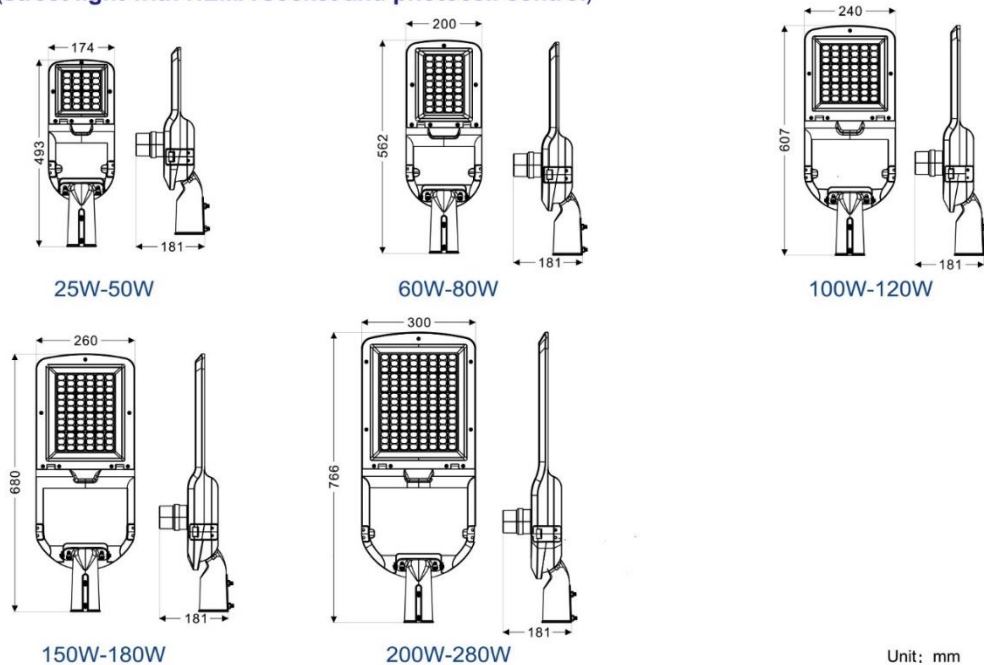
Model	Manufacturer	Size (mm)	I _F (mA)	V _F (V)	CCT (K)	Viewing angle (°)
GY-CT5050W-S8P1B	Shenzhen Guangyou Optoelectronic Technology Co., Ltd.	5.0x5.0x0.7	60	22-24	2700-6500	120

Dimensions (mm):

Drawing



Drawing(street light with NEMA socket and photocell control)



