
Version 1.0
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Outdoor Luminair Controller: 3512



LONMARK®

Outdoor Luminair

Controller

Overview

This document describes the Functional Profile of a Outdoor Luminair Controller Object.

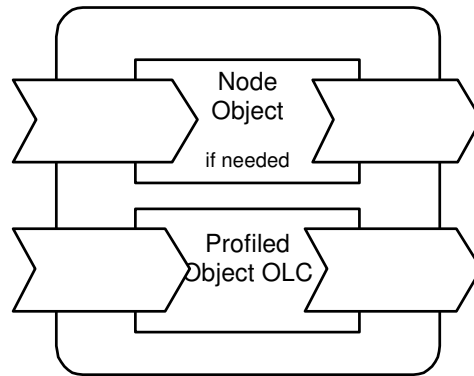


Figure 1 Node Concept

Example Usage

This Profile is mainly used for Street Lighting with Powerline.

Object Details

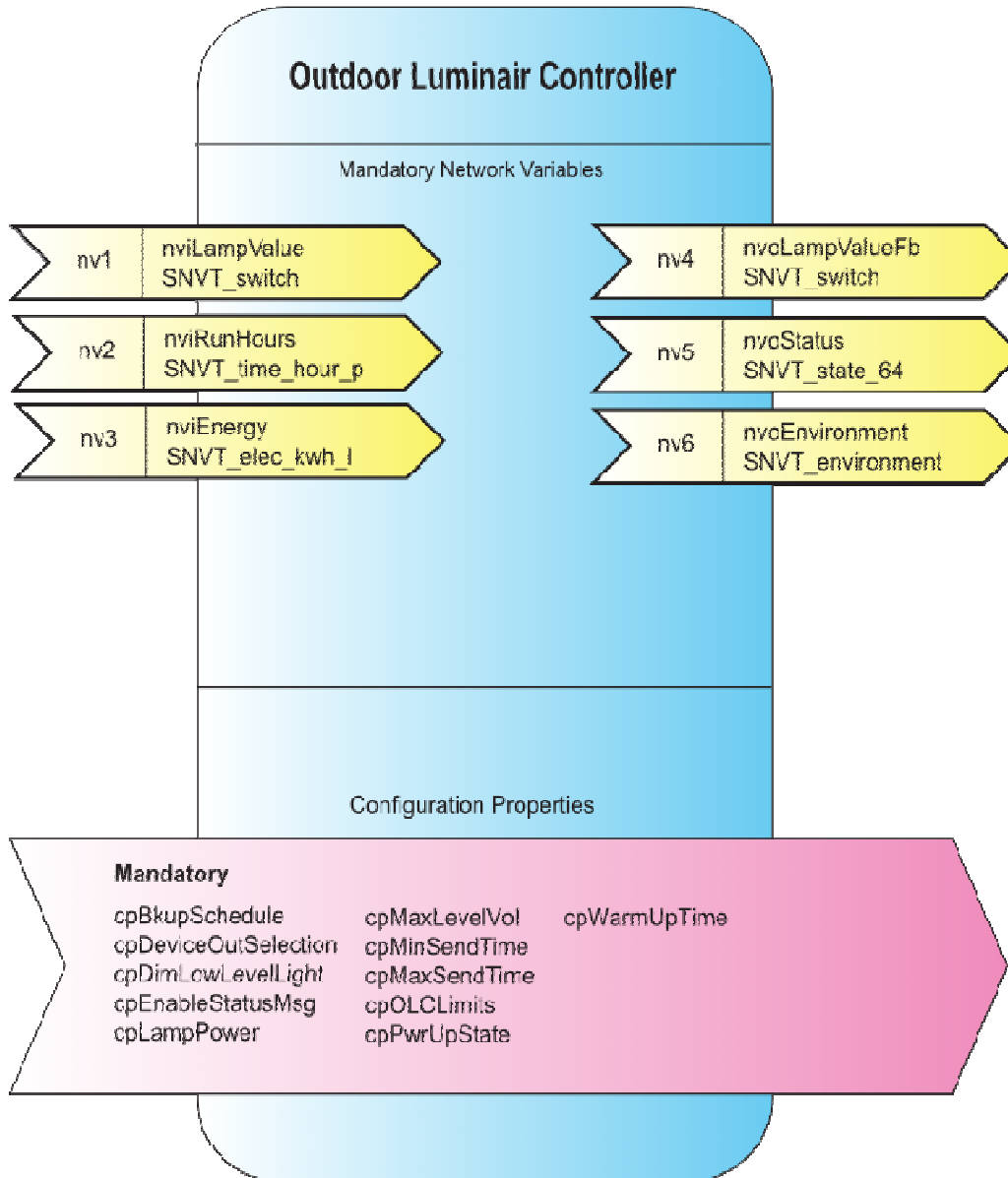


Figure 2 Object Details

Node Object

If the OLC Profile is implemented in combination with the Node Object the cpLocationGeo is mandatory.

Geographic Location: GPS location where the physical device is located. This configuration property is mandatory if the OLC profile is implemented.

