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SPECIFICATIONS

Product Name : Network Signal Tower

Model : NHB□-□□-□□□□□

PATLITE Corporation

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1. General Specifications

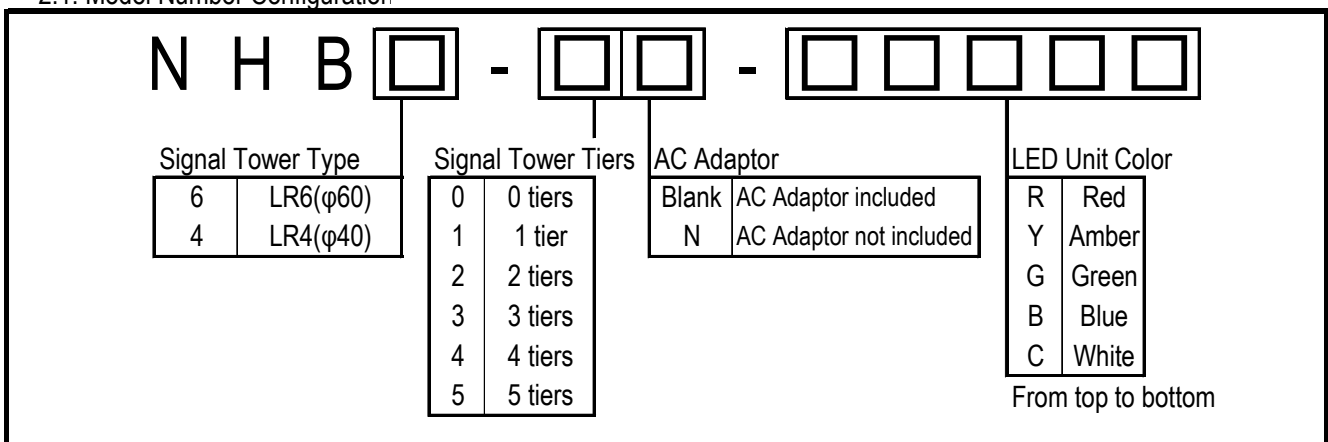
Model	5 tiers	NHB□-5□	
	4 tiers	NHB□-4□	
	3 tiers	NHB□-3□	
	2 tiers	NHB□-2□	
	1 tier	NHB□-1□	
	0 tiers	NHB□-0□	
Rated Voltage	DC Jack	24VDC	
	AC Adaptor*1	Input: 100 - 240VAC (50/60Hz) Output: 24VDC	
Operating Voltage Range	DC Jack	21.6 - 26.4VDC	
	AC Adaptor*1	90 - 264VAC	
Rated Current Consumption	Main Unit*2	Standby: 110mA Maximum: 155mA (24VDC input)	
	LED Unit	40mA (per Unit)	
Rated Power Consumption	Main Unit*2	Standby: 3.2W Maximum: 4.4W (with AC Adaptor, 100VAC input)	
	LED Unit	1.0W (per Unit, with AC Adaptor, 100VAC input)	
Operating Ambient Temperature		0 - 40°C (No Dew or Condensation)	
Operating Ambient Humidity		20%RH - 80%RH (No Dew or Condensation)	
Storage Ambient Temperature		-10 - 60°C (No Dew or Condensation)	
Storage Ambient Humidity		20%RH - 80%RH (No Dew or Condensation)	
Mounting Location		Indoor Only	
Mounting Direction		Upright	
Protection Rating		IP 20	
Insulation Resistance		More than 10Mohm at 500VDC between live part and non-current carrying metallic part	
Withstand Voltage		1500VAC applied for 1min (10mA or less) between live part and non-current carrying metallic part without breaking insulation	
Sound Pressure Level		80dB or more (at 25°C)	
Environmental Condition		Front direction from the center, at 1m, Maximum volume setting	
Mass [Tolerance ±10%]	NHB6	645g + (60g) x Signal Tower Tiers (AC Adaptor not included)	
	NHB4	635g + (35g) x Signal Tower Tiers (AC Adaptor not included)	
Communication Method		Ethernet (Conforms to the IEEE 802.3) 10BASE-T / 100BASE-TX / 1000BASE-T (Auto MDI / MDI-X)	
		IP Network IPv4 / IPv6 dual stack	
Interface		USB2.0/1.1 Type-A 1ch	
Outer Dimensions		Refer to the Outer Dimension Drawing	
Accessories		AC Adaptor*1 , Adhesive sheet	
Compatible Unit (Optional)	NHB6	LED Unit	LR6-E-RZ, RY, RG, RB, C LR6-E-R, Y, G, B, MZ
		Wireless Data Acquisition System Transmitter	WDT-6LR-Z2
	NHB4	LED Unit	LR4-E-RZ, RY, RG, RB, C LR4-E-R, Y, G, B
		Wireless Data Acquisition System Transmitter	WDT-4LR-Z2
Optional Parts		Wall Mounting Bracket	NH-001
		Partition Mounting Bracket	NH-002
		AC Adaptor	ADP-001

