

IPWEA SLSC Model LED Public Lighting Specification - Consolidated Comment Review

29 November 2019

This is a review of the respondent commentary, carried out by Strategic Lighting Partners Ltd, with proposed editorial actions.

The call for comment closed on 8 November 2019: This resulted in comment on 76 items from 9 respondents:

- Light Source Solutions LSS (Ian Killick)
- Signify (previously Philips Lighting) (Jacek Lipiec)
- Orangetek (Dean McErlean)
- Broadspectrum (Alvaro Morillo)
- City of Ipswich (Filip Stojic)
- City of Sydney (Malik Huda)
- Lighting Council New Zealand LCNZ (Chris Byrne)
- IESANZ Illuminating Engineering Society of Australia and New Zealand (Scott Forbes)
- DoEE Department of the Environment and Energy (Karen Arthur)

No.	Respondent	Section	Type	Issue and Comment	Respondent Recommendation	SLP Action
1	Light Source Solutions LSS	Preliminary	General	<p>One of the biggest challenge with this specification is the knowledge of the users.</p> <p>Hence, given their limited knowledge, a statement such as could, is read as should, and they specify everything to the maximum available without appreciation of the commercial implications of technical decisions.</p>		<p>Noted.</p> <p>This is an important issue. The terms “could, should and shall”, have precise and particular meanings in formal standards and regulatory documents. Model Specification documents need to be very careful about the selection such wording, but it is vital to realise that a Model Specification provides recommendations for established requirements and provides options for newer or higher spec parameters. The options are not recommendations.</p> <p>The parties that customise the document to suit their own purposes make the choice to include or not to include.</p>

						Action – Add a short paragraph to section 1.1 Purpose and Target Audience, to further strengthen this important distinction.
2	Illuminating Engineering Society of Australia and New Zealand IESANZ	Preliminary	General	Thank you for sending through this document for comment, and thank you too for all the effort that has gone into it so far. In general, it provides the basis for comprehensive specification of products, and gives some hope that the quality of products supplied will be improved.		Noted. Action – None required.
3	Lighting Council New Zealand (LCNZ)	Preliminary	General	Lighting Council New Zealand supports the aims and intentions of the IPWEA Street Lighting and Smart Controls Programme SLSC LED Model Specification update. The document is appropriately progressive to assist with the procurement and adoption of modern digital lighting technologies and takes positive measures to align equipment specifications with internationally based technical standards and best practices.		Noted. Action – None required.
4	Orangetek	Preliminary	General	Thanks for the opportunity to comment, and the general feel/update to this document seems to make sense and looks to be appropriate for general guidelines. We didn't have any meaningful observations for the majority of these changes, but I had one specific area that caught my attention, and comments are below: (See Comment No.27 below) Please see this as a polite but constructive contribution / comments.		Noted. Action – See comment No. 27

5	LSS	Section 1 Introduction	General	AS/NZS 1158 Part 3.1 and Part 1.1 updates	Important to update specification for AS/NZS 1158 Part 3.1 and Part 1.1 updates, but I am lost when Standards Australia are going to finally get these updates released.	Noted. This is already accommodated in the MS draft. Standards Australia have stated that 20 November 2019 is the final date for AS/NZS 1158.3.1 committee debate. SA editorial work to follow and publication thereafter. Part 1.1 update will follow. Action – None required.
6	DoEE	Section 1 Introduction 1.3	General	1.3 Why good public lighting design and smart controls are important Current text - Specialist technical and ecological advice is recommended on such matters, and recent IPWEA SLSC Briefings provide overview guidance.	Have IPWEA developed guidance for wildlife? There isn't guidance for wildlife on the website	Accept. Action – Delete this reference if the SLSC briefing is not posted to SLSC website prior to release of this MS.
7	DoEE	Section 1 Introduction 1.3	General	1.3 Why good public lighting design and smart controls are important	Add text to start of last paragraph - "These lighting requirements will need to be identified as part of the project description."	Accept. Action – Add text as stated.
8	DoEE	Section 1 Introduction 1.3	General	1.3 Why good public lighting design and smart controls are important	Depending on when this is being finalised, this section could reference the Department of the Environment and Energy's Light Pollution Guidelines for Wildlife (Due for finalisation by the end of 2019).	Accept. Action – Add to the list in Section 3.1 as an optional reference document.
9	DoEE	Section 1 Introduction 1.3	General	1.3 Why good public lighting design and smart controls are important Current text - Specialist technical and ecological advice is required on such matters, and recent IPWEA SLSC Briefings provide overview guidance	Edit text - Remove required add recommended.	Accept. Action – Edit text. Remove required add recommended.