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Test Method

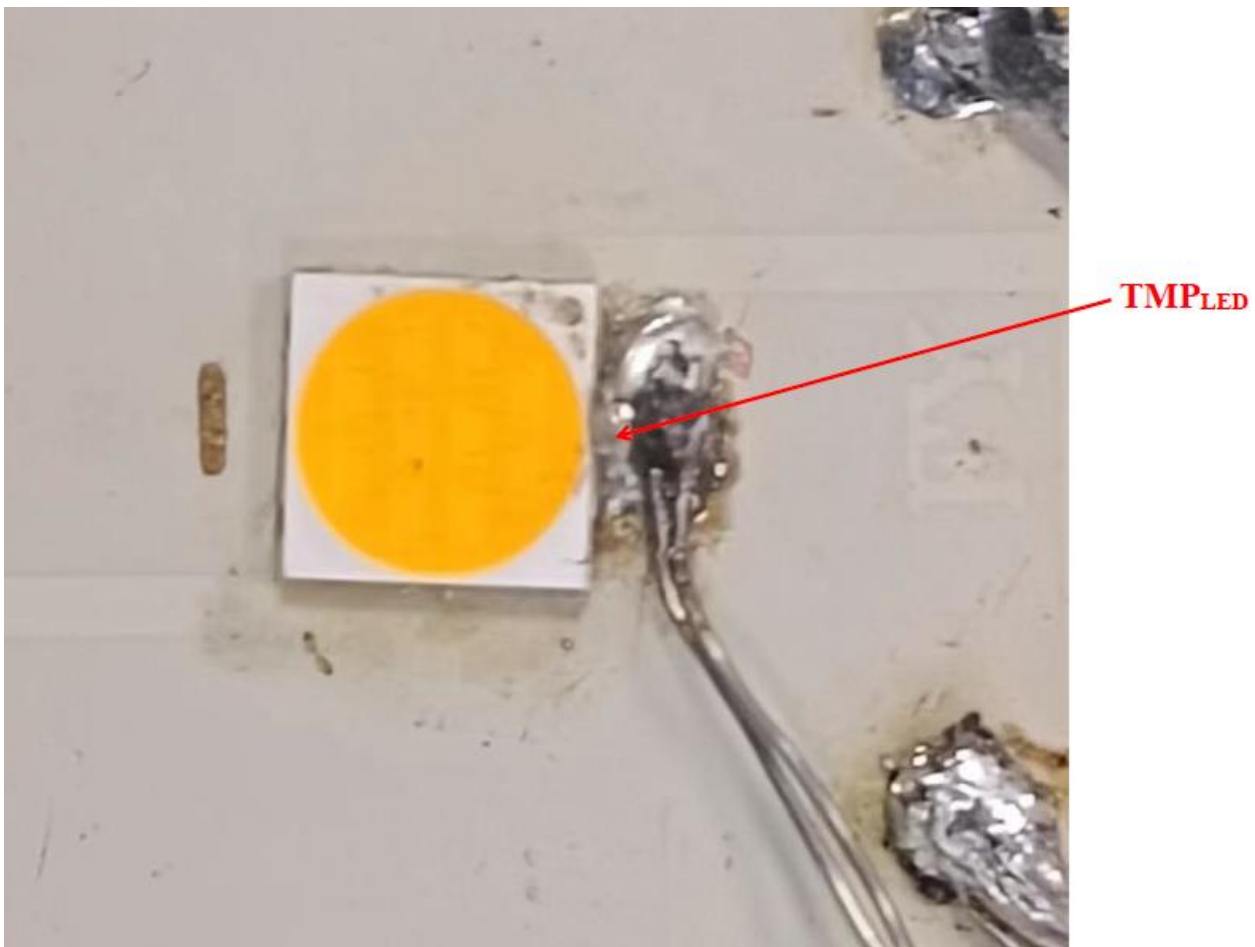
The thermal test was conducted according to Annex A of IES LM-84-14 and Clause 12.4 of IEC 60598-1:2020, the luminaire shall be installed or supported to simulate intended usage, in accordance with the manufacturer's instructions.

The ambient temperature in which measurements are being taken shall be maintained at 25°C±5°C.

The apparatus construction followed the description in IEC 60598-1 for normal temperature test. Thermocouples were placed on the LED package that the location was indicated by LM-80 report.

The temperatures shall be measured after they have stabilized, when the test has been running for a minimum of 3 hours and three successive readings taken at 15 min intervals are within 1°C of one another and are not rising.

ISTMT test location according to LM80 report provided by client, for further information please see report no. Issued BL220614012-9B by Shenzhen Belling Efficiency Testing Lab Co., Ltd.



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Shenzhen Belling Efficiency Testing Lab Co., Ltd



TEST REPORT

ANSI/IES LM-80-15

MEASURING LUMEN MAINTENANCE OF LED LIGHT SOURCES

Shenzhen Guangyou Optoelectronic Technology Co., Ltd.

Floor 4, building A2, qixing wisdom city, shiyan street, baoan district, shenzhen

Report No.: BL220614012-9B

Product Description: LED Package

Model No.: GY-CT5050W-S#P#X

Test Initiation Date: 2020-03-25

Test Completion Date: 2020-03-27 to 2022-10-12

Report Issue Date: 2023-11-08

Test Standard: ANSI/IES LM-80-15

Test Laboratory: Shenzhen Belling Efficiency Testing Lab Co., Ltd.

