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## Technical Report No. 611401713001

Rev. 00

Dated 2017-11-07

Client: LITE-ON TECHNOLOGY CORPORATION  
No. 50, Lungyuan 7th Road, Longtan, Taoyuan, Taiwan

Test subject: Product: LED Street Light  
Type: PAQ-24L-EV-NW-W3-GY-350

Test specification: Measurement of power consumption in accordance with the „Unmetered Operational Information Document – Version 17.0“

Purpose of examination: Test according to the test specification

Test result: The test results show that the presented product is in compliance with the specified requirements.

TPS\_GCN\_F\_09.20E – Rev. 1  
2012-10-29

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## 1 Description of the test subject

### 1.1 Function

Class I LED street light.

### 1.2 Consideration of the foreseeable misuse

- ☒ Not applicable
- ☐ Covered through the applied standard
- ☐ Covered by the following comment
- ☐ Covered by attached risk analysis

### 1.3 Technical Data

Model	: PAQ-24L-EV-NW-W3-GY-350
Rated Voltage	: 220-240 Vac
Rated Frequency	: 50/60 Hz
Rated Power	: 27 W
Protection Class	: I
Nominal Dimension	: 420 mm x 210 mm x 95 mm
Lamp type	: LED module
Sample size	: 5 pcs

## 2 Order

### 2.1 Date of Purchase Order, Customer's Reference

2017-10-17

### 2.2 Receipt of Test Sample, Location

2017-10-17, TÜV SÜD Asia Ltd. Taiwan Branch



### 2.3 Date of Testing

2017-10-30 to 2017-10-31

### 2.4 Location of Testing

TÜV SÜD Asia Ltd. Taiwan Branch  
7F., No. 37, Sec. 2, Zhongyang S., Rd., Beitou District, Taipei City, 11270, Taiwan

### 2.5 Points of Non-compliance or Exceptions of the Test Procedure

None

## 3 Test Results

See appendix – Test result for details.

## 4 Remark

- The measurements are conducted after operating for 2 hours to reach their steady load state.
- The customer has declared that the equipment load does not vary with ambient temperature, the testing was conducted at room temperature.
- The customer has declared that the power factor is lagging.
- The LED driver is Philips Xitanium programmable model, tests were performed by using integrated DynaDimmer to perform 100%, 80%, 60%, 50%, 30% dimming powers.
- The measurement uncertainties are for a confidence probability of not less than 95%.
- The measurement uncertainties of the below value (k=2). Urel(v)=0.31%; Urel(i)=1.03%; Urel(w)=1.12%; Urel(f)=0.06%.



## 5 Documentation

- Appendix - Test Result
- Appendix - Photo documentation

## 6 Summary

The measured power factors are NOT less than 0.85 under the operation mode: 100% output.

TÜV SÜD Asia Ltd. Taiwan Branch  
TÜV SÜD Group

Engineer:

Vincent Yen  
Project Handler

Technical Report checked:

Alan Yuan  
Designated Reviewer



### Appendix – Test result (Operation mode: 100% power level)

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	volt-ampere (VA)	Power Factor
Sample 1					
210.0	50.0	0.1303	26.59	27.36	0.9718
220.0	50.0	0.1248	26.57	27.43	0.9684
230.0	50.0	0.1197	26.55	27.53	0.9645
240.0	50.0	0.1152	26.54	27.64	0.9600
250.0	50.0	0.1111	26.52	27.77	0.9552
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 2					
210.0	50.0	0.1313	26.58	27.57	0.9641
220.0	50.0	0.1258	26.56	27.68	0.9597
230.0	50.0	0.1209	26.54	27.81	0.9544
240.0	50.0	0.1165	26.53	27.94	0.9495
250.0	50.0	0.1123	26.52	28.08	0.9446
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 3					
210.0	50.0	0.1310	26.48	27.51	0.9624
220.0	50.0	0.1256	26.45	27.63	0.9574
230.0	50.0	0.1208	26.44	27.78	0.9517
240.0	50.0	0.1163	26.43	27.91	0.9468
250.0	50.0	0.1121	26.42	28.02	0.9425
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 4					
210.0	50.0	0.1317	26.59	27.66	0.9614
220.0	50.0	0.1261	26.57	27.73	0.9578
230.0	50.0	0.1210	26.55	27.82	0.9546
240.0	50.0	0.1165	26.54	27.94	0.9498
250.0	50.0	0.1126	26.53	28.12	0.9433
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 5					
210.0	50.0	0.1314	26.57	27.60	0.9627
220.0	50.0	0.1260	26.55	27.71	0.9581
230.0	50.0	0.1211	26.53	27.85	0.9528
240.0	50.0	0.1167	26.52	27.99	0.9475
250.0	50.0	0.1125	26.52	28.12	0.9429
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		