10	DoEE	Section 2.2 Project Description	General	Section 2.2 Project Description.	Suggest adding a paragraph for additional considerations for wildlife.	<p>Reject.</p> <p>Scope creep is an issue. This project description Section is a brief and quantitative summary of the equipment types and quantities for procurement.</p> <p>Another part (Section 1.3 - Why good public lighting design and smart controls are important) contains information on wildlife considerations. Note that this document is a Model Specification for procurement and not a holistic guidance document on good lighting practice</p> <p>Action – None required.</p>
11	DoEE	Section 2.2 Project Description	General	Section 2.2 Project Description.	Given the tender assessment criteria includes the tenders ability to comply with environmental management guidelines, the project description should outline what constraints exist for the project in terms of environmental management.	<p>Accept.</p> <p>Action – See below</p>
12	DoEE	Section 2.2 Project Description	General	Section 2.2 Project Description.	Add paragraph at the end of Section 2.2. “The project description should also outline any environmental management considerations that will need to be taken into account in the project design. For example “Selection of luminaire, placement and shading should consider the presence of an important turtle nesting beach X meters from the project”.	<p>Accept with modifications.</p> <p>The example stated is too specific. Accept with modification to accommodate broader environmental parameters.</p> <p>Action – Add paragraph at the end of Section 2.2. “The project description should also outline environmental management considerations that will need to be accommodated. For example, “Lighting design, selection of luminaire type, location and light distribution shielding should</p>

						consider the presence of astronomical and ecologically sensitive areas”.
13	Broad spectrum	Section 2.3 Tender Response. Item 44		Tender Response Test certificates by independent laboratories	We would make it mandatory for vendors/tenderers to include test certificates (by independent laboratories) to ensure quality and compliance with current local/state/government standards instead of a yes/no response (Schedule A point 44). Before being able to be shortlisted tenderers should prove that their proposed materials comply with all the requirements indicated in the tender documents.	Reject. The MS process requests the supply of lab test certificates at tenderer shortlisting point, not before. This is to reduce the administrative burden for both tenderers and reviewers. Action – None required.
14	City of Sydney	Section 2.4 Tender Assessment Criteria. Item 6	General	Tender Assessment Criteria Selective Assessment Criteria 6. LED luminaire performance attributes and functionality as assessed against the project specification.	In my opinion this should form part of mandatory assessment criteria. This will help to select good quality products which meets lighting levels, glare, obtrusive lighting requirements.	Accept. Item 6 is a hard fact item rather than a judgement item. Action – Change position to the category above, Mandatory Assessment Criteria.
15	LSS	Section 3 Specification	Technical	Key concerns around DALI-2 and Zhaga: The D4i specification and DiiA add clarity to some of the earlier misunderstandings (which you correctly acknowledge in your comments), but does not adequately cover the combination of Zhaga with NEMA.	Cover the combination of Zhaga with NEMA.	Reject. This topic is already well covered in Smart Controls - Control device receptacle. Item 36 Part a) Hybrid Connectivity. (“Hybrid Connectivity - One NEMA/ANSI receptacle top mounted for CMS controls device, and one Zhaga Book 18 Edition 2.0 receptacle bottom mounted for non-lighting IoT device”. Etc) Action – None required.

16	LSS	Section 3 Specification	Technical	<p>Key concerns around DALI-2 and Zhaga:</p> <p>The specifications are new, meaning availability of compliant products limited, hence adding significantly to price and availability.</p>		<p>Noted.</p> <p>These are valid observations, but these items are only elective options and are not recommendations. These options are included to anticipate market demand in a fast moving industry and to allow scope for innovation for those parties that choose to do so.</p> <p>Action – None required.</p>
17	Signify	Section 3 Specification. Part 3.1	Technical	SA/SNZ Technical Specification 1158.6 Luminaires.	As this is a Technical Spec, it is not compulsory. It is also starting to become outdated with the new dual socket solutions. I don't believe this should be a compulsory spec, but an optional one.	<p>Accept.</p> <p>This SA/SNZ Technical Specification is not a core standards document, and it is now dated.</p> <p>Action – Change this document in the standards listing to an optional item (in green text).</p>
18	City of Sydney	Section 3 Specification. Part 3.1	Editorial	3.1 SA/SNZ Technical Specification 1158.6:2015 Lighting for roads and public spaces - Luminaires – Performance	<p>Add the following title:</p> <p>SA/SNZ Technical Specification 1158.6:2015/<u>Amdt 1</u>:2018 Lighting for roads and public spaces - Luminaires – Performance</p>	<p>Accept.</p> <p>Action - Add Amdt1 (Amendment 1). Cite as SA/SNZ Technical Specification 1158.6/Amdt 1</p>
19	Signify	Section 3 Specification. Part 3.1	Technical	3.1 IEC 62386 Series - Digital Addressable Lighting Interface (DALI).	Not All luminaires will require a DALI driver. This shouldn't be a requirement but Optional – maybe highlighted in Green	<p>Accept.</p> <p>This item is optional in the MS. Thus, the standard should be listed likewise.</p> <p>Action – Change this document in the standards listing to an optional item (in green text).</p>