Tested by
Sam Chen



Reviewed by
Jason Zhou



Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Shenzhen Belling Efficiency Testing Lab Co., Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement By NVLAP, NIST, or any agency of the U.S. Government.

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Test Result

Input voltage (V)	Frequency (Hz)	Current (A)	Power factor	Totally power (W)
230	50	1.213	0.978	271.8

Thermocouple Location	Temperature (°C)	I _F LED drive current (mA)	
	Measured value	Measured value	LM-80 Limited
Ts of LED chip	94.5	54	60
Ambient	25.0		



TM-21 Report

Table 1: Report at each LM-80 Test Condition					
Description of LED Light Source Tested (manufacturer, model, catalog number)		LED model: GY-CT5050W-S8P1B Luminaire tested: AVN-280B0-76I1-9006-T2M8			
		Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp	
Sample size	25	Sample size	25	Sample size	25
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	60	DUT drive current used in the test (mA)	60	DUT drive current used in the test (mA)	60
Test duration (hours)	20,000	Test duration (hours)	20,000	Test duration (hours)	20,000
Test duration used for projection (hour to hour)	10,000 - 20,000	Test duration used for projection (hour to hour)	10,000 - 20,000	Test duration used for projection (hour to hour)	10,000 - 20,000
Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105
α	8.162E-07	α	1.250E-06	α	1.457E-06
B	1.000	B	1.002	B	1.000
Calculated L70(20k) (hours)	438,000	Calculated L70(20k) (hours)	287,000	Calculated L70(20k) (hours)	245,000
Reported L70(20k) (hours)	>120000	Reported L70(20k) (hours)	>120000	Reported L70(20k) (hours)	>120000

Table 2: Interpolation Report (projection based on <i>in-situ</i> temperature entered)	
T _{s,1} (°C)	85.00
T _{s,1} (K)	358.15
α ₁	1.250E-06
B ₁	1.002
T _{s,2} (°C)	105.00
T _{s,2} (K)	378.15
α ₂	1.457E-06
B ₂	1.000
E _d /k ₀	1.04E+03
A	2.259E-05
B ₀	1.001
T _{s,i} (°C)	94.50
T _{s,i} (K)	367.65
α _i	1.347E-06
Projected L70(20k) at 94.5°C (hours)	266,000
Reported L70(20k) at 94.5°C (hours)	>120000

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**Absatz
Clause**

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**Messergebnisse –
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Measuring results - Remarks**

**Ergebnis
Result**



TM-21 Inputs

Instructions

Yellow fields are completed by the user. Fields not used should be left blank. Cyan fields are calculated based on user entries.

First, enter a description of the LED light source tested. Then complete the fields labeled "LM-80 Testing Details". Test duration must be at least 6,000 hours. If only one case temperature data set is to be used (no interpolation), complete only "Tested case temperature 1". For only two case temperature data sets, complete 1 and 2.

Next, further to the right, in the corresponding box(es) for each tested case temperature, enter the test data along with the time (in hours) at which each measurement was taken. Data entered must be normalized then averaged measured data (per TM-21 sections 5.2.1 and 5.2.2).

Enter drive current, *in-situ* temperature data and the percentage of initial lumens to project to in the fields labeled "In-Situ Inputs".

Results can be tailored to estimate lumen maintenance at a specific time by entering a value (t) in the yellow field.

A complete TM-21 report will appear on the next tab labeled "Report".

Description of LED Light Source Tested (manufacturer, model, catalog number)

LED model: GY-CT5050W-S8P1B
Luminaire tested: AVN-280B0-7611-9006-T2M8

LM-80 Testing Details

Total number of units tested per case temperature:	25
Number of failures:	0
Number of units measured:	25
Test duration (hours):	20000
Tested drive current (mA):	60
Tested case temperature 1 (T_{c1} , °C):	55
Tested case temperature 2 (T_{c2} , °C):	85
Tested case temperature 3 (T_{c3} , °C):	105