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Conformity Standards	UL 62368-1, CSA C22.2 No.62368-1 FCC Part 15 Subpart B(Class A), ICES-003(Class A) EN 55032(Class A), EN 55035, EN IEC 63000 (KS C 9610-6-4, KS C 9610-6-2) *3
Remark	*1 N type excluded *2 This value excludes USB current consumption. *3 Only N type - Conforms to the CE Requirements - Conforms to the UKCA Requirements - UL/cUL Listed

2. Model

2.1. Model Number Configuration



2.2. Model Number List

NHB4-0	NHB4-3-RYG	NHB6-0	NHB6-3-RYG
NHB4-0N	NHB4-3N-RYG	NHB6-0N	NHB6-3N-RYG
NHB4-1-R	NHB4-4-RYGB	NHB6-1-R	NHB6-4-RYGB
NHB4-1-Y	NHB4-5-RYGBC	NHB6-1-Y	NHB6-5-RYGBC
NHB4-1-G		NHB6-1-G	
NHB4-2-RY		NHB6-2-RY	
NHB4-2-RG		NHB6-2-RG	

3. Action Specification

3.1. Information (Main Unit)

Signal Tower	Lighting, Flashing pattern, and off lighting can be controlled for each LED.
Flashing pattern 1	ON(500ms), OFF(500ms) (repetition)
Flashing pattern 2	ON(80ms), OFF(170ms), ON(80ms), OFF(670ms) (repetition)
Flashing pattern 3	ON(250ms), OFF(250ms) (repetition)
Flashing pattern 4	ON(1000ms), OFF(1000ms) (repetition)
Buzzer	5 kinds of buzzer sounds
Buzzer pattern 1	ON(250ms), OFF(250ms) (repetition)
Buzzer pattern 2	ON(500ms), OFF(500ms) (repetition)
Buzzer pattern 3	ON(200ms), OFF(50ms), ON(200ms), OFF(550ms) (repetition)
Buzzer pattern 4	ON(continuity)
Buzzer pattern 5	ON(1000ms), OFF(1000ms) (repetition)

3.2. Information (Network)

Email Notification	When an event occurs, an e-mail message is transmitted
Number of notifications	8
Authentication protocol	SMTP certification(Password, OAuth2), POP authentication
Security	SSL/TLS, STARTTLS, none
SNMP Notification	When an event occurs, Trap or Inform is executed.
Number of notifications	8
Version	v1 / v2c / v3
HTTP Notification	When an event occurs, HTTP command is executed.
Number of notifications	8
Protocol	HTTP, HTTPS
Method	GET
Authentication protocol	Basic Access Authentication, Digest Access Authentication, none
PLC Information Write Command	When "Clear operation" occurs, PLC Write Command can be executed.
Number of notifications	4
Protocol	SLMP (The same format as the QnA compatible 3E and 4E frame of MC protocol) FINS TCP / UDP

4. Function Specification

4.1. Main Unit Control Function

RSH Command	Controllable with RSH Command
SSH Command	Controllable with SSH Command
HTTP Command	Controllable with HTTP Command
Socket Communication	Controllable with PNS Command and PHN Command
SNMP Command	Controllable with SNMP "set" Command
Version	v1 / v2c / v3
"Clear"Button	Clear operation is possible with "Clear" Button of the main unit