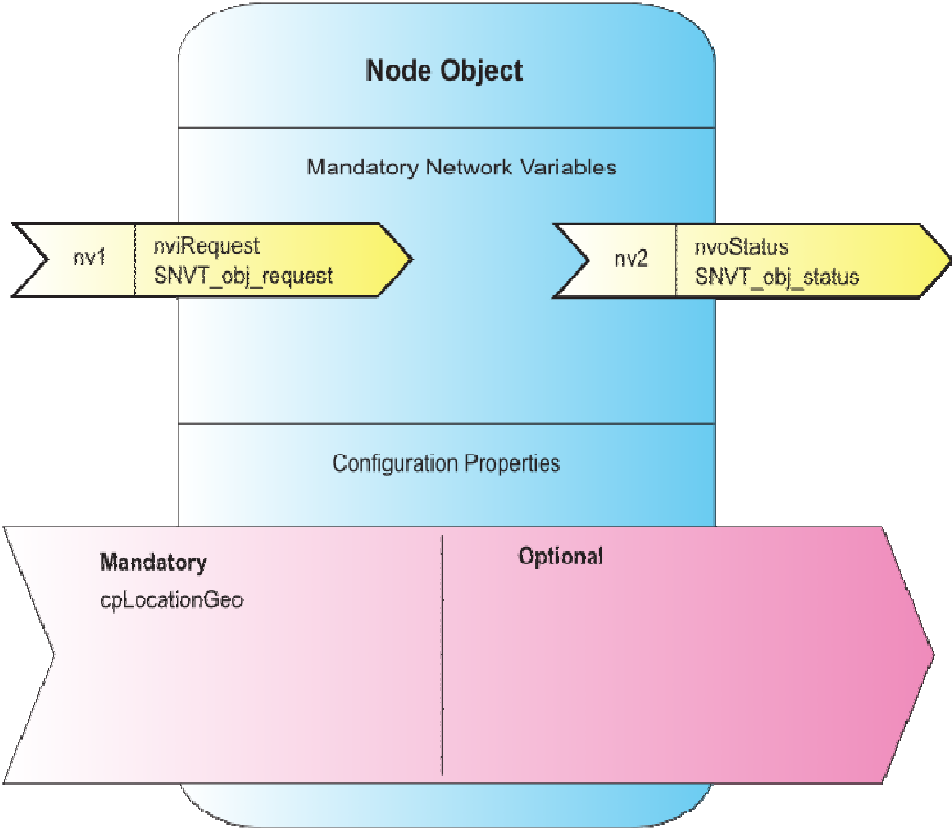


Figure 3 Object Details

Table 1 SNVT Details

NV # (M/O)*	Variable Name	SNVT Name	SNVT Index	Description
1 (M)	nviLampValue	SNVT_switch	95	The desired state (on/off) and value (%) of the lamp bulb
2 (M)	nviRunHours	SNVT_time_hour_p	198	The method used to reset or initialize the run-hours count
3 (M)	nviEnergy	SNVT_elec_kwh_l	146	The method used to reset or initialize the electricity-consumption total
4(M)	nvoLampValueFb	SNVT_switch	95	The actual state (on/off) and value (%) of the lamp bulb
5(M)	nvoOLCstatus	SNVT_lamp_status	199	The data related to the internal status conditions of the lamp controller
6(M)	nvoEnvironment	SNVT_environment	200	The measured values from in and around the environment.

