参考資料

TEST DATA OF LHP150F-42-Y

Regulated DC Power Supply
April 5, 2021

Approved by : Junya Kaneda
Design Manager

Prepared by : Yasushi Fukumura
Design Engineer

COSEL CO.,LTD.

COSEL

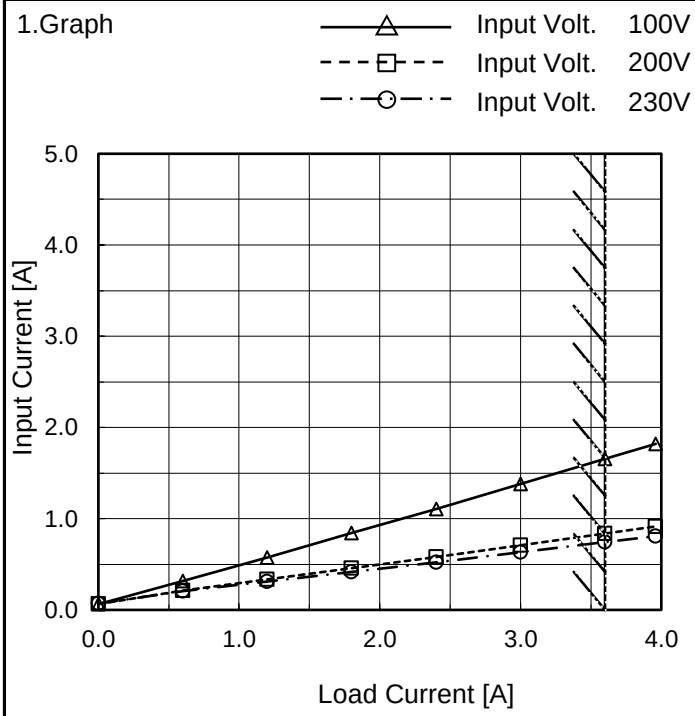
CONTENTS

COSEL

Model	LHP150F-42-Y
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.063	0.065	0.070
0.60	0.317	0.213	0.205
1.20	0.577	0.333	0.311
1.80	0.842	0.455	0.415
2.40	1.109	0.580	0.521
3.00	1.381	0.706	0.630
3.60	1.655	0.836	0.741
3.96	1.820	0.915	0.808
--	-	-	-
--	-	-	-
--	-	-	-

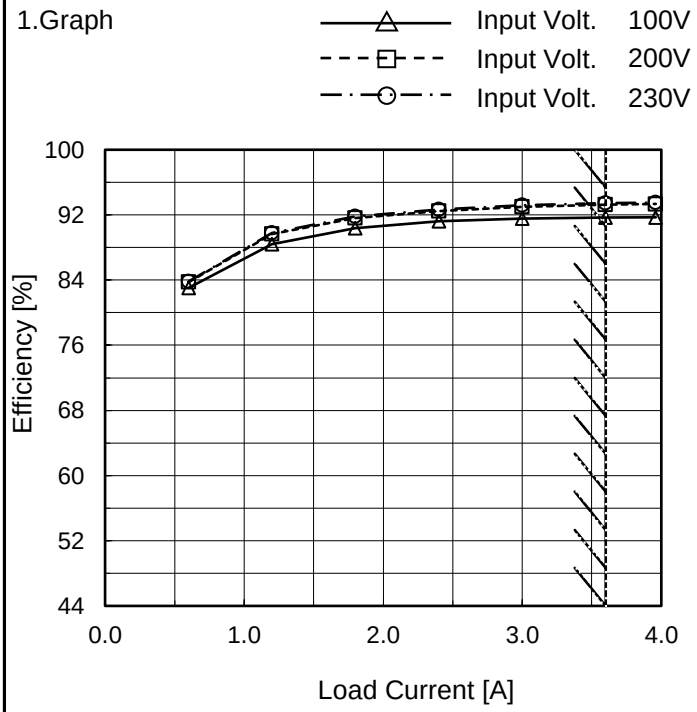
BC-11714

COSEL

Model	LHP150F-42-Y
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
0.60	83.0	83.7	83.8
1.20	88.4	89.6	89.8
1.80	90.4	91.6	91.8
2.40	91.2	92.4	92.7
3.00	91.6	93.0	93.2
3.60	91.7	93.2	93.4
3.96	91.7	93.3	93.5
--	-	-	-
--	-	-	-
--	-	-	-

