

# NEM LOAD TABLE REVISED APPENDIX B EXPLANATORY NOTES

PREPARED BY: Retail Markets and Metering

DOCUMENT REF: NEM Load Table

VERSION: 1

DATE: 19 December 2013

FINAL

## Contents

1	Introduction .....	3
2	Assumptions applied to load values .....	3
3	Logic applied to load values .....	3
4	Revised NEM Load Table Appendix B .....	3
	Appendix B: NSW Traffic Signals Load Table.....	4

## 1 Introduction

NSW Roads and Maritime Services (RMS) has been replacing the old technology (Incandescent and quartz halogen lights) with new technology (old and new generation LEDs) for the traffic signals across NSW. The typical load values per aspect (lamp) for old LEDs are 15 to 20 watts whereas new generation LEDs can achieve 5 to 7 watts.

Consequently, the NEM Load Table is to be revised and published to reflect the reduced load values of traffic signal installations that have resulted from the above transition to LED technology.

## 2 Assumptions applied to load values

The following assumptions have been made when deriving load values.

1. Current project to install new generation LEDs will leave 80% of the Traffic Signal installations carrying new LEDs and the rest 20% installations with the old type by the time the revised load table is published.
2. QH lamps will continue to exist in the system for some time to come.
3. Wherever the power consumption values are not available for "BUS", "T" or "BICYCLE" signs, the power consumption of "ARROW" has been used.
4. All the new tests are carried out on one make of lamps only (Aldridge) as it is used in over 80% of the system but we are confident that power consumption may not vary significantly for other makes used in the system.

## 3 Logic applied to load values

The following logic has been applied when deriving load values.

1. The logic used to arrive at the revised power consumption is same as the logic used by Energetics in their report ref: J105703 dated November 2004 (AEMO is satisfied that the Energetics traffic signal cycle logic provides a methodology from which load values for LED traffic signal lanterns are adequately derived).
2. Based on assumption 1 above, calculated overall power consumption = New Power X 0.8 + Old power X 0.2
3. The term "other" in the new load table has been retained to indicate any other sign other than "Full" and "Arrow" i.e., "BUS", "T" "BICYCLE" etc. This is based on the fact that the population of "other" is insignificant as compared to "Full" and "Arrow".

Further details of this logic are contained in the "Table 1 – LED Table Logical Rules" document. These logical rules are the basis of the "Table 2 – Loading Factors (Normal)" document

## 4 Revised NEM Load Table Appendix B

The revisions proposed for the NEM Load Table Appendix B are detailed in the next section of this document. The changes, as stated in the NSW RMS application letter, are:

1. Deletion of devices that are no longer in service;
2. Addition of new devices;
3. Revision of existing device LED load values in accordance with Logic Items and Logic Rules above; and
4. Revision of existing QH load values in accordance with Logic Rules above and Vipac Test Report – Testing of Traffic Signal Lanterns.