20	Signify	Section 3 Specification. Part 3.1	Technical	3.1 ANSI C136.2 American National Standard for Roadway and Area Lighting Equipment-Dielectric Withstand and Electrical Transient Immunity Requirements	American Standard – May not be readily available by EU or Non North American suppliers. Should it be a requirement?	<p>Reject.</p> <p>Compliance with both IEC and ANSI standards is a Model Specification recommendation.</p> <p>This Model Specification requires both IEC and ANSI standards input on technical parameters. The ANSI standard specifies the immunity values and the IEC standard specifies the tolerated number of electrical incidents.</p> <p>Action – None required</p>
21	City of Sydney	Section 3 Specification. Part 3.1	Editorial	<p>3.1 Associated Standards and Specifications</p> <p>(This City of Sydney comment applies to all of the Section 3 cited standards and specifications)</p>	Recommend to add year of current publication.	<p>Reject.</p> <p>It is stated in the section introduction that - “... the following latest published versions of standards and specifications except where specific exemptions are noted.”</p> <p>It is IEC, ISO, SA, SNZ policy to publish document references, without the date of publication which is the policy followed by this document. This is to future-proof publications that cite reference standards, which would otherwise become almost immediately obsolete. Additionally, this approach this avoids liability for citing an outdated standard.</p> <p>Action – SLP to strengthen the comment on undated references in line with IEC et al practice.</p>

22	City of Sydney	Section 3 Specification. Part 3.1	Technical	3.1 AS 3100:2009 – Approval and test specification – General requirements for electrical equipment.	Add the following standard: AS 3100:2009 – Approval and test specification – General requirements for electrical equipment.	Reject. This is an installation standard and not product standard. It is not cited in the procurement specification details Action – None required.
23	City of Sydney	Section 3 Specification. Part 3.1	Technical	IESNA LM-79, LM-80 and TM-21	Add the following standard references: IESNA LM-84, LM-28	Accept and Reject Action - Accept the addition of IESNA LM-84. “IES LM-84-14 Approved Method: Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires”. Action – Reject the addition of IESNA LM-28. “IES LM-28-12 - IES Guide For The Selection, Care, And Use Of Electrical Instruments In The Photometric Laboratory”. This is a laboratory practice standard and is beyond the scope of this Model Specification. Is this a City of Sydney typo and should this mean TM-28? Action – Add TM-28 “IES TM-28-14 Projecting Long-Term Luminous Flux Maintenance Of LED Lamps And Luminaires”
24	City of Sydney	Section 3 Specification. Part 3.1	Technical	IEC 61347 - Particular requirements for d.c. or a.c. supplied electronic control gear for LED modules	Add the following standard: IEC 61347 - Particular requirements for d.c. or a.c. supplied electronic control gear for LED modules	Reject. Not necessary. Compliance with this safety standard is already incorporated as part of AU and NZ mandatory luminaire (and component) standards compliance requirements. Action – None required.

25	City of Sydney	Section 3 Specification. Part 3.1	Technical	IEC 61547 – Equipment for general lighting purposes – EMC immunity requirements.	Add the following standard: IEC 61547 – Equipment for general lighting purposes – EMC immunity requirements.	Reject. Not necessary. Compliance with this safety standard is already incorporated as part of AU and NZ mandatory luminaire (and component) standards compliance requirements. Action – None required.
26	City of Sydney	Section 3 Specification. Part 3.1	Technical	Optional: Distribution Network Service Provider requirements (if applicable)	Would you like to include Metrology procedure: Part B – NEM load table for unmetered devices.	Reject. This is an element related to the regulatory configuration and design of the lighting scheme and is outside the scope of this Model Specification.
27	Orangetek	Section 3 Specification. Part 3.1	Technical	3.1 Associated Standards and Specifications <i>D4i Specification - Digital Illumination Interface Alliance (DiiA)</i> This seems appropriate with future technologies being suggested/released. It should be noted that there are no current Driver manufacturers with this capability as of today (as far as we have investigated). When this specification gets released, this might have changed or simply be in the transition of changing. This then creates an expectation with clients/councils that this is already tried and tested technology that is available... (“Otherwise it wouldn’t be in the	I think it should be highlighted that this should only be requested in a specification when the technology is actually available and that this is still a trend yet to materialise. Luminaire suppliers get pushed towards certain Driver suppliers as per a specification, but who holds the risk when hardware doesn’t deliver? We have seen many promises, but been let down, because the market demands a solution that isn’t readily available. Its good for progress and its right to request future developments, but I wonder if its right to be a guideline before its ready.	Noted. The D4i Specification – from the Digital Illumination Interface Alliance (DiiA) is listed as optional, not a recommendation. A tranche of the early developed DiiA D4i specifications are currently going through the process of adoption as IEC standards, in the DALI series IEC 62386. Publication due Q4 2019. In Q1 2020 these it is expected by the Standards Australia EL-041 Committee will be rubber stamped as AS/NZS standards full text adoptions. Action – Add text in Section 1.4 Document Guidance to reinforce the caveats and necessary balance required between potential new technologies and available new technologies. Further noting that these are not recommendations but are options which