### Appendix – Test result (Operation mode: 80% power level)

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	volt-ampere (VA)	Power Factor
Sample 1					
210.0	50.0	0.1072	21.31	22.50	0.9470
220.0	50.0	0.1028	21.30	22.62	0.9414
230.0	50.0	0.0989	21.30	22.74	0.9368
240.0	50.0	0.0954	21.30	22.90	0.9301
250.0	50.0	0.0924	21.30	23.10	0.9222
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 2					
210.0	50.0	0.1075	21.33	22.58	0.9449
220.0	50.0	0.1033	21.32	22.73	0.9380
230.0	50.0	0.0997	21.32	22.92	0.9300
240.0	50.0	0.0963	21.31	23.11	0.9223
250.0	50.0	0.0931	21.31	23.28	0.9158
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 3					
210.0	50.0	0.1071	21.23	22.48	0.9422
220.0	50.0	0.1030	21.23	22.65	0.9372
230.0	50.0	0.0994	21.23	22.84	0.9293
240.0	50.0	0.0959	21.23	23.01	0.9220
250.0	50.0	0.0927	21.23	23.18	0.9162
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 4					
210.0	50.0	0.1077	21.35	22.61	0.9440
220.0	50.0	0.1034	21.34	22.72	0.9391
230.0	50.0	0.0993	21.33	22.84	0.9341
240.0	50.0	0.0959	21.33	23.00	0.9275
250.0	50.0	0.0929	21.33	23.22	0.9187
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 5					
210.0	50.0	0.1068	21.21	22.42	0.9456
220.0	50.0	0.1027	21.20	22.59	0.9388
230.0	50.0	0.0990	21.20	22.77	0.9311
240.0	50.0	0.0957	21.20	22.95	0.9241
250.0	50.0	0.0925	21.21	23.11	0.9177
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		



### Appendix – Test result (Operation mode: 60% power level)

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	volt-ampere (VA)	Power Factor
Sample 1					
210.0	50.0	0.0832	15.96	17.47	0.9135
220.0	50.0	0.0801	15.97	17.63	0.9055
230.0	50.0	0.0773	15.97	17.80	0.8978
240.0	50.0	0.0750	15.98	18.00	0.8880
250.0	50.0	0.0730	16.00	18.26	0.8764
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 2					
210.0	50.0	0.0834	15.95	17.51	0.9110
220.0	50.0	0.0805	15.96	17.71	0.9011
230.0	50.0	0.0781	15.97	17.96	0.8889
240.0	50.0	0.0759	15.98	18.22	0.8771
250.0	50.0	0.0737	15.99	18.42	0.8686
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 3					
210.0	50.0	0.0830	15.86	17.42	0.9100
220.0	50.0	0.0802	15.86	17.65	0.8987
230.0	50.0	0.0779	15.87	17.92	0.8860
240.0	50.0	0.0756	15.89	18.14	0.8759
250.0	50.0	0.0734	15.90	18.33	0.8678
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 4					
210.0	50.0	0.0837	15.91	17.56	0.9058
220.0	50.0	0.0806	15.92	17.73	0.8974
230.0	50.0	0.0777	15.93	17.86	0.8916
240.0	50.0	0.0753	15.94	18.07	0.8819
250.0	50.0	0.0735	15.95	18.38	0.8677
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 5					
210.0	50.0	0.0831	15.91	17.44	0.9122
220.0	50.0	0.0803	15.92	17.65	0.9017
230.0	50.0	0.0777	15.93	17.90	0.8901
240.0	50.0	0.0756	15.95	18.12	0.8797
250.0	50.0	0.0734	15.97	18.34	0.8703
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		