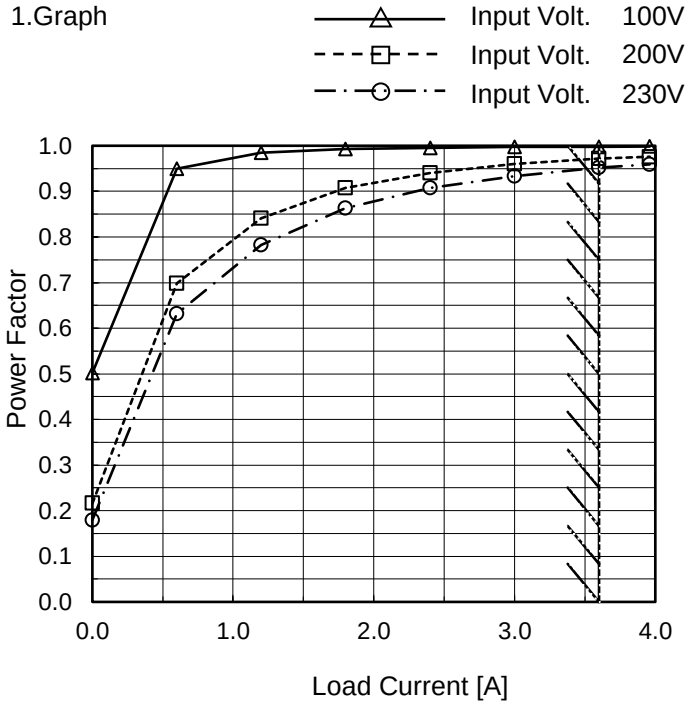
BC-11714

COSEL

Model	LHP150F-42-Y
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



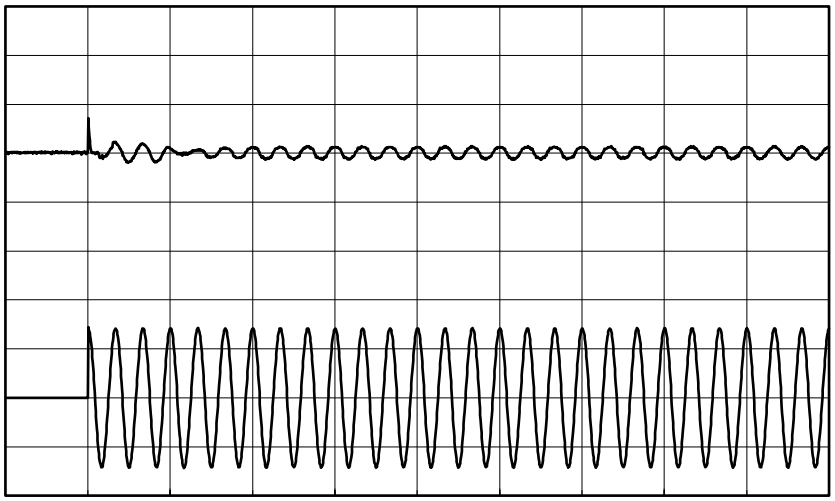
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.502	0.216	0.180
0.60	0.950	0.698	0.631
1.20	0.985	0.841	0.782
1.80	0.993	0.908	0.863
2.40	0.996	0.940	0.908
3.00	0.997	0.960	0.934
3.60	0.998	0.971	0.952
3.96	0.998	0.976	0.959
--	-	-	-
--	-	-	-
--	-	-	-

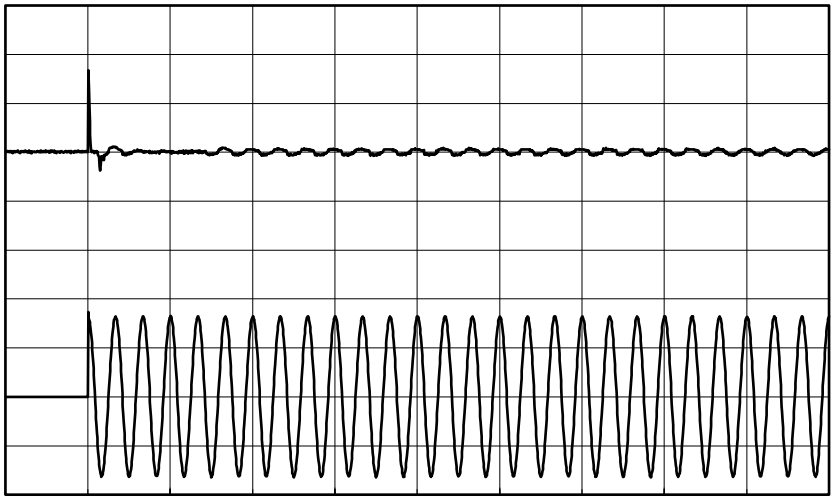
COSEL

Model	LHP150F-42-Y		
Item	Inrush Current	Temperature	25°C
		Testing Circuitry	Figure A
Object	———————		



