



ATLA S001 Interpretation Notice 211018

October 18th, 2021

The guiding principle in interpreting any ambiguities and discrepancies evident in ATLA S001 shall be in accordance with Section 1.1, Introduction, which reads:

In the event of any ambiguity or discrepancy with respect to the textual specification and the XML Schema in this document, the XML Schema shall take precedence.

In the event of any ambiguity or discrepancy with respect to the description of XML or XML Schema in this document, the W3C Recommendations shall take precedence.

Item 211018-001

Section 4.1, Version Element, states that:

The required `Version` element identifies the XML schema version. For the purpose of the data storage documents described in this TM, it is always “1.1”.

However, Section 4.7, XML Schema states:

```
<xs:element name="Version" type="xs:string" fixed="1.0"/>
```

and Annex A, Sample Luminous (Photometric) XML Document states:

```
<Version>1.0</Version>
```

What is the correction XML schema version number?

INTERPRETATION: Section 4.7, XML takes precedence, and so the XML schema version number is “1.0.”

Item 211018-002

Section 4.5, Emitter Element, states that:

Multiple `Emitter` elements are allowed as per `NumEmitter` element (**Section 4.3.3**).

where Section 3.6, emitter, defines an “emitter” as:

Any device that emits electromagnetic (“optical”) radiation within the wavelength range of 100 nm to 1,000 µm.

If a luminaire has (say) four emitters with the same luminous intensity and spectral power distributions, is `NumEmitter` 1 or four?

INTERPRETATION: Section 4.5, Emitter Element, specifies a complex XML element that includes the child element Section 4.5.1, Quantity Element, which states:

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The required `Quantity` element specifies the number of emitters.

As a first example, a linear fluorescent luminaire with two LED lamps would have one `Emitter` element to describe them, with a `Quantity` element of two.

As a second example, a LED floodlight with (say) 100 LED packages would have one `Emitter` element to describe them, with a `Quantity` element of one. (The underlying logic is that the LED packages are not individually removable and replaceable.)

As a third example, a direct-indirect luminaire with two LED strip lamps providing indirect illumination and three MR-11 LED spot lamps providing direct illumination would have a two `Emitter` elements. The first `Emitter` element with a `Quantity` element of two would describe the LED strip lamps, while the second `Emitter` element with a `Quantity` element of three would describe the LED spot lamps.

Item 211018-003

Section 4.5.2, Description Element, states:

The required `Description` element describes the emitter type.

Is there any guidance on how this element should be used?

RESPONSE: The `Description` element is an arbitrary XML string with (as per Section 4.7, XML Schema) UTF-8 encoding.

Item 211018-004

Section 4.5.14.1.5, Intensity Data Element, states:

The required `IntData` element specifies the luminous intensity data for the specified horizontal and vertical angles (in degrees). The element contains the value to be reported, and there are attributes for the horizontal and vertical angles at which this value occurs. For example:

```
<IntData h="0.0" v="65.0">44</IntData>
```

Multiple `IntData` elements are allowed.

and similarly for Section 4.5.15.3.4, 4.5.16.3.4, and 4.5.17.2.5.

Are there any limitations with regards to start and stop ranges, and angular intervals?

RESPONSE: The `IntData` elements have no limitations on their horizontal and vertical angles attributes. This was a deliberate decision made in order to support robotic gonioradiometers that can perform arbitrary angular measurements, such as for example the nodes of a geodesic sphere.

Item 211018-005

Section 4.5.17.1.3, Power Data Element, states:

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The required `PwrData` element specifies the emitter spectral data. The element contains the value to be reported (in watts per nanometer) and there is an attribute for the wavelength this value occurs at (in nanometers). For example:

```
<PwrData w="555.0">0.053</PwrData>
```

Multiple `PwrData` elements are allowed.

As a future request, can the value be optionally reported in micromoles per second per nanometer ($\mu\text{mol}\cdot\text{s}^{-1}\cdot\text{nm}^{-1}$) to represent spectral quantum distributions (SQDs)?

RESPONSE: Support for SQDs has been added to ATLA S001-A, but they can also be implemented using Section 4.6, Custom Data Element. For example:

```
<CustomData>
  <Name>DesignLights Consortium Horticultural</Name>
  <Identifier>21EC2020-3AEA-2069-A7DE-01002B30509D</Identifier>
  <EmitterSpectral>
    <NumberWavelength>90</NumberWavelength>
    <Multiplier>0.10</Multiplier>
    <Normalized>>false</Normalized>
    <SQD>>true</SQD>
    <PwrData w="350">5.132</PwrData>
    ...
    <PwrData w="800">0.264</PwrData>
  </EmitterSpectral>
</CustomData>
```

This custom data element replaces the `EmitterSpectral` data element (Section 4.5.17.1). It is still a valid ANSI/IES TM-33-18 file, but it introduces two new elements:

`Multiplier` is an optional multiplier that is applied to all `PwrData` values; and

`Normalized` is an optional Boolean flag (default `false`) that if `true` indicates that the `PwrData` values are normalized.

`SQD` is a required Boolean flag which if `true` indicates that the values are in micromoles per second per nanometer rather than watts per nanometer.

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