LM-80 Test Inputs

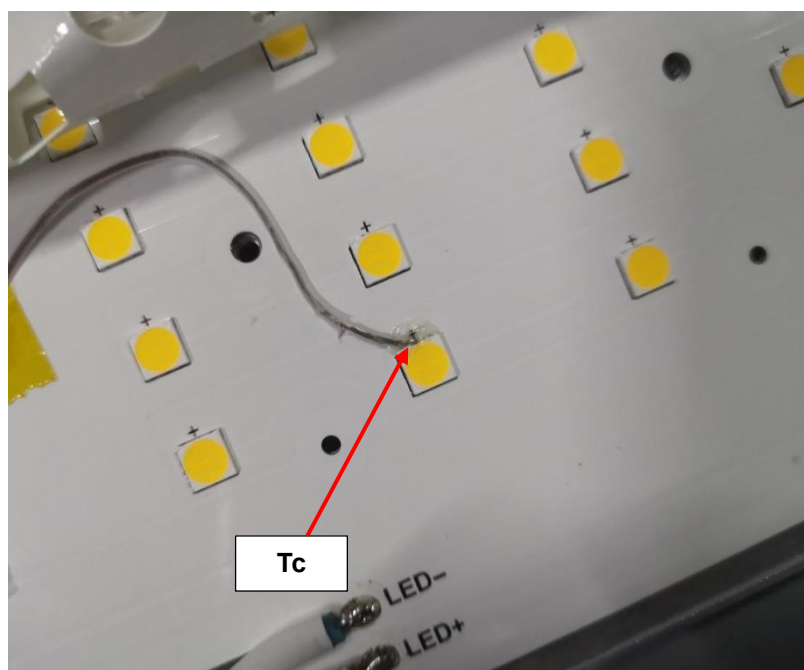
Test Data for 55°C Case Temperature		Test Data for 85°C Case Temperature		Test Data for 105°C Case Temperature	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
1000	100.08%	1000	100.05%	1000	99.96%
2000	100.02%	2000	99.96%	2000	99.83%
3000	99.94%	3000	99.84%	3000	99.67%
4000	99.83%	4000	99.71%	4000	99.56%
5000	99.71%	5000	99.60%	5000	99.40%
6000	99.62%	6000	99.52%	6000	99.21%
7000	99.54%	7000	99.42%	7000	99.05%
8000	99.42%	8000	99.30%	8000	98.87%
9000	99.32%	9000	99.12%	9000	98.72%
10000	99.26%	10000	98.98%	10000	98.54%
11000	99.19%	11000	98.83%	11000	98.41%
12000	99.03%	12000	98.67%	12000	98.27%
13000	98.81%	13000	98.51%	13000	98.21%
14000	98.81%	14000	98.48%	14000	98.10%
15000	98.73%	15000	98.34%	15000	97.93%
16000	98.65%	16000	98.22%	16000	97.75%
17000	99.54%	17000	98.11%	17000	97.55%
18000	98.45%	18000	98.00%	18000	97.39%
19000	98.36%	19000	97.88%	19000	97.28%
20000	98.24%	20000	97.65%	20000	97.17%

In-Situ Inputs

Drive current for each LED package/array/module (mA):	54
In-situ case temperature (T_c , °C):	94.5
Percentage of initial lumens to project to (e.g. for L_{70} , enter 70):	70

Results

Time (t) at which to estimate lumen maintenance (hours):	120,000
Lumen maintenance at time (t) (%):	85.17%
Calculated L70 (hours):	266,000
Reported L70 (hours):	>120000



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Appendix: Photo Documentation



Picture 1.: Overall view for 25W - 50W



Picture 2.:

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Picture 3.: Overall view for 60W - 80W



Picture 4.:

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Picture 5.: Overall view for 100W - 120W



Picture 6.:

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Picture 7.: Overall view for 150W - 180W



Picture 8.:

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Picture 9.: Overall view for 200W - 280W



Picture 10.:

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Picture 11.: NEMA socket with Shorting cap view



Picture 12.: NEMA shorting cap view

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Picture 13.: Models with Zhaga socket view



Picture 14.: Zhaga socket with cover view

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Picture 15.:

==END OF TEST REPORT==