



Product Variation Details Form Guide



VeraSolSM

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Purpose of the Form

The purpose of this form is to help us understand:

1. The composition of kits and product families that companies are submitting for certification
2. Characteristics and specifications of individual components. This information allows us to reduce testing time and costs by referencing results between similar components where applicable.

Please see VeraSol's [Framework for Testing Component Families](#) policy for details on product families and referencing results between products.

Form sheets

(KIT) Similar products

Optional Testing-Sim Products

(Family & kit)Variation Details

Optional Testing-Family&Renewal

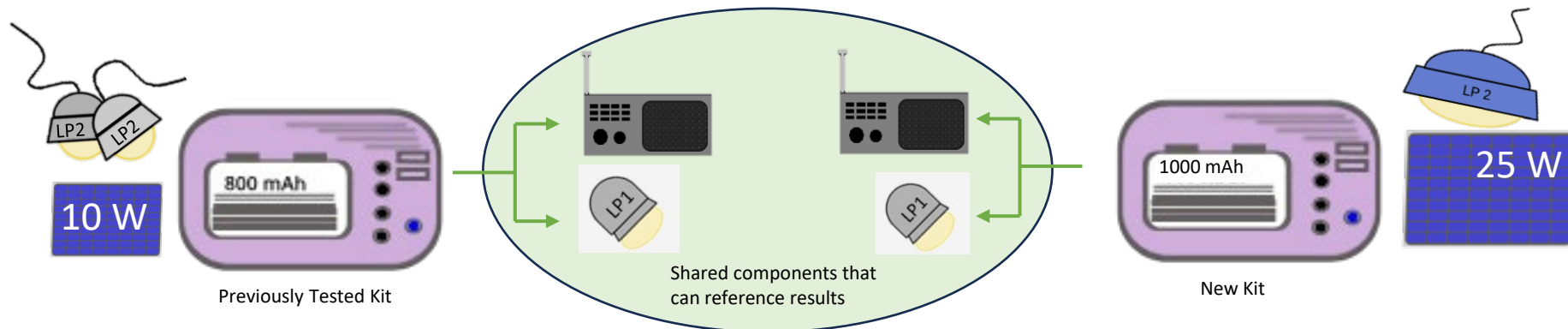
The Variation details form is composed of four separate sheets that serve unique functions. Detailed explanations for each tab can be found on the following slides.

1. (KIT) Similar Products: For new kits that are being fully tested that share similar characteristics or components to a product that was previously tested.
2. (Family & kit)Variation Details: for kits and product families. This tab is used for renewals and products that are being submitted for testing for the first time.
3. Kit and Family optional testing: these sheets are where companies can request optional testing for their kits or components.

(KIT) Similar Products

The similar products tab is for new kits that can reference test results from a previously tested product. This allows us to substitute the results of a new product with the results of a previously tested product. This will cut down on the amount of testing needed for a new product which can reduce costs and testing time.

For example, a previously tested kit might come with a radio and a torch that is going to be included with a new kit. The results for the radio and torch could be referenced from the report of the previously tested kit.



(KIT) Similar Products

The first column (column C) is for the product that will be fully tested or was already fully tested during a previous testing event.

The following columns (D-G) are for products that are being submitted for testing that will reference results from the product in column C.

Element	Primary Product/Kit	Current Variation 1	Current Variation 2	Current Variation 3	Current Variation 4
	Enter the kit that you want to be fully tested here that will have results referenced	Enter the kit that will be tested and is similar to the Primary Product.	Enter the kit that will be tested and is similar to the Primary Product.	Enter the kit that will be tested and is similar to the Primary Product.	Enter the kit that will be tested and is similar to the Primary Product.
	<i>[insert name]</i>	<i>[insert name]</i>	<i>[insert name]</i>	<i>[insert name]</i>	<i>[insert name]</i>



(Family & kit)Variation Details

The (Family & kit)Variation Details tab is for kits and product families. This tab is used for new products and products that will be renewed. The tab includes sections for compositions of kits and product families as well as sections for individual component specifications.

This tab is important for determining which tests are required to certify a kit or product family. It also is used to determine where results can be referenced between components.

STEP 1	- Fill in the applicable yellow cells in table below for each product nam - In Row 6, Columns D - AA, include the name and model number of each co - Enter the number of each component that is included in each kit in yellow ce - Add rows or columns as needed.
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Product/Kit Name & Model Number	Does this kit need a Wh/day calculation?	Light Points			
[yes/no]		[Name / Model #1]	[Name / Model #2]	[Name / Model #3]	[Name / Model #4]

STEP 2	Please fill in the applicable and relevant information below for each component For rows that are not applicable to the component, enter "n/a".
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Element	Light Point 1	Light Point 2	Light Point 3	Light Point 4
	[Name / Model #1]	[Name / Model #2]	[Name / Model #3]	[Name / Model #4]
Has this component been previously tested?				
Light source				
Number of brightness settings				
Luminous flux for each light output level				
Number of original equipment manufacturer(s) (OEMs)				
Original equipment manufacturer(s) (OEMs). List all if multiple				
Light point housing size and lens cover type				
Strain relief type				
Is there a constant current regulator (driver) in the lamp?				
(yes/no)				
Operating voltage or voltage range [V]				
Type and LED part number				
(e.g. high/low power LED, through-hole/surface mount LED, CFL, etc.)				
Number of LEDs per lamp				
Drive current per LED (mA)				
LED Manufacturer				
Additional details (e.g. optics, etc.)				
Preferred Lumen Maintenance testing method				
Note: Optional 2000 hr testing is offered, but not required. Additional testing may increase testing costs and include additional VeriSol fees.				
Does the lighting appliance have IEC 60598-1 certification?				
Any other differences between the light points?				

