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SPECIFICATIONS

Product Name : Network Signal Tower

Model : NHB□-□□-□□□□□

PATLITE Corporation

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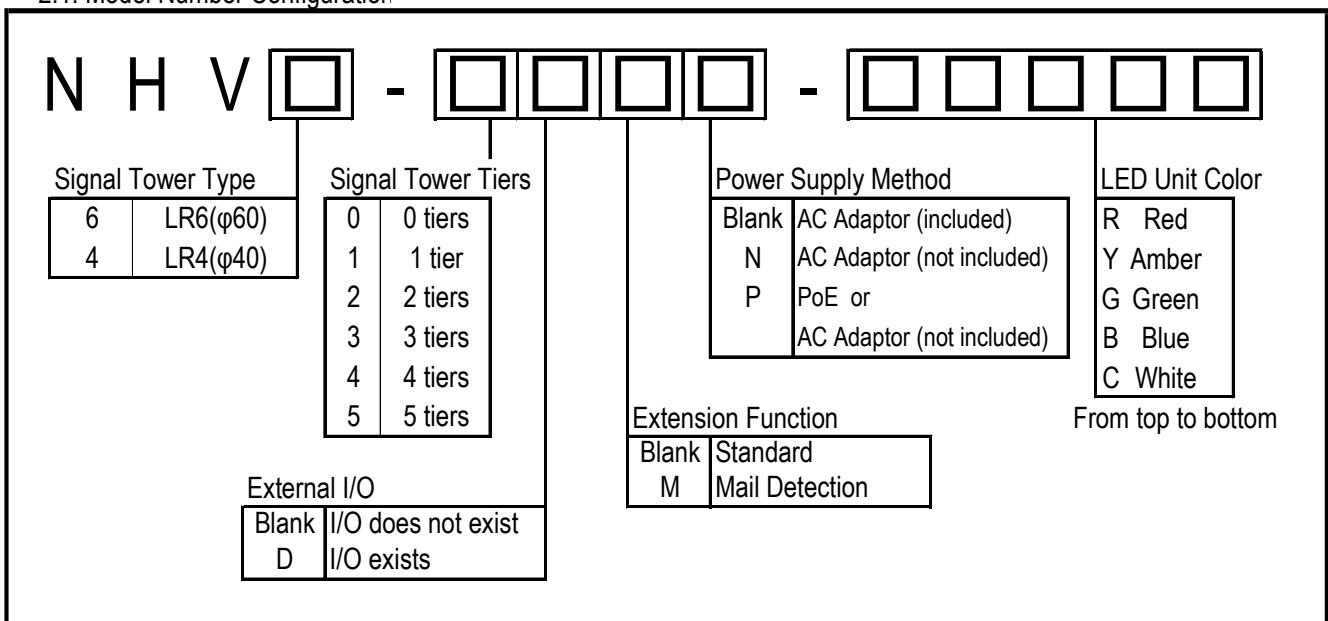
1. General Specifications