				<p>Specification guidelines”).</p> <p>Our concern is that this becomes a focal point making luminaire suppliers commit to certain requirements before even having the opportunity to have these systems running for any extended period of time.</p> <p>Effectively Suppliers are directed towards specific Driver solutions (whoever says they are ready) and simply take their word and are also expected to bear the risk if it simply doesn't work... such as interference of sensor ready devices.</p> <p>We have recently noticed that some of these demands push before its available and then component suppliers offer a rushed solution – often with teething problems, to try steal the initial market share.</p>	<p>Maybe it's a suggestion to continue towards the development of D4i devices, possibly looking at the suggested timelines until this becomes available.</p>	<p>may be considered when there is a range of suppliers.</p>
28	Signify	Section 3 Specification. Part 3.2, Table 2a and 2b, Item 1	Technical	<p>AS/NZS 1158 Design Subcategory.</p> <p>“light level headroom”</p>	<p>This should have a definition. ie, suggest either Lux levels or other criteria as per the Standard.</p>	<p>Accept.</p> <p>The term “light level headroom” is indeed not defined or sufficiently self-explanatory, and is not correct for all cases of adaptive lighting application.</p> <p>The term “light level” should be “luminaire light output” or more technically correctly “luminous flux” measured in Lumens, (Lm). However, this term is not in popular usage in procurement, so the term “lighting” is more suitable to use in these circumstances. The</p>

					<p>term “headroom” is better described as “reserve capacity”. Thus, the term “light level headroom” will be replaced by “lighting reserve capacity”.</p> <p>For procurement purposes “lighting reserve capacity” is most conveniently expressed as a % above the lumens required to achieve the minimum lighting design compliance for the selected “normal” AS/NZS 1158 road subcategory.</p> <p>Action – Replacement text as below: (Optional)</p> <p>If CMS controls are required for the project state: <i>For Subcategory P Application: Respondents shall design the AS/NZS 1158 lighting scenario application with a lighting reserve capacity above the lumens required to deliver the minimum compliant AS/NZS 1158 average horizontal illuminance values. The respondent shall indicate the % of lighting reserve capacity achievable with the nominated luminaire.</i></p> <p><i>(Note: The lighting reserve capacity % value acceptable is a professional judgement decision for the appropriate Local Government decisionmakers, and will vary according to the specific application circumstances.)</i></p> <p>(and similar treatment for the Cat V luminance application)</p>
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29	Sylvania Lighting	Section 3 Specification. Part 3.2, Table 2a and 2b Item 1.	Technical	<p>1. AS/NZS 1158 Design Subcategory.</p> <p>Why “light level headroom” of [X] or [Y]? We believe the purpose of this document, in conjunction with AS/NZS 1158 series is to provide guidance. Suggesting an alternative value of say 20% provides ambiguity to the user. Moreover, the fact that you typically need a 50% change in the illuminance or luminance level to provide an appreciable difference.</p>	<p>In the event the installation activity levels vary, the recommendation should be to nominate two “lighting subcategories” from AS/NZS1158 and the ability to switch as required.</p>	<p>Accept and Reject.</p> <p>Accept the comment regarding the suitability of guidance suggestions regarding the lighting reserve capacity % values as they will vary according to specific circumstances. Action – Modify text as per item 28 above. This deletes making suggestions of the lighting reserve capacity values.</p> <p>Reject the comment on the suitability of the use of lumen % to define the lighting reserve capacity. There are multiple reasons for the inclusion of the clause about lighting reserve capacity. It is not limited to the achievement of a higher specific AS/NZS 1158 subcategory requirement.</p> <p>Typical reasons are:</p> <ol style="list-style-type: none"> 1. To facilitate the use of fewer luminaire physical SKU’s (Stock Keeping Units) for procurement economics and operational management simplicity. This could mean procuring higher lumen capacity luminaires than the minimum required for baseline operation (defined by AS/NZS 1158 subcategory), and to use the CMS controls to trim down to optimise exactly the lumens required on a semi-permanent basis (and thus deliver the required on-road light levels according to the AS/NZS 1158 subcategory).
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						<p>2. To allow for temporarily adapted (increased) light levels for safety and amenity in the case of accidents, incidents, and special public events (e.g. for traffic management on roads around festivals, concert venues, sports stadia etc).</p> <p>These adaptive techniques are now being employed by some Local Government CMS controls users in Australia and New Zealand.</p> <p>Action – None required.</p>
30	Signify	Section 3 Specification. Part 3.2, Table 2a and 2b, Item 1	Technical	AS/NZS 1158 Design Subcategory. "light level headroom"	Lighting Designers will ask for specific requirements to comply.	<p>Reject.</p> <p>See comment in No.28 and 29 above.</p> <p>This is only an option. There are no compliance value limits to meet.</p> <p>This is an application specific issue requiring professional judgement according to site/region traffic and safety circumstances.</p> <p>See added text: <i>Note: The lighting reserve capacity % value acceptable is a professional judgement decision for the appropriate Local Government decisionmakers, and will vary according to the specific application circumstances.)</i></p>
31	City of Sydney	Section 3 Specification. Part 3.2, Table 2a Item 6	Technical	6. Light Loss Factor (LLF)	How about pollution factor? which may have some impact on the illuminance levels.	<p>Reject.</p> <p>This comment is suggesting that air pollution may be a cause of reduced light levels being delivered to the road surface.</p>