## Appendix B: NSW Traffic Signals Load Table

ID	DEVICE TYPE	LOAD (W)
10/0	PTF-NT3/4	75.0
11/0	VC/6	28.0
12/0	PTF-NT1	75.0
15/0	Delta-2	64.0
16/0	Delta 3	64.0
23/0	PSC1 NC12/16	61.0
25/8	Single aspect incandescent / 200MM Street Level	33.0
25/9	Single aspect incandescent / 300MM Mast Arm	70.0
25/10	Single aspect incandescent / 300MM Street Level	70.0
25/11	Single aspect incandescent / 200MM Mast Arm	33.0
26/8	Two aspect incandescent / 200MM Street Level	66.0
26/9	Two aspect incandescent / 300MM Mast Arm	141.0
26/10	Two aspect incandescent / 300MM Street Level	141.0
26/11	Two aspect incandescent / 200MM Mast Arm	66.0
27/8	Three aspect incandescent / 200MM Street Level	66.0
27/9	Three aspect incandescent / 300MM Mast Arm	141.0
27/10	Three aspect incandescent / 300MM Street Level	141.0
27/11	Three aspect incandescent / 200MM Mast Arm	66.0
28/8	Four aspect incandescent / 200MM Street Level	98.0
28/9	Four aspect incandescent / 300MM Mast Arm	211.0
28/10	Four aspect incandescent / 300MM Street Level	211.0
28/11	Four aspect incandescent / 200MM Mast Arm	99.0
29/8	Walk/D-Walk / 200MM Street Level	66.0
30/8	Symbolic pedestrian incandescent / 200MM Street Level	66.0
44/5	Square / With audio tactile	8.0
46/5	Oval / With audio tactile	8.0
46/12	Oval / With tactile only	8.0
55/1	Proximitor 402 / Shelf Mounted	8.0
55/2	Proximitor 402 / Post mounted with encoder	8.0
55/3	Proximitor 402 / Post mounted without encoder	8.0
56/1	Proximitor 404 / Shelf Mounted	8.0
56/2	Proximitor 404 / Post mounted with encoder	8.0
56/3	Proximitor 404 / Post mounted without encoder	8.0
58/4	Sarasota-15PT / Shelf Mounted	8.0
58/2	Sarasota-15PT / Post mounted with encoder	8.0
58/3	Sarasota-15PT / Post mounted without encoder	8.0
59/1	Electromatic ST10H2 / Shelf Mounted	8.0
59/2	Electromatic ST10H2 / Post mounted with encoder	8.0
59/3	Electromatic ST10H2 / Post mounted without encoder	8.0
60/1	Electromatic ST10H4 / Shelf Mounted	8.0
60/2	Electromatic ST10H4 / Post mounted with encoder	8.0
60/3	Electromatic ST10H4 / Post mounted without encoder	8.0
64/8	Single aspect Q.H. / 200MM Street Level	<del>20.0</del> 19.8
64/9	Single aspect Q.H. / 300MM Mast Arm	<del>29.0</del> 28.2
64/10	Single aspect Q.H. / 300MM Street Level	<del>29.0</del> 28.2
64/11	Single aspect Q.H. / 200MM Mast Arm	<del>20.0</del> 19.8
66/3	AWA-LDQ3 / Post mounted without encoder	8.0
68/1	Microwave / Shelf Mounted	8.0
68/3	Microwave / Post mounted without encoder	8.0