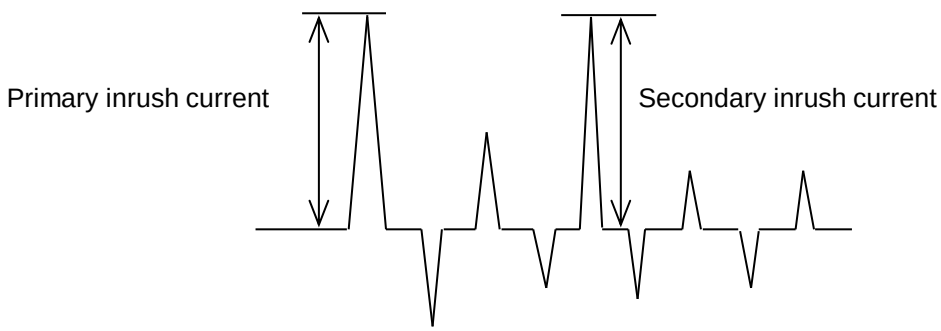
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
14.2 A
Secondary inrush current :
2.8 A



Input Voltage 230 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
33.3 A
Secondary inrush current :
1.7 A



COSEL

Model	LHP150F-42-Y		
Item	Leakage Current	Temperature	25°C
		Testing Circuitry	Figure C
Object	———————————		

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure C-1	Both phases	0.15	0.36	0.37	Operation
		One of phases	0.27	0.64	0.70	Stand by
IEC62368-1	Figure C-2	Both phases	0.13	0.34	0.35	Operation
		One of phases	0.25	0.64	0.67	Stand by
	Figure C-3	Both phases	0.13	0.33	0.34	Operation
		One of phases	0.25	0.62	0.65	Stand by

The value for "One of phases" is the reference value only.

2.Condition

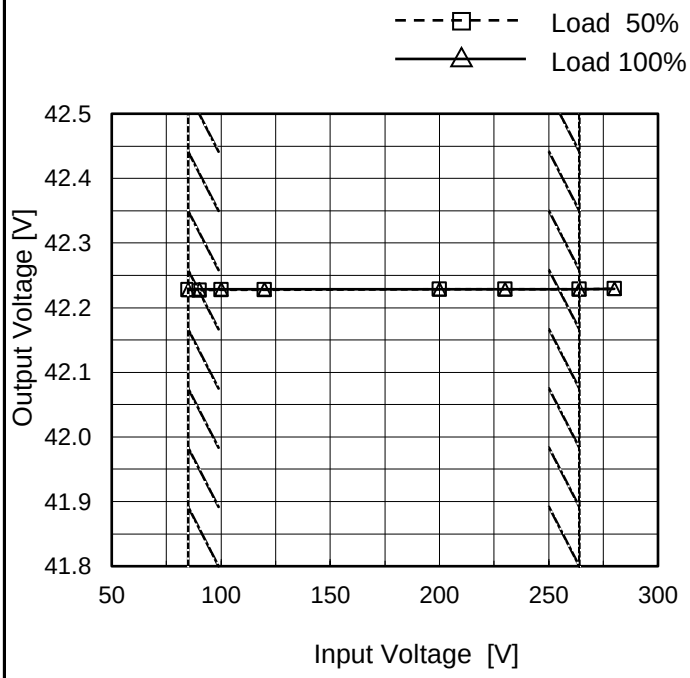
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

COSEL

Model	LHP150F-42-Y
Item	Line Regulation
Object	+42V3.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

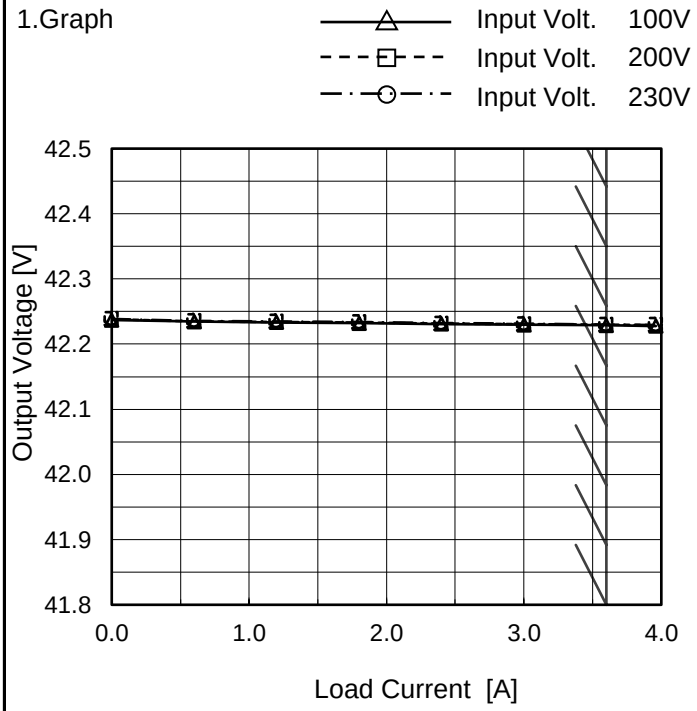
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	42.227	42.228
90	42.227	42.228
100	42.227	42.228
120	42.228	42.228
200	42.228	42.228
230	42.228	42.228
264	42.229	42.229
280	42.229	42.229
--	-	-