Command	Controllable Action				
	Signal Tower	Buzzer	e-mail	SNMP	HTTP
RSH Command	✓	✓	✓*1	✓*1	-
SSH Command	✓	✓	✓*1	✓*1	-
HTTP Command	✓	✓	-	-	-
Socket	PNS	✓	-	-	-
	PHN	△*2	△*3	-	-
SNMP Command	✓	✓	-	-	-
"Clear"Button	✓	✓*4	✓	✓	✓

- *1 It can be used when e-mail or SNMP is set to "Active" in the RSH/SSH Command Configuration.
 *2 Signal Tower "Red", "Amber" and "Green", and Flashing pattern 1
 *3 Buzzer pattern1 and Buzzer pattern2
 *4 It is possible to stop only the buzzer while maintaining the state of Signal Tower.

4.2. External Monitoring Function

Ping Monitoring Function	Network abnormality detection by sending Ping network devices
Number of Monitoring	24
Number of Group	3
Monitoring Cycle	1 - 600 seconds
Sending Count	The number of times to detect can be set from 1 to 30.
Number of Sending	The number of sending Ping by one monitoring can be set from 1 to 3.
SNMP Trap Reception Function	Trap Reception detection
Version	v1 / v2c / v3
Number of Reception	64
variable-bindings	2 OID per 1 Trap Reception
Detectable Type	INTEGER, OCTET STRING (String data, Binary data)
SNMP Supported Equipment Monitor Function	For SNMP Supported equipment, with SNMP command, their status can be acquisitioned periodically and monitored.
Version	v1 / v2c / v3
Monitoring Cycle	1 - 60 seconds
Detection method	Condition Agreement Detection : 20 Change Detection : 5
Condition Agreement	Detection that the acquired value meets the condition
Detectable Type	INTEGER, OCTET STRING (String data, Binary data)
Change Detection	Detection that the acquired value has changed
Detectable Type	INTEGER
PLC Information Read Command	Detects the state change of the device information of the PLC
Number of Monitoring	16
Transmission Interval	10ms / 50ms / 100ms
Protocol	SLMP (The same format as the QnA compatible 3E and 4E frame of MC protocol) FINS TCP / UDP

Monitoring	Executable action at detection						PLC Information Write Command
	Signal Tower	Buzzer	e-mail	SNMP	HTTP	MQTT	
Ping Monitoring	✓	✓	✓	✓	✓	✓	-
SNMP Trap Reception	✓	✓	✓	✓	✓	✓	-
SNMP Supported	✓	✓	✓	✓	✓	✓	-
PLC Information Read Command	✓	✓	✓	✓	✓	✓	-

4.3. Main Unit Status Acquisition Function

RSH Command	The state of the main body can be acquired by the status acquisition command.																							
SSH Command	The state of the main body can be acquired by the status acquisition command.																							
Socket Communication	Status acquisition available with PNS Command and PHN Command																							
SNMP Command	Status acquisition available with SNMP "get" Command																							
Version	v1 / v2c / v3																							
HTTP Communication	The state of the main body can be acquired in XML/JSON data format.																							
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Command</th> <th colspan="2">Acquisition data</th> </tr> <tr> <th>Signal Tower</th> <th>Buzzer</th> </tr> </thead> <tbody> <tr> <td>RSH Command</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>SSH Command</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td rowspan="2">Socket</td> <td>PNS</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>PHN</td> <td style="text-align: center;">✓*1</td> </tr> <tr> <td>SNMP Command</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>XML/JSON format file</td> <td style="text-align: center;">✓</td> <td style="text-align: center;">✓</td> </tr> </tbody> </table> <p>*1 Signal Tower "Red", "Amber" and "Green", and Flashing pattern 1 *2 Buzzer pattern 1 and Buzzer pattern 2</p>			Command	Acquisition data		Signal Tower	Buzzer	RSH Command	✓	✓	SSH Command	✓	✓	Socket	PNS	✓	PHN	✓*1	SNMP Command	✓	✓	XML/JSON format file	✓	✓
Command	Acquisition data																							
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SSH Command	✓	✓																						
Socket	PNS	✓																						
	PHN	✓*1																						
SNMP Command	✓	✓																						
XML/JSON format file	✓	✓																						