(Family & kit)Variation Details

Product/Kit Name & Model Number	Does this kit need a Wh/day calculation? [yes/no]	Light Points		PV Modules			Batteries			Control Unit and Housing
		3 W bulb	5 W tubelight	10 W PV module	20 W PV module	30 W PV module	10 Ah main unit	12 Ah main unit	15 Ah main unit	SHS Control unit
SHS kit 1 (SHS01)	yes	3	0	1			1			1
SHS kit 2 (SHS02)	yes	3	1		1			1		1
SHS kit 3 (SHS03)	yes	4	1			1			1	1

The first section of the family and kit variation details tab is for listing the kits, components and kit compositions that are applying for certification or re-certification. List each kit in the first column. List the components included in the kit or and, if applicable, product family. Lastly, enter the quantity of each component included in each kit where the kit rows and component columns meet. If a component is optional, “0-1” can be entered in the cell.

For example, the SHS Kit 1 (SHS01) included three 3 W bulbs, one 10 W PV module, and a 10 Ah main unit.



(Family & kit)Variation Details

The sections below are where manufacturers fill in data for each component. Fill out each component column in the applicable cells.

Make sure that the data in this section agrees with the data in the above section. There are often discrepancies between the data in these two sections.

Grayed out cells are not applicable to the components in the column.

Element	Battery 1	Battery 2	Battery 3
	10 Ah main unit	12 Ah main unit	15 Ah main unit
Battery capacity (mAh) (pack level)	10000	12000	15000
Cell capacity (mAh)	5000	6000	5000
Number of cells in series	4	4	4
Number of cells in parallel	2	2	3
Battery chemistry (e.g. VRLA, Li-ion, NiMH, etc.)	LiFePO4	LiFePO4	LiFePO4
Battery nominal voltage (V) (pack)	12.8	12.8	12.8
Cell nominal voltage (V)	3.2	3.2	3.2
Battery cell size (e.g. 14500, 26500, 32700)	26650	26650	26650
Number of original equipment manufacturer(s) (OEMs)	2	2	2
Original equipment manufacturer(s) (OEMs). List all if multiple	VS BATT, CL BATT	VS BATT, CL BATT	VS BATT, CL BATT
Does the battery have individual cell overvoltage protection?	yes	yes	yes



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Optional Testing – Similar Products, Kits and Families

The optional testing sections include rows where companies can indicate if they'd like to have any of the optional tests offered in IEC TS 62257-9-5 conducted on their kits or components.

The optional testing tabs do not need to be filled out unless you want any of the optional tests to be completed. Please ask for our optional testing guidance document if you are interested in optional testing.

Note: Optional testing may increase testing costs and incur additional fees.

Optional Tests	Please fill in the applicable and relevant information below for the component. For rows that are not applicable to the component, enter "n/a"			
Components:	Light Point 1	Light Point 2	Light Point 3	Light Point 4
	3 W bulb	5 W tubelight	[Name / Model #3]	[Name / Model #4]
Would you like additional settings of this light point to be tested for light output? Note: The highest setting will already be tested by default.				
Would you like additional settings of this light point to be tested for power consumption? Note: Up to three settings (the highest, lowest, and one intermediate setting) will already be tested by default.				
Would you like this light point to be tested for light distribution? This test determines the full width half maximum angles and/or average light distribution characteristics for light points.				
Electronic Circuits				
Additional standby loss testing for products with multiple standby loss modes: Would you like the lab to repeat the standby loss test after reaching low-power mode(s)? (When lower standby loss measurements are used as inputs to the Energy Service Calculations, the Wh/day and runtimes estimated for the product may increase).				
Maximum solar operation efficiency measurement: Products that are designed to supply additional PV energy directly to daytime loads while bypassing the battery will receive a more accurate solar operation efficiency measurement with this test. Would you like the lab to conduct this test?				
Additional features / accessories / appliances				
Charging efficiency testing for appliances with internal batteries that charge from the main unit can be requested. Would you like the lab to test any of the appliances for charging efficiency?				
Additional ESC Profiles				
Companies may request additional specific energy service calculation (run time) scenarios be conducted for additional usage profiles. If you like additional ESC scenarios to be tested, describe the combinations.	Combination 1			

Recommendations

- Specify battery capacity ratings in Ah or mAh
- Don't leave any cells blank (unless they are greyed out in the template); write "n/a" if not applicable
- Make sure to list all differences, even if they don't directly affect performance or user experience (e.g. changes to number or type of LEDs, additional component suppliers, connector types, maximum power point tracking algorithm, changes to the PV module or junction box)
- By providing clear and accurate information in this form you will speed up the process of developing and reviewing the test plan and will avoid costly omissions that could require re-testing



Thank you

Please reach out to the test lab that you are coordinating with if you have any questions. Contact information for test labs in VeraSol's qualified test lab network can be found [here](#).