						<p>The recommended action is unstated.</p> <p>This is a lighting design standards issue (AS/NZS 1158 Part 3.1 and Part 1.1) and is beyond the scope of this procurement Model Specification. However, it does raise a valid point about a possible cause of lighting service degradation in highly air polluted areas.</p> <p>Action – None required</p>
32	Signify	Section 3 Specification. Part 3.2, Table 2a, Item 6	Technical	6. Light Loss Factor (LLF). Comment from our Lighting designers is that a cleaning frequency is more likely to be 3 years.	Should this be changed to allow tenderer to supply their own cleaning frequency? Maybe change to “x” years?	<p>Reject.</p> <p>This is already accommodated as an option. “Or [Select a User-defined system design light loss factor as per AS/NZS 1158.3.1 or AS/NZS 1158.1.1].”</p> <p>Action – None required.</p>
33	City of Sydney	Section 3 Specification. Part 3.2, Table 2a, Item 7	Technical	7. Tilt Angle	Ideal situation is to have “0” degrees tilt. It should be limited to a maximum 5 degrees. Ausgrid currently uses 0 degrees for residential lighting P4/P5 category.	<p>Partially accept.</p> <p>Action – Change text to recommend a maximum tilt angle of 5 degrees for new installations, and a maximum of 10 degrees for retrofit installations.</p>
34	City of Sydney	Section 3 Specification. Part 3.2, Table 2a, Item 8	Technical	8. Luminaire Discomfort Glare Index State the installed luminaire Discomfort Glare Index (DGI) calculated for Discomfort Glare Class DG 2.	Need to also check the maximum intensity between 90 and 70 degrees.	<p>Reject.</p> <p>In AS/NZS 1158.3.1 update (2019 – draft) the 80 to 90 degree zone is glare limited. This is adequate for procurement purposes.</p> <p>Action – None required.</p>
35	Broadspectrum	Section 4 Returnable Schedule A. Item 1	Technical	This requirement is heavily dependent on the geometry of the area to illuminate and the streetlight	To be able to compare different products several standard layouts (of real streets within the area that is being upgraded) should be provided, and	Already included.

				arrangement (single sided, opposite, etc.).	worse case scenarios should be analysed (wide roads, low mounting heights, etc.). e.g. Layout 1 : 1 lane, 4 m road reserve, single sided, 8 m mounting height. (15 other examples provided)	Agree. That is indeed the requirement. It is intended that MS customisation will include ... "several standard layouts (of real streets within the area that is being upgraded) should be provided" Action - None required
36	City of Sydney	Section 4 Returnable Schedule A, Item 2.	General	2. Name, organisation and qualifications of lighting designer who undertook design calculations	A qualified practising lighting designer with MIES or Registered Lighting Practitioner (RLP) credentials.	Accept Action – Insert the text "Signed off by a qualified lighting designer with MIESANZ (or equivalent) as a minimum credential.
37	City of Sydney	Section 4 Returnable Schedules A, Item 2.	General	2. Details of design package used (eg Perfect Lite, AGi32, Lighting Reality).	Would recommend to stick with AGi32 and Perfectlite. That's the most commonly used programs.	Reject. The cited software packages are only examples. There are newer lighting design packages available that have extended functionality and these should not be precluded. Action – None required.
38	City of Sydney	Section 4 Returnable Schedule A, Item 4.	Technical	4. Total Wattage of LED Module and Power Supply	Probably request for Lamp Circuit Power (LCP) report to verify the power of a luminaire.	Reject. This parameter is already included in the required LM79 test lab report. Action – None required.