* M = mandatory, O = optional

Table 2 SCPT Details

Man. Opt. *	SCPT Name NV Name Type or SNVT	SCPT Index	Associated NVs **	Description
Man	SCPTminSendTime cpMinSendTime SNVT_time_sec (107)	52	Entire Object	Minimum period of time between consecutive transmissions of the current value
Man	SCPTmaxSendTime cpMaxSendTime SNVT_time_sec (107)	49	Entire Object	Maximum period of time that expires before the Object will automatically update NVs
Man	SCPTbkupSchedule cpBkupSchedule Structure	344	Entire Object	The On/Off schedule to be used as a default
Man	SCPTlampPower cpLampPower SNVT_power	346	Entire Object	The maximum wattage of the installed bulbs.
Man	SCPTenableStatusMsg cpEnableStatusMsg structure	348	nvoOLCstatus (NV5)	Enable-Status Mask
Man	SCPTdeviceOutSelection cpDeviceOutSelection enumeration	347	Entire Object	Device Output Selection
Man	SCPTminSetpoint cpDimLowLevelLight SNVT_lev_precent	53	Entire Object	Dimmable Minimum
Man	SCPTrampUpTm cpWarmUpTime SVNT_time_sec	160	Entire Object	Minimum warm-up time
Man	SCPTmaxLevelVolt cpMaxLevelVolt SNVT_volt	349	Entire Object	Preceivable-Maximum Control
Man	SCPTOLCLimits cpOLCLimits structure	345	nvoOLCstatus (NV5)	OLC Limits Setpoints
Man	SCPTpwrUpState cpPwrUpState SNVT_switch	73	Entire Object	OLC Powerup state

* Man = mandatory, Opt = optional

** List of NVs to which this configuration property applies.

Mandatory Network Variables

Lamp Value Input

```
network input sd_string("@p|1") SNVT_switch  
nviLampValue;
```

This input will drive the desired output of the lamp controller; the output being relays, a 1-to-10V control line, a foreign lighting-control connection, or direct light output.

Valid Range

The valid Range of SNVT_switch.

Values of 0 to 100% represent 0 to 100% light output.

Default Value

None specified.

Configuration Considerations

None specified.

Run-Hours Change Input

```
network input sd_string("@p|2") SNVT_time_hour_p  
nviRunHours;
```

This input will overwrite the cumulative run-hours counter with a new value to either clear or initialize the internal value; enabling correct fixture-life computations in cases where the lamp controller hardware has been replaced.

Valid Range

The valid Range of SNVT_time_hour_p.

Default Value

None specified.

Configuration Considerations

None specified.

Electricity-Used Change Input

```
network input sd_string("@p|3") SNVT_elec_kwh_l  
nviEnergy;
```

This input will overwrite the cumulative energy-consumption counter with a new value to either clear or initialize the internal value; enabling correct energy-consumption computations in cases where the lamp controller hardware has been replaced.

Valid Range

The valid Range of SNVT_elec_kwh_l.

Default Value

None specified.

Configuration Considerations

None specified.

Lamp Feedback Value Output

```
network output sd_string("@p|4") bind_info(any)  
SNVT_switch nvoLampValueFb;
```

This output returns the actual output value of the lamp controller. In case of fixture or lamp problems/limitations, this value can differ from the desired value provided to nviLampValue.

Valid Range

The valid range of SNVT_switch.

Default Value

None specified.