ID	DEVICE TYPE	LOAD (W)
70/8	Two aspect Q.H. / 200MM Street Level	<del>41.0</del> <u>39.5</u>
70/9	Two aspect Q.H. / 300MM Mast Arm	<del>57.0</del> <u>56.4</u>
70/10	Two aspect Q.H. / 300MM Street Level	<del>57.0</del> <u>56.4</u>
70/11	Two aspect Q.H. / 200MM Mast Arm	<del>41.0</del> <u>39.5</u>
73/8	Three aspect Q.H. / 200MM Street Level	<del>44.0</del> <u>39.5</u>
73/9	Three aspect Q.H. / 300MM Mast Arm	<del>57.0</del> <u>56.4</u>
73/10	Three aspect Q.H. / 300MM Street Level	<del>57.0</del> <u>56.4</u>
73/11	Three aspect Q.H. / 200MM Mast Arm	<del>44.0</del> <u>39.5</u>
76/0	Nema 2 channel	8.0
77/0	Nema 4 channel	8.0
78/0	Nema 8 channel	8.0
80/0	PSC NA4	28.0
81/0	PSC NA6	28.0
90/0	PSC2 NC12/16	61.0
<del>91/0</del>	<del>Philips int. PD204</del>	<del>8.0</del>
<del>92/0</del>	<del>Philips int. PD208</del>	<del>8.0</del>
<del>93/0</del>	<del>Philips int. PD212</del>	<del>8.0</del>
94/8	Four aspect Q.H. / 200MM Street Level	<del>61.0</del> <u>59.2</u>
94/9	Four aspect Q.H. / 300MM Mast Arm	<del>85.0</del> <u>84.6</u>
94/10	Four aspect Q.H. / 300MM Street Level	<del>85.0</del> <u>84.6</u>
94/11	Four aspect Q.H. / 200MM Mast Arm	<del>61.0</del> <u>59.2</u>
<del>95/0</del>	<del>Philips int. PD216</del>	<del>8.0</del>
97/8	<del>Symbolic</del> Two aspect pedestrian Q.H. / 200MM Street Level	<del>44.0</del> <u>39.5</u>
127/0	PSC3 NC12/16	61.0
136/0	Red Light Camera Loop	41.0
137/0	CCTV Camera	28.0
158/0	Traffic signal controller QTC ATC3264/1A (QTC)	34.9
165/0	CCTV Model PTZ	8.5
<del>166/0</del>	<del>Redflex NK6 Camera System &amp; Alstrom Loop Reader LRC3774</del>	<del>67.0</del>
<del>167/0</del>	<del>Redflex Flash Enclosure</del>	<del>6.1</del>
178/8	Single aspect LED/ Full / 200MM Street Level	<del>74.0</del>
178/9	Single aspect LED/ Full / 300MM Mast Arm	<del>9.76.0</del>
178/10	Single aspect LED/ Full / 300MM Street Level	<del>9.76.0</del>
178/11	Single aspect LED/ Full / 200MM Mast Arm	<del>74.0</del>
179/8	Single aspect LED/ Arrow / 200MM Street Level	<del>4.63.3</del>
179/9	Single aspect LED/ Arrow / 300MM Mast Arm	<del>63.9</del>
179/10	Single aspect LED/ Arrow / 300MM Street Level	<del>63.9</del>
179/11	Single aspect LED/ Arrow / 200MM Mast Arm	<del>4.63.3</del>
180/8	Single aspect LED/ <del>Other</del> Bus / 200MM Street Level	<del>4.64.0</del>
180/9	Single aspect LED/ <del>Other</del> Bus / 300MM Mast Arm	<del>63.9</del>
180/10	Single aspect LED/ <del>Other</del> Bus / 300MM Street Level	<del>63.9</del>
180/11	Single aspect LED/ <del>Other</del> Bus / 200MM Mast Arm	<del>4.64.0</del>
181/8	Two aspect LED/ Full / 200MM Street Level	<del>42.27.5</del>
181/9	Two aspect LED/ Full / 300MM Mast Arm	<del>19.211.3</del>
181/10	Two aspect LED/ Full / 300MM Street Level	<del>19.211.3</del>
181/11	Two aspect LED/ Full / 200MM Mast Arm	<del>42.27.5</del>
182/8	Two aspect LED/ Arrow / 200MM Street Level	<del>8.36.1</del>
182/9	Two aspect LED/ Arrow / 300MM Mast Arm	<del>10.37.1</del>
182/10	Two aspect LED/ Arrow / 300MM Street Level	<del>10.37.1</del>
182/11	Two aspect LED/ Arrow / 200MM Mast Arm	<del>8.36.1</del>