39	City of Sydney	Section 4 Returnable Schedule A, Item 6.	Technical	6. Luminaire Efficacy (As per LM-79) including Power Supply	Luminaire System Efficacy (As per LM-79) inc Power Supply	Reject. This is already stated as the luminaire efficacy value is to be inclusive of the Power Supply. Action – None required.
40	City of Sydney	Section 4 Returnable Schedule A, Item 11.	Technical	11. Rated Life of LED Module Hrs @L70	L70 @50,000 hours is expected?	Reject. Question - is L70 @50,000 hours expected? No. It is not appropriate for a procurement specification to stipulate a figure as this may inhibit innovation and progress. Action – None required.
41	City of Sydney	Section 4 Returnable Schedule A, Item 11.	Technical	11. Rated Life of LED Module Hrs @L70	Should we ask for L90?	Reject. The specification requests the L70 life figure, as this is the internationally accepted lumen depreciation basis point for life comparison. Action – None required.
42	City of Sydney	Section 4 Returnable Schedule A, Item 13.	Technical	13. Colour Rendering Index (CRI) 70+ Ra	Should ask for 75+ Ra ?	Reject. Why? To what advantage? This would be unnecessarily restrictive on supply options for little actual gain. Action – None required.
43	City of Ipswich	Section 4 Returnable Schedule A, Item 15	Technical	15. Spectral Power in the the 430-470nm (blue light) Spectral Power Distribution (SPD) band	It would be good if there was a mandatory limit for SPD that would disqualify “harmful” lights.	Reject. The meaning of this Model Specification item has been misconstrued. The Model Specification simply requests numerical

						<p>information on the nature of the spectrum offered to allow broad assessment by a lighting design professional. It does not set limits nor attempts to define what are “harmful” aspects for application types concerned.</p> <p>What is a harmful luminaire? This is a complex and multifaceted topic with no clear-cut acceptable or not acceptable boundaries.</p> <p>Action – None required.</p>
44	City of Ipswich	Section 4 Returnable Schedule A, Item 15	Technical	15. Spectral Power in the the 430-470nm (blue light) Spectral Power Distribution (SPD) band	<p>Refer topic above.</p> <p>Perhaps IPWEA could champion this as it is not practical for individual Councils to analyse LM-79 and similar lab reports.</p>	<p>Accept.</p> <p>Action – Advise IPWEA management of of this possible lobbying angle.</p>
45	LSS	Section 4 Returnable Schedules. Item 15	Technical	15. Spectral Power in the the 430-470nm (blue light) Spectral Power Distribution (SPD) band	<p>I need to understand this better, but support a more sophisticated measure for potential blue light risk, beyond colour temperature.</p>	<p>Noted.</p> <p>Action – None required</p>
46	IESANZ	Section 4 Returnable Schedules. Item 15	Technical	<p>15. Spectral Power in the the 430-470nm (blue light) Spectral Power Distribution (SPD) band</p> <p>My only suggestion is that the specification of SPD limits may be premature.</p> <p>The DoEE draft document includes some contentious information which needs to be further qualified by research. In its response to the draft, IESANZ made that point and until it is clarified, IESANZ does not endorse that document in its current form.</p>		<p>Noted.</p> <p>It is not clear the what DoEE draft document is referred to (possibly wildlife protection?)</p> <p>Action – None required</p>

47	City of Sydney	Section 4 Returnable Schedule A, Item 17.	Technical	17. Power Supply (Driver) Brand, Type, Model	MTBF is required for drivers to quantify reliability.	Already included. MTBF is already included. See item 23. Action – None required.
48	City of Sydney	Section 4 Returnable Schedule A, Item 17.	Technical	17. Power Supply (Driver) Brand, Type, Model	Need to know the IP rating of the driver?	Already included. Power Supply IP rating is already included. See item 27 Action – None required.
49	City of Sydney	Section 4 Returnable Schedule A, Item 17.	Technical	17. Power Supply (Driver) Brand, Type, Model	Drivers shall be potted	Reject. This suggestion concerns the “how”, and not the outcome. It is not appropriate to dictate a manufacturing method in a Model Specification as this is prescriptive and may discourage innovation and/or be a barrier to alternative methods. Action – None required.
50	LSS	Section 4 Returnable Schedules. Item 19	Technical	19. Power Supply	If I understand it correctly, you have left DALI-2 out as an option and going from DALI to DALI-2 SR?	Reject. This is not a correct interpretation. DALI-2 is stated upfront as the prime recommendation. Action – None required.
51	LSS	Section 4 Returnable Schedules. Item 19	Technical	19. Power Supply	I believe DALI-2 or DALI-2 SR should be a recommended option.	Noted. Yes. DALI-2 is stated upfront as the prime recommendation. Action – None required.
52	LSS	Section 4 Returnable	Technical	19. Power Supply	I personally feel the 24V power supply, will not be the preferred method long	Noted