Model	5 tiers	NHV□-5□□□
	4 tiers	NHV□-4□□□
	3 tiers	NHV□-3□□□
	2 tiers	NHV□-2□□□
	1 tier	NHV□-1□□□
	0 tiers	NHV□-0□□□
Rated Voltage	DC Jack	24VDC
	PoE *1	48VDC Conforms to IEEE802.3at (PoE+) *2
	AC Adaptor *3	Input: 100 - 240VAC (50/60Hz) Output: 24VDC
Operating Voltage Range	DC Jack	21.6 - 26.4VDC
	PoE *1	42.5 - 57VDC
	AC Adaptor *3	90 - 264VAC
Rated Current Consumption	Main Unit *4	Standby: 120mA Maximum: 210mA (24VDC input) Standby: 115mA Maximum: 175mA (PoE 48VDC input)
	LED Unit	40mA (per Unit, 24VDC input) , 25mA (per Unit, PoE 48VDC input)
Rated Power Consumption	Main Unit *4	Standby: 3.5W Maximum: 6W (AC Adaptor, 100VAC input)
	LED Unit	1.0W (per Unit, 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		88dB or more
	Environmental Condition	Front direction from the center, at 1m, 1.8kHz sine wave played back at -6dB MP3 data of the content and use of the environment, the sound pressure level will change.
Audio Line Output		600Ω 0dBV (Unbalanced, Monaural Mini-Jack)
Mass [Tolerance ±10%]	NHV6	760g + (60g) x Signal Tower Tiers (AC Adaptor not included)
	NHV4	750g + (35g) x Signal Tower Tiers (AC Adaptor not included)
	NHV6-D	805g + (60g) x Signal Tower Tiers (AC Adaptor not included)
	NHV4-D	795g + (35g) x Signal Tower Tiers (AC Adaptor not included)
	NHV6-DP	850g + (60g) x Signal Tower Tiers
	NHV4-DP	840g + (35g) x Signal Tower Tiers
External Contact Output (Only D-type)		Non-voltage contact output
	Number of Contacts	2
	Contact Capacity	(30VDC@3A) inrush current 5A or less (5VDC@1mA, Minimum, Reference)
	Wire Diameter	Solid Wire / Stranded Wire: φ0.41 - 0.81mm (AWG26 - 20)
	Wiring Method	Screwless terminal block
External Contact Input (Only D-type)		Non-voltage contact input NPN Transistor
	Number of Contacts	4
	Contact Capacity	"ON" output current @ 6mA or less per channel Terminal OFF condition Voltage: 24VDC
	Wire Diameter	Solid Wire / Stranded Wire: φ0.41 - 0.81mm (AWG26 - 20)
	Wiring Method	Screwless terminal block

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 *3 , Adhesive sheet		
Compatible Unit (Optional)	NHV6	LED Unit	LR6-E-RZ, RY, RG, RB, C LR6-E-R, Y, G, B, MZ
		Wireless Data Acquisition System Transmitter	WDT-6LR-Z2
	NHV4	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
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) *5 (TR CU 020, TR EEU 037) *5		
Remark	*1 Only P-type *2 A PoE+ power supply HUB that complies with IEEE802.3at is required. USB cannot be used with PoE-powered HUBs that comply with IEEE802.3af. *3 Excludes N-type and P-type *4 Does not include USB current consumption *5 Only N-type and P-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

NHV4-0	NHV4-0N	NHV6-0	NHV6-0N
NHV4-1-R	NHV4-3N-RYG	NHV6-1-R	NHV6-3N-RYG
NHV4-1-Y	NHV4-0DN	NHV6-1-Y	NHV6-0DN
NHV4-1-G	NHV4-3DN-RYG	NHV6-1-G	NHV6-3DN-RYG
NHV4-2-RY	NHV4-0DP	NHV6-2-RY	NHV6-0DP
NHV4-2-RG	NHV4-3DP-RYG	NHV6-2-RG	NHV6-3DP-RYG
NHV4-3-RYG	NHV4-0M	NHV6-3-RYG	NHV6-0M
NHV4-4-RYGB	NHV4-3M-RYG	NHV6-4-RYGB	NHV6-3M-RYG
NHV4-5-RYGBC	NHV4-0MN	NHV6-5-RYGBC	NHV6-0MN
NHV4-0D	NHV4-3MN-RYG	NHV6-0D	NHV6-3MN-RYG
NHV4-1D-R		NHV6-1D-R	
NHV4-1D-Y		NHV6-1D-Y	
NHV4-1D-G		NHV6-1D-G	
NHV4-2D-RY		NHV6-2D-RY	
NHV4-2D-RG		NHV6-2D-RG	
NHV4-3D-RYG		NHV6-3D-RYG	
NHV4-4D-RYGB		NHV6-4D-RYGB	
NHV4-5D-RYGBC		NHV6-5D-RYGBC	