4.4 Main Unit Setting Function

Time Correction Function	The internal clock in this product can communicate with an NTP server to automatically correct the time.	
Automatic Network Setting	Network setting in this product can communicate with an DHCP server to automatically set.	
Buzzer Volume Setting	Master Volume of Buzzer can be set	
Flash Control Setting	The brightness of the LED unit can be reduced.*1	
Standard Action Setting	The color of Signal Tower that lights up after the clear operation is executed can be set	
Self-test Function	Self test of Signal Tower and buzzer is possible with test button of the main body and RSH/SSH command.	
Config Setting	Various settings of the main body can be read and written as setting file.	
Event Log	Event logs can be downloaded via web browser and USB flash drive.	
USB Flash Drive Function	USB flash drive can be used to read and written configuration files, update firmware, and download Event logs.	
Main Unit Setting	Various settings of the main body can be done with a web browser.	
Supported browsers	Google Chrome *2 Microsoft Edge *3	
Languages supported on the setting screen	Japanese, English, Traditional Chinese, Simplified Chinese, Korean, Thai German, French, Italian, Spanish, Mexican	
<p>*1 Light reduction is not possible when using LR4/6-E-MZ or WDT-4/6LR-Z2. *2 Google Chrome is a trademark or registered trademark of Google LLC. *3 Microsoft Edge is registered trademark of Microsoft Corporation in the United States and other countries.</p>		

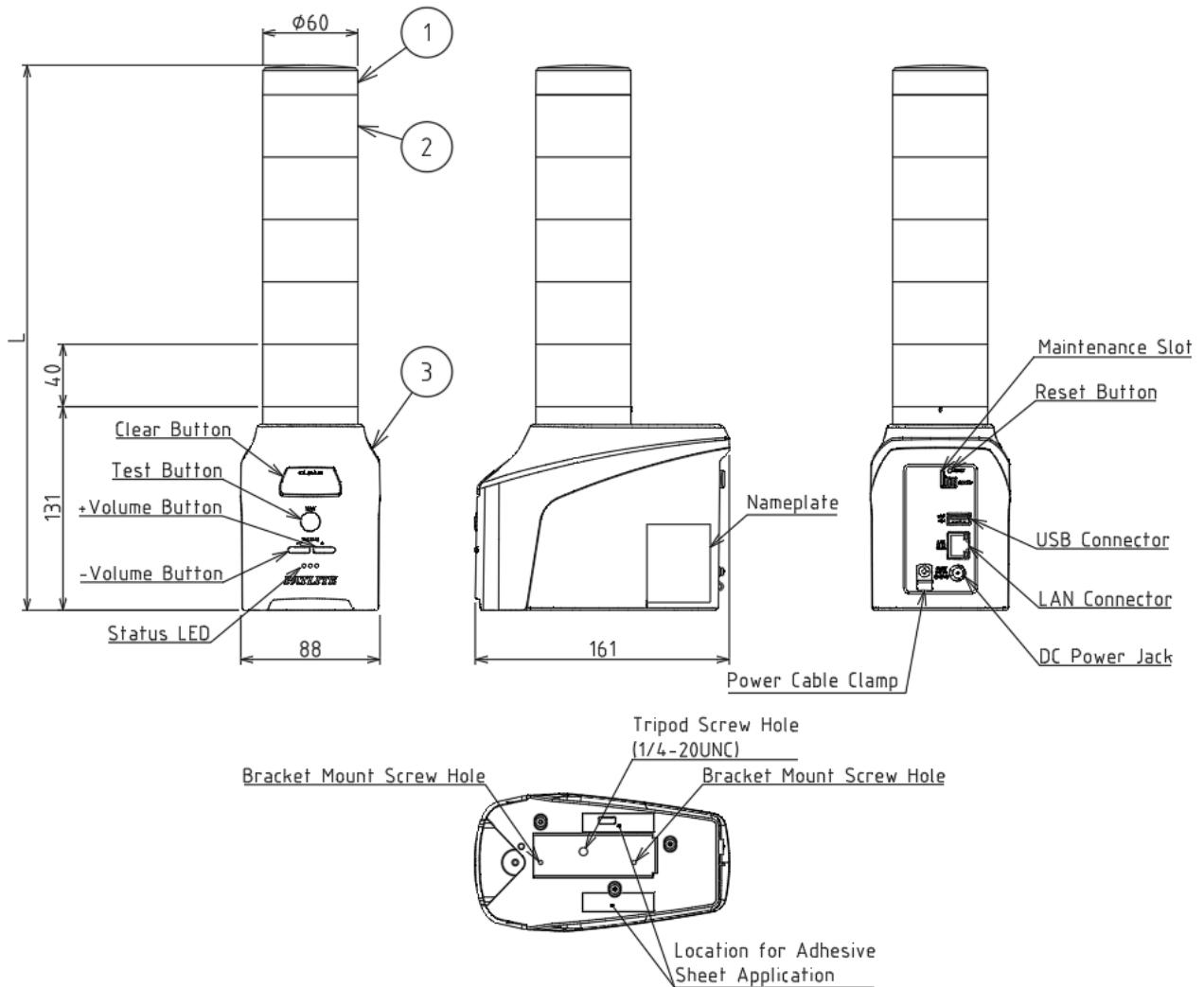
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4.5. Cloud Function