Configuration Considerations

None specified.

When Transmitted

The output variable is transmitted:

- Upon node reset, after obtaining valid data.
- When the 'state' has changed.
- Regularly at the interval defined by the configuration variable cpMaxSendTime.

Default Service Type

None specified.

Lamp-Controller Status Output

```
network output sd_string("@p|5") bind_info(any)
SNVT_lamp_status nvoOLCStatus;
```

This output returns the data related to the internal status conditions of the lamp controller .

Valid Range

The valid range of SNVT_lamp_status.

Default Value

None specified.

Configuration Considerations

None specified

When Transmitted

The output variable is transmitted:

- Upon node reset, after obtaining valid data.
- When the 'state' has changed.

· Regularly at the interval defined by the configuration variable cpMaxSendTime.

Default Service Type

None specified.

OLC Environment Output

```
network output sd_string("@p|6") bind_info(any)
SNVT_environment nvoEnvironment;
```

This output provides the measured values from in and around the environment of the fixture, including mains/lamp voltages, mains/lamp currents, lamp temperature, consumed power, and power factor .

Valid Range

The valid range of SNVT_environment.

Default Value

None specified.

Configuration Considerations

None specified

When Transmitted

The output variable is transmitted:

- Upon node reset, after obtaining valid data.
- When the 'state' has changed.
- Regularly at the interval defined by the configuration variable cpMaxSendTime.

Default Service Type

None specified.

Configuration Properties

Send Heartbeat (Mandatory)

```
network input config sd_string("&1, P, 0\x80, 49")
SNVT_time_sec nciMaxSendTime;
```

This input configuration property sets the maximum period of time that can expire before the Object will automatically update the following network variables:

nvoLampValueFb
nvoOLCStatus
nvoEnvironment

Please consider the low bandwidth if the application is based on Powerline.

Valid Range

The valid range of SNVT_time_sec.

Default Value

The default value is 0.0 (no automatic update).

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTmaxSendTime (49)

Maximum send time (Mandatory)

```
network input config sd_string("&1, P, 0\x80, 49")
SNVT_time_sec nciMaxSendTime;
```

This input configuration property sets the maximum period of time that can expire before the Object will automatically update the following network variables:

nvoLampValueFb

nvoOLCStatus
nvoEnvironment

Please consider the low bandwidth if the application is based on Powerline.

Valid Range

The valid range of SNVT_time_sec.

Default Value

The default value is 0.0 (no automatic update).

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTmaxSendTime (49)

Backup Schedule (Mandatory)

```
network input config sd_string("&1, p, 0\x80, 344")  
Sturcture cpBkupSchedule;
```

This configuration property defines a default on/off schedule for cases when the lamp controller detects that communication with the segment controller is lost.

If the START and the END time are the same, then there is no backup schedule defined.

Valid Range

SCPTbkupSchedule

Default Value

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTbkupSchedule (344)

Lamp Power (Mandatory)

```
network input config sd_string("&1,p,0\x80,346")
SNVT_power cpLampPower;
```

This configuration defines the maximum wattage of the installed bulbs.

Valid Range

SNVT_power

Default Value

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTlampPower (346)

Enable-Status Mask (Mandatory)

```
network input config sd_string("&2,5,0\x80,348")
Structure cpEnableStatusMsg;
```

This configuration property setting determines which status information is conveyed by nvoOLCStatus. SET ("1") means that the corresponding value will be sent. CLEARED ("0") means that the corresponding value will not be sent.