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)
Sound	Up to 71 types of messages can be played on the main unit speaker and line output.
Number of messages	MP3 File : 60 kinds Preset : 11 kinds
MP3 Format	Bit Rate : 32kbit/s, 64kbit/s, 128kbit/s Constant Bit Rate (CBR) only
Preset	Buzzer Sound : 5 kinds Chime Sound : 3 kinds Voice Sound : 3 kinds
Playback Pattern	One-shot Playback, Repeat Playback, Endless Playback
One-shot Playback	It is played back once per playback event.
Repeat Playback	It is played back when set up to play a certain number of times per playback event. Number of playback times : 1 - 254
Endless Playback	It will play back repeatedly per playback event.
Playback Mode	Input Priority Playback, Memory Playback
Input Priority Playback	If a new playback event occurs, the channel being played back will be interrupted and a new channel will play.
Memory Playback	When playback is ended, the next available channel stored in memory will play.
Notification Sound	Up to 10 of Notification Sounds can be played in combination with other Sound.
Number of Notification Sounds	MP3 File : 5 kinds Preset : 5 kinds
MP3 Format	Bit Rate : 32kbit/s, 64kbit/s, 128kbit/s Constant Bit Rate (CBR) only
Preset	Chime Sound : 5 kinds
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. External Control

External Contact Output	External contact output can be controlled when an event occurs or outputting sound.	
Contact Function	Digital Output, BUSY Output	
Digital Output	The digital "A Contact" or "B Contact" output for an automatic OFF function of the digital output port can be set up.	
BUSY Output	It controls the relay contact output in conjunction with the signal output from the line-out.	

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	

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	Sound	Buzzer	Digi-Out	e-mail	SNMP	HTTP
RSH Command	✓	✓	✓	✓	✓*1	✓*1	-
SSH Command	✓	✓	✓	✓	✓*1	✓*1	-
HTTP Command	✓	✓*2	✓	✓	-	-	-
Socket	PNS	✓	✓	✓	-	-	-
	PHN	△*3	-	△*4	-	-	-
SNMP Command	✓	✓	✓	✓	-	-	-
"Clear" Button	✓	✓*5	✓*6	✓	✓	✓	✓

*1 It can be used when e-mail or SNMP is set to "Active" in the RSH/SSH Command Configuration.

*2 It is possible to play back received text data by performing speech synthesis in real time. Notification Sounds can be played in combination with before or after a synthesis sound.

*3 Signal Tower "Red", "Amber" and "Green", and Flashing pattern 1

*4 Buzzer pattern1 and Buzzer pattern2

*5 In memory playback mode, you can proceed to the next message

*6 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	Dtection 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							
Mail Detection (Only M-type)	Detect incoming mail on the mail server.							
Protocol	IMAP, IMAPS, POP3, POP3S							
Authentication method	Password Authentication, OAuth2							
Encryption Method	SSL/TLS, STARTTLS, none							
Mail check interval	10 - 3600 seconds							
Filter Rule	Conditions for detecting target emails can be set.							
Number of Condition	20							
Detection Target	Sender, Subject, Body text							
Decision condition	[Matches with], [Beginning with], [Include], [Be free of]							
External Contact Input Monitor Function	It monitors the state change of external contact input.							
Digital Logic Setting	A Contact, B Contact							
Detection method	Status Change Detection, Status Agreement Detection							
Status Change	Detection of change from OFF to ON or change from ON to OFF							
Status Agreement	Detecting the input for a certain period of time							
	Detection time : 1 - 3600 seconds Number of Detection : 4							
	Executable action at detection							
Monitoring	Signal	Sound	Buzzer	Digi-Out	e-mail	SNMP	HTTP	MQTT
Ping Monitoring	✓	✓	✓	✓	✓	✓	✓	✓
SNMP Trap Reception	✓	✓	✓	✓	✓	✓	✓	✓
SNMP Supported	✓	✓	✓	✓	✓	✓	✓	✓
Mail Detection *1	✓	✓	✓	✓	✓	✓	✓	✓
External Contact Input	✓	✓	✓	✓	✓	✓	✓	✓
*1 Mail detection is only available for M-type								