		Schedules. Item 19			term for sensors, but using DALI power enabling 2 way communication	Time will tell. This does not affect the MS text. Action – None required.
53	LSS	Section 4 Returnable Schedules. Item 19	Technica l	19. Power Supply	It is feasible to use DALI-2 driver and DALI power device for the Zhaga socket without the need to buy SR drivers.	Noted. Action – None required.
54	LSS	Section 4 Returnable Schedules. Item 19	Technica l	19. Power Supply	If a 7 Pin NEMA socket is included, then DC supply still available from pins 6 & 7.	Noted. Action – None required.
55	City of Sydney	Section 4 Returnable Schedule A, Item 20.	Technica l	20. Surge Protection In-luminaire Surge Protection Devices (SPD) rated at: 10 kV/5kA [most areas] or 20kV/10kA [Extreme risk areas e.g. Northern Australia]	Are we asking for Metal Oxide Varistors (MOV)	Not specifically. The Model Specification is technology agnostic and specifies outcomes rather than the means of delivering those outcomes. There are several types of surge protection technologies. Action – None required.
56	City of Sydney	Section 4 Returnable Schedule A, Item 20.	Technica l	20. Surge Protection In-luminaire Surge Protection Devices (SPD) rated at: 10 kV/5kA [most areas] or 20kV/10kA [Extreme risk areas e.g. Northern Australia]	Is surge protection to be a of minimum 320J?	Not specifically, as this value is cited elsewhere. The surge protection energy rating minimum requirements are included in SA/SNZ TS 1158.6 Technical Specification. Action – None required.
57	City of Sydney	Section 4 Returnable Schedule A, Item 20.	Technica l	20. Surge Protection In-luminaire Surge Protection Devices (SPD) rated at: 10 kV/5kA [most areas] or	Protection shall comply with IEC 61643 - 331 and ANSI C62.41.2? Value is 10kV or 20kV? Need to confirm	The respondent recommendation is unclear. The Model Specification recommendation for most areas is 10 kV/5kA, and 20kV/10kA for extreme risk areas.

				20kV/10kA [Extreme risk areas e.g. Northern Australia]		<p>(Note that 20kV/10kA protection is now readily available from a number of luminaire suppliers).</p> <p>Compliance with both IEC and ANSI standards is a MS recommendation. The MS requires both IEC and ANSI standards input on technical parameters. The ANSI standard specifies the immunity values and the IEC standard specifies the tolerated number of electrical incidents.</p> <p>Action – None required.</p>
58	LSS	Section 4 Returnable Schedules. Item 20.	Technical	20. Surge Protection	Specifications for 20KV/10KA becoming the norm	<p>Noted</p> <p>Action – None required.</p>
59	City of Sydney	Section 4 Returnable Schedule A, Item 26.	Technical	26. IP Rating – Gear Chamber IP24 minimum	<p>Recommendation - Control gear chamber should be IP66 rated as well and not IP24. Minimum IP65 rated. Need to lift the standards now.</p>	<p>Reject.</p> <p>The provision of an IP66 control gear chamber is not necessarily a superior option to IP24, as IP66 sealing can possibly trap moist air and dampness and facilitate internal condensation and corrosion.</p> <p>Action – None required.</p>
60	LSS	Section 4 Returnable Schedule A, Item 26	General	26. IP Rating – Gear Chamber IP24 minimum	Using an IP20 DALI-2 driver, in IP65 chamber puts a lot of responsibility and liability on contractors.	<p>Noted.</p> <p>Maintenance contractors will need to take reasonable care with Gear Chambers sealing gaskets.</p> <p>Action – None required.</p>

61	LSS	Section 4 Returnable Schedule A, Item 26	General	26. IP Rating – Gear Chamber IP24 minimum	Previous experience in Australia has shown this results in short driver life.	Noted. Higher maintenance contractor QA and service levels will be needed in this area, and in other areas. Action – None required.
62	LSS	Section 4 Returnable Schedule A, Item 26	General	26. IP Rating – Gear Chamber IP24 minimum	Eventually when IP66 DALI-2 drivers are readily available this is definitely the best way to proceed.	Noted. Action – None required.
63	LSS	Section 4 Returnable Schedule A, Item 26	General	26. IP Rating – Gear Chamber IP24 minimum	Most driver suppliers are focusing their DALI-2 product development on wattages suitable for indoor commercial/retail/industrial installations.	Noted. Action – None required.
64	LSS	Section 4 Returnable Schedule A, Item 26	General	26. IP Rating – Gear Chamber IP24 minimum	We will need to wait before credible DALI-2 IP66 drivers are readily available	Noted. Action – None required.
65	LSS	Section 4 Returnable Schedules. Item 26	Technical	If DALI-2 specified then IP65 must be specified for gear chamber. Apart from some limited options from Philips, all DALI 2 drivers currently below IP65.		Accept. Action – Add clarifying text – “Note: IP65 is the minimum requirement for either the Gear Chamber or the Power Supply. Non IP rated Power Supplies are suitable for installation if the control gear chamber is IP65 or greater.”
66	City of Sydney	Section 4 Returnable Schedule A, Item 27	Technical	27. IP Rating – Power Supply	Also, add luminaire IK rating	Already included, See Item 34. Action – None required.