ID	DEVICE TYPE	LOAD (W)
183/8	Two aspect LED/ Other / 200MM Street Level	<del>8.36.1</del>
183/9	Two aspect LED/ Other / 300MM Mast Arm	<del>40.37.1</del>
183/10	Two aspect LED/ Other / 300MM Street Level	<del>40.37.1</del>
183/11	Two aspect LED/ Other / 200MM Mast Arm	<del>8.36.1</del>
184/8	Three aspect LED/ Full / 200MM Street Level	<del>42.27.9</del>
184/9	Three aspect LED/ Full / 300MM Mast Arm	<del>49.712.4</del>
184/10	Three aspect LED/ Full / 300MM Street Level	<del>49.712.4</del>
184/11	Three aspect LED/ Full / 200MM Mast Arm	<del>42.27.9</del>
185/8	Three aspect LED/ Arrow / 200MM Street Level	<del>8.46.2</del>
185/9	Three aspect LED/ Arrow / 300MM Mast Arm	<del>407.0</del>
185/10	Three aspect LED/ Arrow / 300MM Street Level	<del>407.0</del>
185/11	Three aspect LED/ Arrow / 200MM Mast Arm	<del>8.46.2</del>
186/8	Three aspect LED/ Other / 200MM Street Level	<del>8.46.2</del>
186/9	Three aspect LED/ Other / 300MM Mast Arm	<del>407.0</del>
186/10	Three aspect LED/ Other / 300MM Street Level	<del>407.0</del>
186/11	Three aspect LED/ Other / 200MM Mast Arm	<del>8.46.2</del>
187/8	Four aspect LED/ Full / 200MM Street Level	<del>49.211.9</del>
187/9	Four aspect LED/ Full / 300MM Mast Arm	<del>29.418.4</del>
187/10	Four aspect LED/ Full / 300MM Street Level	<del>29.418.4</del>
187/11	Four aspect LED/ Full / 200MM Mast Arm	<del>49.211.9</del>
190/8	Two aspect LED/ Ped / 200MM Street Level	<del>8.66.2</del>
193/0	Traffic signal controller Tyco EC1 Series 60 (Eclipse) (August 2008) <sup>1</sup>	41.5
208/0	Road Safety Camera – Redflex (February 2011) <sup>1</sup>	191.7
209/0	Road Safety Camera – DCD (February 2011) <sup>1</sup>	159.3
210/0	Road Safety Camera – Sensis (February 2011) <sup>1</sup>	433.5
211/0	Road Safety Camera – Aspect (February 2011) <sup>1</sup>	183.6
212/0	Road Safety Camera – Tess (February 2011) <sup>1</sup>	526.2
213/0	Road Safety Camera Security System (March 2012) <sup>1</sup>	64.4
214/0	Road Safety Camera Tirtl System (March 2012) <sup>1</sup>	7.1
<u>217/8</u>	<u>Two aspect QH/Bicycle 200MM Street Level</u>	<u>39.5</u>
<u>219/8</u>	<u>Three aspect QH/Bicycle 200MM Street Level</u>	<u>39.5</u>
<u>220/8</u>	<u>Three aspect QH/Bus 200MM Street Level</u>	<u>39.5</u>
<u>233/0</u>	<u>ATC Controller</u>	<u>69.4</u>
<u>237/8</u>	<u>Single aspect LED/Other Graphics/ 200MM Street Level</u>	<u>3.3</u>
<u>237/10</u>	<u>Single aspect LED/Other Graphics/ 300MM Street Level</u>	<u>3.9</u>
<u>237/11</u>	<u>Single aspect LED/Other Graphics/ 200MM Mast Arm</u>	<u>3.3</u>
<u>238/8</u>	<u>Two aspect LED/Other Graphics/ 200MM Street Level</u>	<u>6.1</u>
<u>238/9</u>	<u>Two aspect LED/Other Graphics/ 300MM Mast Arm</u>	<u>7.1</u>
<u>238/10</u>	<u>Two aspect LED/Other Graphics/ 300MM Street Level</u>	<u>7.1</u>
<u>238/11</u>	<u>Two aspect LED/Other Graphics/ 200MM Mast Arm</u>	<u>6.1</u>
<u>239/8</u>	<u>Three aspect LED/Other Graphics/ 200MM Street Level</u>	<u>6.2</u>
<u>239/9</u>	<u>Three aspect LED/Other Graphics/ 300MM Mast Arm</u>	<u>7.0</u>
<u>239/10</u>	<u>Three aspect LED/Other Graphics/ 300MM Street Level</u>	<u>7.0</u>
<u>239/11</u>	<u>Three aspect LED/Other Graphics/ 200MM Mast Arm</u>	<u>6.2</u>
<u>252/0</u>	<u>Alpha UPS</u>	<u>81.9</u>
<u>256/0</u>	<u>Eclipse EB2 (SML) Controller</u>	<u>41.5</u>
<u>257/0</u>	<u>School Zone Flashing Signs</u>	<u>1.5</u>

<sup>1</sup> Submitted in NSW – agreed load value for use in all jurisdictions where traffic signals are classified as market loads