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.				
Acquisition data					
Command	Signal Tower	Sound	Buzzer	Digi-In	Digi-Out
RSH Command	✓	✓	✓	✓	✓
SSH Command	✓	✓	✓	✓	✓
Socket	PNS	✓	✓	✓	✓
	PHN	✓*1	-	✓*2	-
SNMP Command	✓	✓	✓	✓	✓
XML/JSON format file	✓	✓	✓	✓	✓
*1 Signal Tower "Red", "Amber" and "Green", and Flashing pattern 1					
*2 Buzzer pattern 1 and Buzzer pattern 2					

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.				
Master Volume Setting	Master Volume of Buzzer and Sound 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.				
Text-to-speech synthesis	Speech synthesis from text data can be registered as voice data.				
Supported languages	Japanese (Kanji-Kana mixed text), English				
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				
*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.					

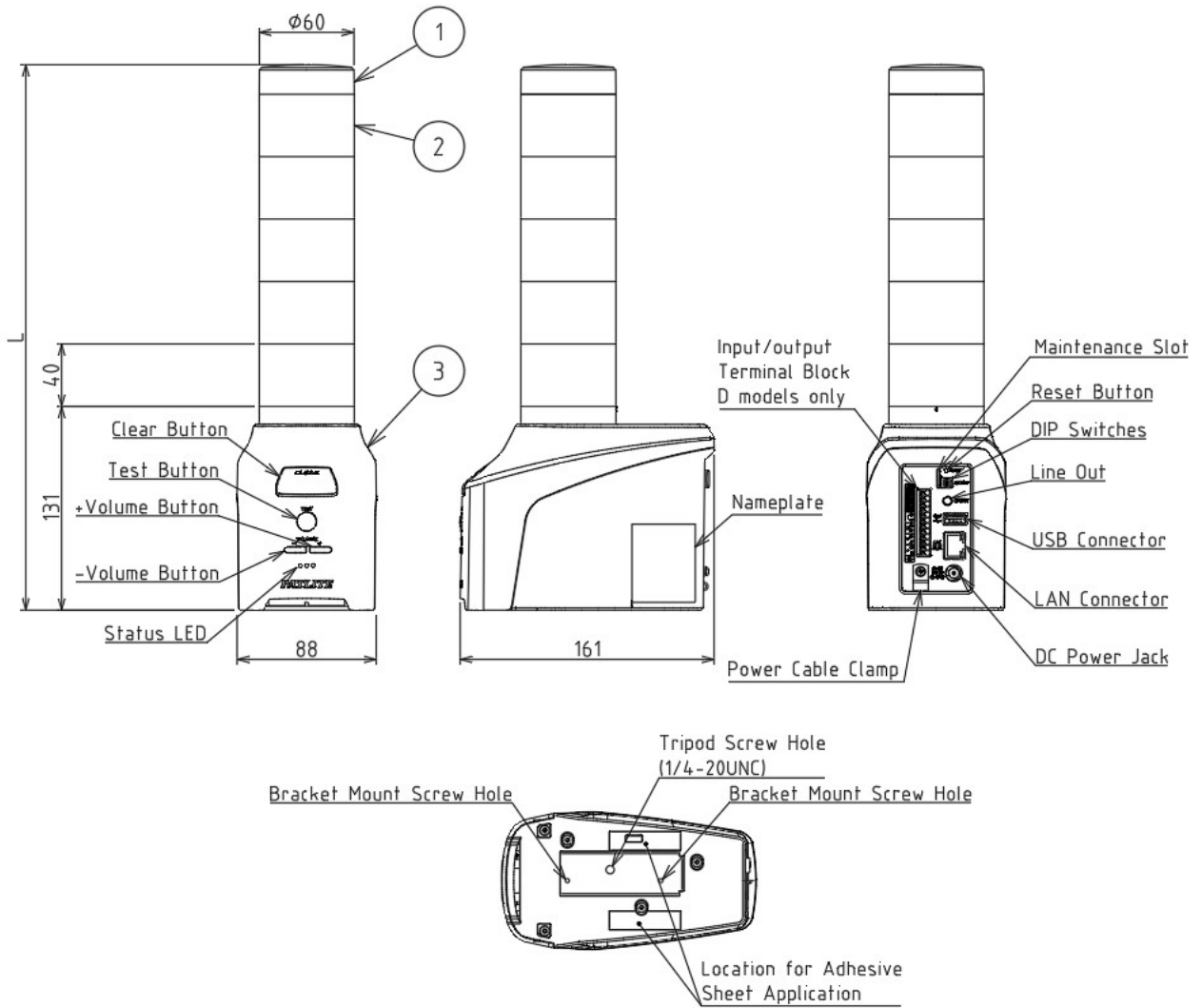
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4.5. Cloud Function