67	Sylvania Lighting	Section 4 Returnable Schedule A, Item 27	Technical	27. IP Rating – Power Supply	For avoidance of doubt this should state that non IP rated drivers are suitable for installation if the control gear chamber is IP65 or greater.	Accept. Action – Add clarifying text – “Note: IP65 is the minimum requirement for either the Gear Chamber or the Power Supply. Non IP rated Power Supplies are suitable for installation if the control gear chamber is IP65 or greater.”
68	LSS	Section 4 Returnable Schedules. Item 27	Technical	Fully agree IP66 preferred, but DALI-2 drivers currently only IP20. (Might have found an IP68 DALI-2 driver, but not due to be released until after Light & Build next year.)		Accept. Action – Add clarifying text – “Note: IP65 is the minimum requirement for either the Gear Chamber or the Power Supply. Non IP rated Power Supplies are suitable for installation if the control gear chamber is IP65 or greater.”
69	LSS	Section 4 Returnable Schedules. Item 28	Technical	In Australia, 2 core oval cable seems to be the norm with different sizes and flexibility, hence significant challenges getting IP65 seal to protect drivers. Contractors are generally reluctant to use glands properly.		Noted. Action required. This is a supply and installation coordination issue. Highlighting the need to ensure harmonisation of components. Action – replace existing text with more specific clarification text - “To achieve the intended systemic IP performance the rubber bush housed within the plastic gland is to be dimensionally aligned with the shape of the electrical input supply cable selected i.e. round-form cable shall use a round-form bush and vice-versa for oval-form components.”

70	City of Sydney	Section 4 Returnable Schedule A, Item 35	General	Spigot Dimensions to be Accommodated (if an existing installation or columns have already selected for a new installation) [X] mm diameter [Y] mm length	It would be good to specify dimensions for retrofit installations.	Reject. Too many variations are possible and this is a localised site issue. Action – None required.
71	LSS	Section 4 Returnable Schedules. Item 36	Technical	SLSC have been strong supporters of NEMA 7 pin, hence the hybrid solution. However, I don't believe this is adequately covered by D4i, and re-wiring and/or reprogramming of drivers required if switching from NEMA control to Zhaga control.		Noted. This statement is not clear the hybrid receptacle application (NEMA+Zhaga18) is adequately covered in the MS doc. Action – None required.
72	Sylvania Lighting	Section 4 Returnable Schedules. Item 36	Technical	36. Smart Controls - Control device receptacle. We are unaware of any evidence that bottom mounting limits radio transmission performance.	This statement should be removed. Moreover, the bottom mounting provides an improved thermal environment which increases the life of these valuable electronic devices.	Accept. This comment was a "red box" drafting note only, for removal by the document customising party, and the current recommendation is for the receptacle to not be location specific: i.e. "Mounting of the receptacle on the top or the bottom of the luminaire is acceptable." However, it is better that the red box drafting note text be removed. Action – Remove the red box text.
73	Sylvania Lighting	Section 4 Returnable Schedules. Item 38		38. Luminaire packaging materials. This is onerous and will potentially add cost to the product. Typically, luminaires are supplied in cardboard cartons with plastic linings to ensure the luminaire is protected from water ingress during transport or storage, prior to installation.	This complete section should be optional only.	Accept. This clause was posed as a question to respondents to gauge reaction. Q- "What is reasonable for solid waste reduction requirements?" Action – Change this clause to optional.

74	City of Sydney	Section 4 Returnable Schedule A, Item 41	Technical	Does the luminaire have an existing approval for use under the [Choose as applicable: NSW Energy Savings Scheme / Victorian Energy Efficiency Target Scheme/Delete this item if not in NSW or VIC]?	Good to also include Smart Controls readiness. 7 contact receptacle.	Already included. The Model Specification already includes the NEMA 7 pin option. Action – None required.
75	Sylvania Lighting	Section 4 Returnable Schedule A, Item 44, No. 2.	Technical	No. 44/2. IESNA LM-7 test report - Typo	No. 44/2. IESNA LM-7 <u>9</u> test report	Accept. Action – Change to “IESNA LM-7 <u>9</u> test report”
76	LSS		General	<p>Do you have a view on LED replacement lamps? I believe it would be good to offer some guidance in an updated specification. One issue for consideration is do you keep ballast (where an option) or remove or bypass?</p> <p>Whilst the Lighting Council tried to encourage the full replacement to LED fixtures rather than LED tubes, all the majors, and many more unknown suppliers sold, and continue to sell very many LED replacement tubes. However, we did manage to educate many on the potential dangers.</p> <p>We have a direct replacement for the 80W Mercury Lamp. To date have only supplied small quantities for samples and trials but there seems to be growing interest in this solution from both Councils & DNSP's, especially for heritage or decorative fixtures. The replacement cost for LED fixtures is high and style equivalent difficult, so these</p>		<p>The IPWEA SLSC programme has not had any involvement with “corncob” type LED replacement lamps. Thus the MS does not cover this option.</p> <p>This would need to be handled as separate item. But this raises a good point, especially for expensive and long lasting heritage or decorative luminaires with lamp base-down diffuser optic application.</p> <p>Maybe this is a topic for an additional future SLSC Model Spec?</p>

				lamps are seen as a viable option.		
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