Supported Cloud Platform		Microsoft Azure *1
		Amazon Web Services (AWS) *2
Azure	Connection Settings	Azure IoT Central/DPS, Azure IoT Hub (IoT Plug and Play)
	Built-in features	Device Twin, Direct Method, Device-to-cloud Message, Cloud-to-device Message
AWS	Connection Settings	AWS IoT Core
	Built-in features	Device Shadow, MQTT client
Main Unit Control		Signal Tower, Buzzer
Main Unit Status Acquisition		Signal Tower, Buzzer
Main Unit Status Transmission		Built-in features, "Clear" button
<p>*1 Microsoft Azure is registered trademark of Microsoft Corporation in the United States and other countries.</p> <p>*2 Amazon Web Services, the "Powered by AWS" logo, and any other AWS trademarks used in such materials are trademarks of Amazon.com, Inc. or its affiliates in the United States and other countries.</p>		

NHB6

(Unit: mm)

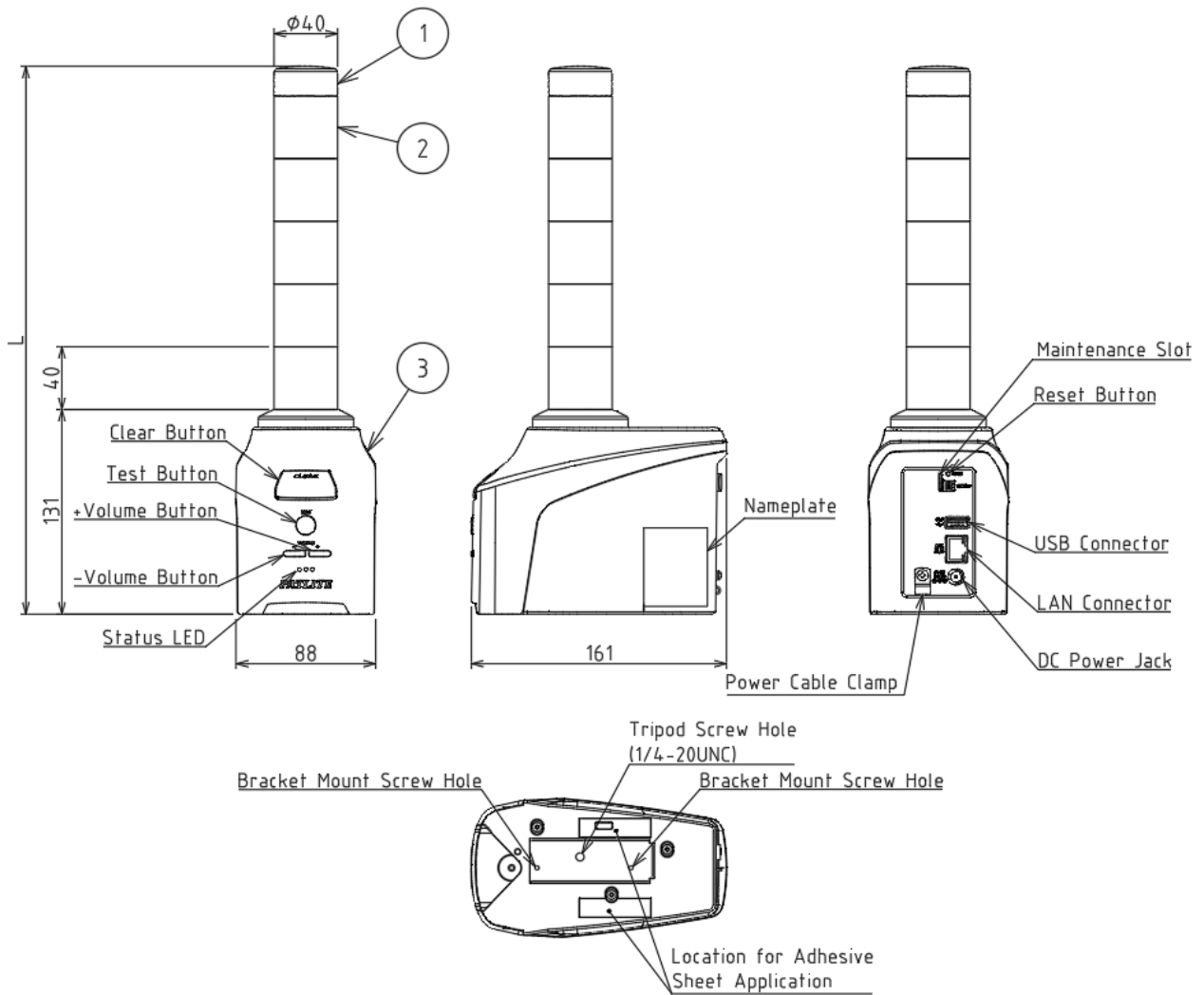


No.	Parts name	Material	Color
1	Head Cover	PC	Off-white
2	LED Unit	PC	Clear
3	Main Body	ABS	Off-white/Medium Gray

Number of LED	L
0 tiers	150
1 tier	190
2 tiers	230
3 tiers	270
4 tiers	310
5 tiers	350

NHB4

(Unit: mm)

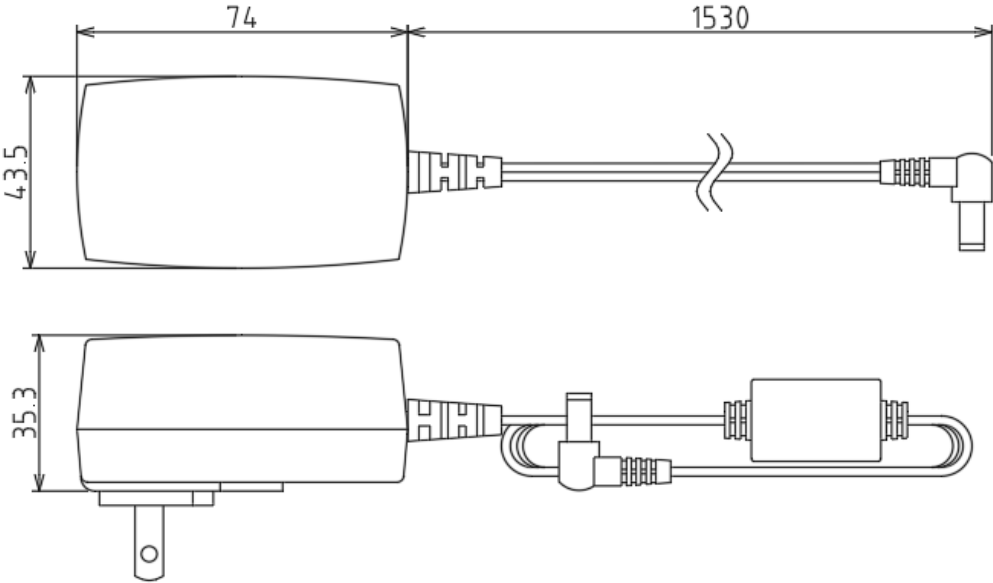


No.	Parts name	Material	Color
1	Head Cover	PC	Off-white
2	LED Unit	PC	Clear
3	Main Body	ABS	Off-white/Medium Gray

Number of LED	L
0 tiers	150
1 tier	190
2 tiers	230
3 tiers	270
4 tiers	310
5 tiers	350

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(Unit: mm)



AC Adaptor Dimensional drawing