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, Sound *3, Buzzer, Digital Output
Main Unit Status Acquisition		Signal Tower, Sound, Buzzer, Digital Output
Main Unit Status Transmission		Signal Tower, Sound, Buzzer, "Clear" button, Digital Output, Digital Input
<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> <p>*3 It is possible to play back received text data by performing speech synthesis in real time. Notification Sounds can be played in combination with before or after a synthesis sound.</p>		

NHV6

(Unit: mm)

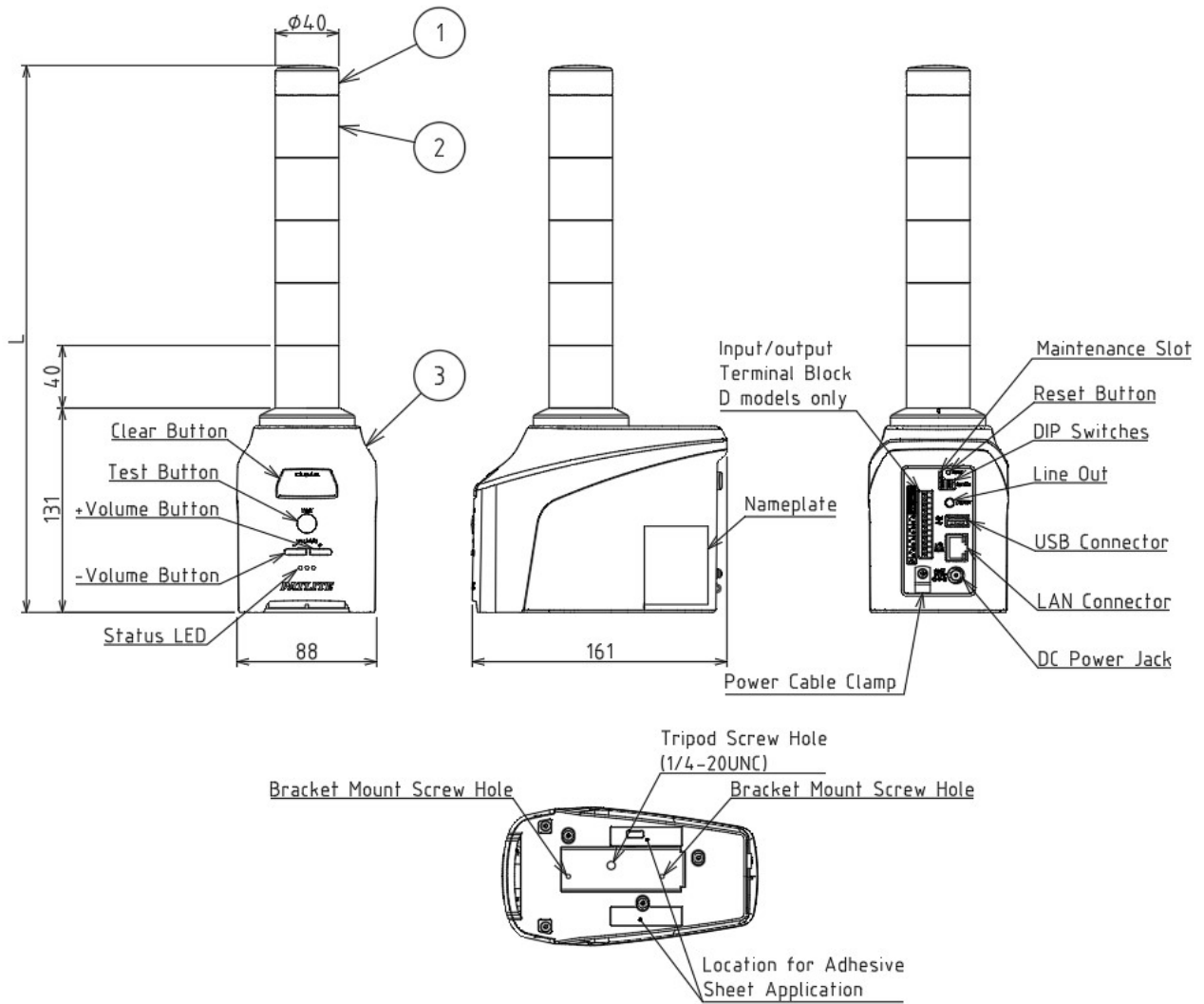


No.	Parts name	Material	Color
1	Head Cover	PC	Off-white
2	LED Unit	PC	Clear
3	Main Body	ABS	Off-white/Medium Gray

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

NHV4

(Unit: mm)

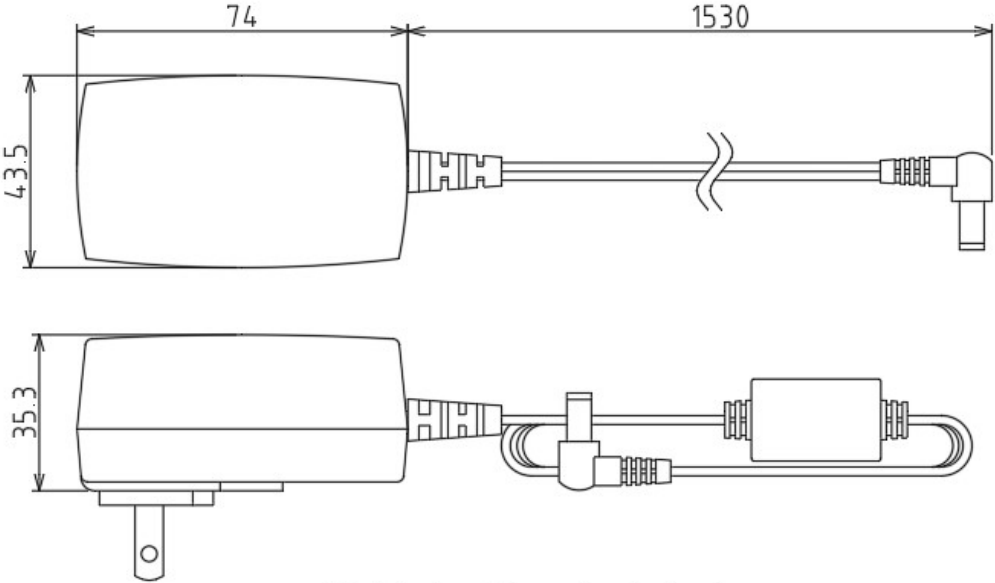


No.	Parts name	Material	Color
1	Head Cover	PC	Off-white
2	LED Unit	PC	Clear
3	Main Body	ABS	Off-white/Medium Gray

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