### Appendix – Test result (Operation mode: 50% power level)

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	volt-ampere (VA)	Power Factor
Sample 1					
210.0	50.0	0.0721	13.35	15.13	0.8825
220.0	50.0	0.0696	13.35	15.31	0.8721
230.0	50.0	0.0673	13.36	15.50	0.8629
240.0	50.0	0.0655	13.38	15.72	0.8513
250.0	50.0	0.0641	13.40	16.02	0.8365
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 2					
210.0	50.0	0.0719	13.33	15.11	0.8829
220.0	50.0	0.0697	13.34	15.34	0.8701
230.0	50.0	0.0679	13.36	15.62	0.8552
240.0	50.0	0.0662	13.37	15.90	0.8418
250.0	50.0	0.0645	13.39	16.11	0.8308
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 3					
210.0	50.0	0.0718	13.26	15.10	0.8792
220.0	50.0	0.0698	13.27	15.34	0.8652
230.0	50.0	0.0680	13.29	15.64	0.8496
240.0	50.0	0.0661	13.31	15.88	0.8381
250.0	50.0	0.0644	13.33	16.09	0.8289
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 4					
210.0	50.0	0.0726	13.33	15.23	0.8755
220.0	50.0	0.0700	13.34	15.42	0.8660
230.0	50.0	0.0677	13.36	15.58	0.8579
240.0	50.0	0.0659	13.37	15.82	0.8456
250.0	50.0	0.0646	13.39	16.16	0.8288
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 5					
210.0	50.0	0.0717	13.27	15.06	0.8808
220.0	50.0	0.0696	13.28	15.32	0.8672
230.0	50.0	0.0678	13.30	15.59	0.8532
240.0	50.0	0.0661	13.32	15.86	0.8403
250.0	50.0	0.0644	13.35	16.11	0.8289
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		





### Appendix – Test result (Operation mode: 30% power level)

Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	volt-ampere (VA)	Power Factor
Sample 1					
210.0	50.0	0.0502	7.86	10.54	0.7463
220.0	50.0	0.0491	7.89	10.79	0.7316
230.0	50.0	0.0480	7.93	11.04	0.7181
240.0	50.0	0.0473	7.97	11.34	0.7022
250.0	50.0	0.0471	8.00	11.78	0.6795
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

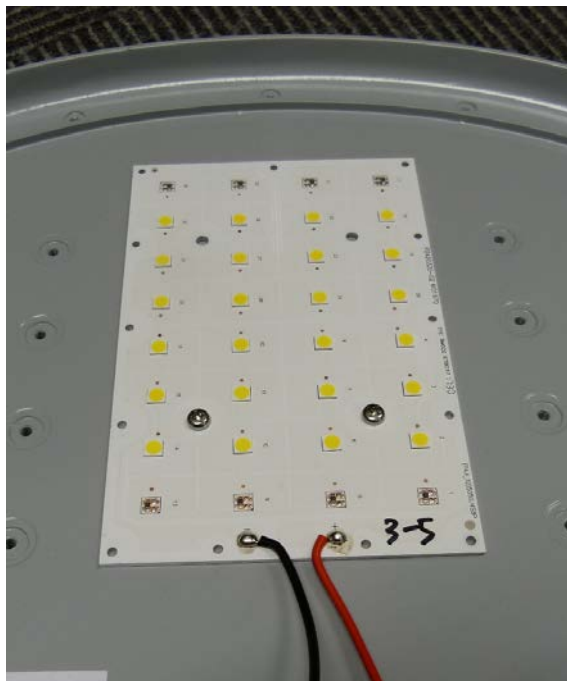
Sample 2					
210.0	50.0	0.0497	7.73	10.44	0.7399
220.0	50.0	0.0490	7.76	10.77	0.7204
230.0	50.0	0.0486	7.79	11.18	0.6977
240.0	50.0	0.0481	7.83	11.57	0.6770
250.0	50.0	0.0475	7.87	11.89	0.6627
Ambient: 22.9°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 3					
210.0	50.0	0.0496	7.75	10.43	0.7436
220.0	50.0	0.0490	7.78	10.78	0.7220
230.0	50.0	0.0487	7.82	11.19	0.6981
240.0	50.0	0.0481	7.85	11.55	0.6800
250.0	50.0	0.0475	7.89	11.88	0.6640
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 4					
210.0	50.0	0.0509	7.89	10.70	0.7375
220.0	50.0	0.0497	7.92	10.95	0.7230
230.0	50.0	0.0485	7.95	11.16	0.7122
240.0	50.0	0.0479	7.99	11.49	0.6950
250.0	50.0	0.0479	8.02	11.97	0.6699
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

Sample 5					
210.0	50.0	0.0495	7.74	10.40	0.7435
220.0	50.0	0.0488	7.76	10.74	0.7228
230.0	50.0	0.0484	7.80	11.13	0.7011
240.0	50.0	0.0479	7.84	11.49	0.6822
250.0	50.0	0.0474	7.88	11.85	0.6653
Ambient: 22.7°C			PF: <input type="checkbox"/> Leading / <input checked="" type="checkbox"/> Lagging		

## Appendix - Photo LED module



## LED Driver