Apply to nvoOLCStatus (NV5)

Valid Range

None specified

Default Value

None specified

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTenableStatusMsg (348)

Device Output Selection (Mandatory)

```
network input config sd_string("&1,p,0\x80,347")
ENUM cpDeviceOutSelection;
```

This configuration property sets the hardware-output type, if the lamp controller is capable of more than one type of output:

OLC_DEFAULT = Standard (default)

OLC_RELAY = Relay Actuation

OLC_ECO_MODE = ECO Mode

OLC_1_TO_10 = 1-to-10 Volt

OLC_DALI = DALI

Valid Range

SCPTdeviceOutSelection

Default Value

OLC_DEFAULT

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

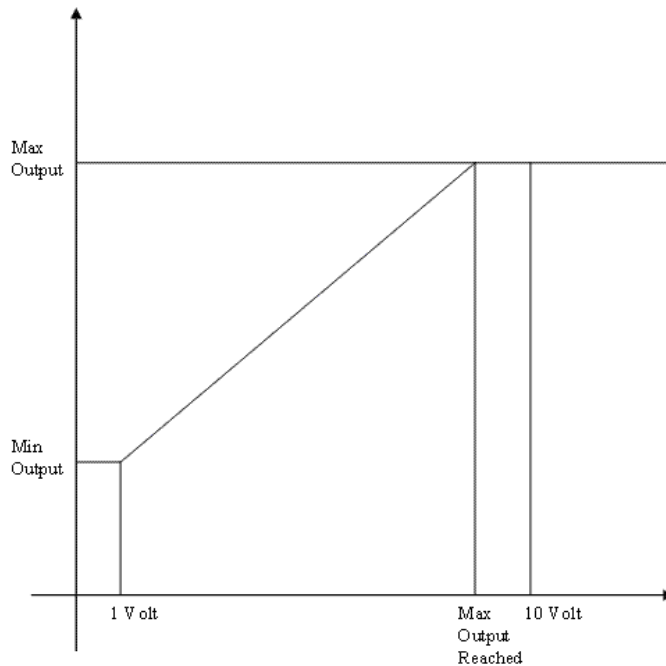
SCPTdeviceOutSelection (347)

Dimmable Minimum (Mandatory)

```
network input config sd_string("&1,P,0\x80,53")
SNVT_lev_percent cpDimLowLevelLight;
```

This configuration property represents the minimum light-level setting possible for the lamp and equates that to the 1-10V scale. For example: if the lamp can be dimmed only to a minimum of 50% (to still maintain illumination), then a cpDimLowLevelLight value of 50% would equate to 1V on the 1-to-10 Volt output.

The default value of 0% de-activates the configuration property.



Valid Range

SNVT_lev_percent

Default Value

0%

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTminSetpoint (53)

Minimum warm-up time (Mandatory)

```
network input config sd_string("&1,p,0\x80,160")
SNVT_time_sec cpWarmUpTime;
```

This configuration property sets the minimum time that is required of a lamp to remain at 100% on (e.g., 10 Volts) before the dimming command can be executed.

Valid Range

SNVT_time_sec

Default Value

NULL seconds

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTrampUpTm (160)

Preceivable-Maximum Control (Mandatory)

```
network input config sd_string("&1,p,0\x80,349")
SNVT_volt cpMaxLevelVolt;
```

This configuration property sets the maximum voltage (of the 1-10V output) needed to achieve 100% lamp-light output. In many cases, 100% is reached before the 10V-limit is reached.

Valid Range

1 – 10 Volt

Default Value

10 Volt

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTmaxLevelVolt (349)

OLC Limits Setpoints (Mandatory)

```
network input config sd_string("&2,5,0\x80,345")
Structure cpOLCLimits;
```

This configuration property sets the limits for nvoOLCStatus.

Applies to nvoOLCStatus (NV5)

Valid Range

SCPTOLCLimits

Default Value

None specified

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTOLCLimits (345)

OLC Powerup state (Mandatory)

```
network input config sd_string("&1,p,0\x80,73")
SNVT_switch cpPwrUpState;
```

This configuration property is be used to define the default output value on power up.

Valid Range

SNVT_switch

Default Value

100.0 1

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTpwrUpState (73)

Key for Unresolved References

p is this Object's index relative to the node sd_string declaration, when implemented.

Data Transfer

None specified.

Power-up State

There is no immediate network action on Power-up State.

Boundary and Error Conditions

None specified.

Additional Considerations

None specified.

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