COSEL

Model	LHP150F-42-Y
Item	Load Regulation
Object	+42V3.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

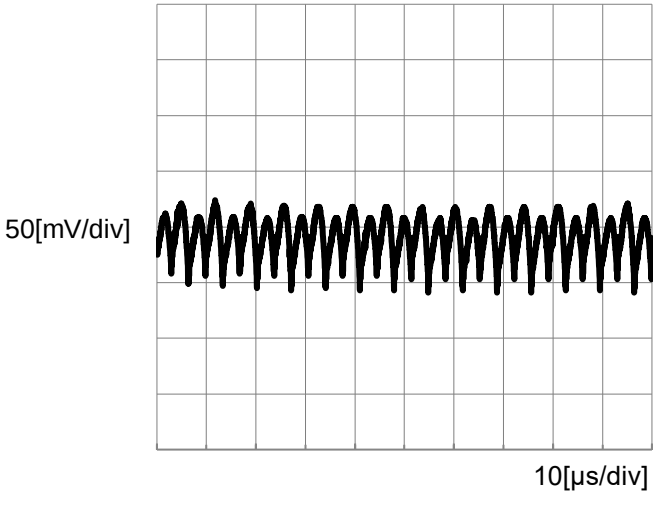
Load Current [A]	Output Voltage [V] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	42.237	42.238	42.239
0.60	42.234	42.235	42.236
1.20	42.233	42.234	42.235
1.80	42.232	42.233	42.234
2.40	42.231	42.232	42.232
3.00	42.230	42.231	42.231
3.60	42.229	42.230	42.230
3.96	42.228	42.229	42.229
--	--	--	--
--	--	--	--
--	--	--	--

Item	Ripple-Noise
Object	+42V3.6A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 230V
Load 100%



BC-11714

COSEL

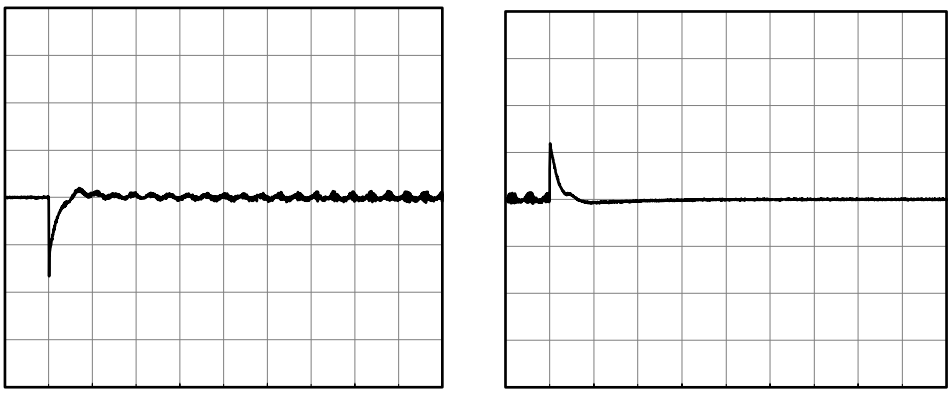
Model	LHP150F-42-Y		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+42V3.6A		

Input Volt. 230 V

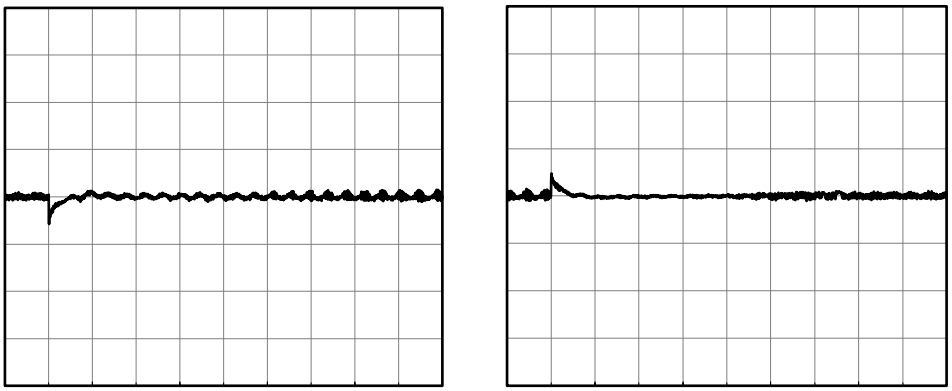
Cycle 1000 ms

Response. t1=t2=50μs. Typ

Load 0%(0A) ⟷
Load 100%(3.6A)



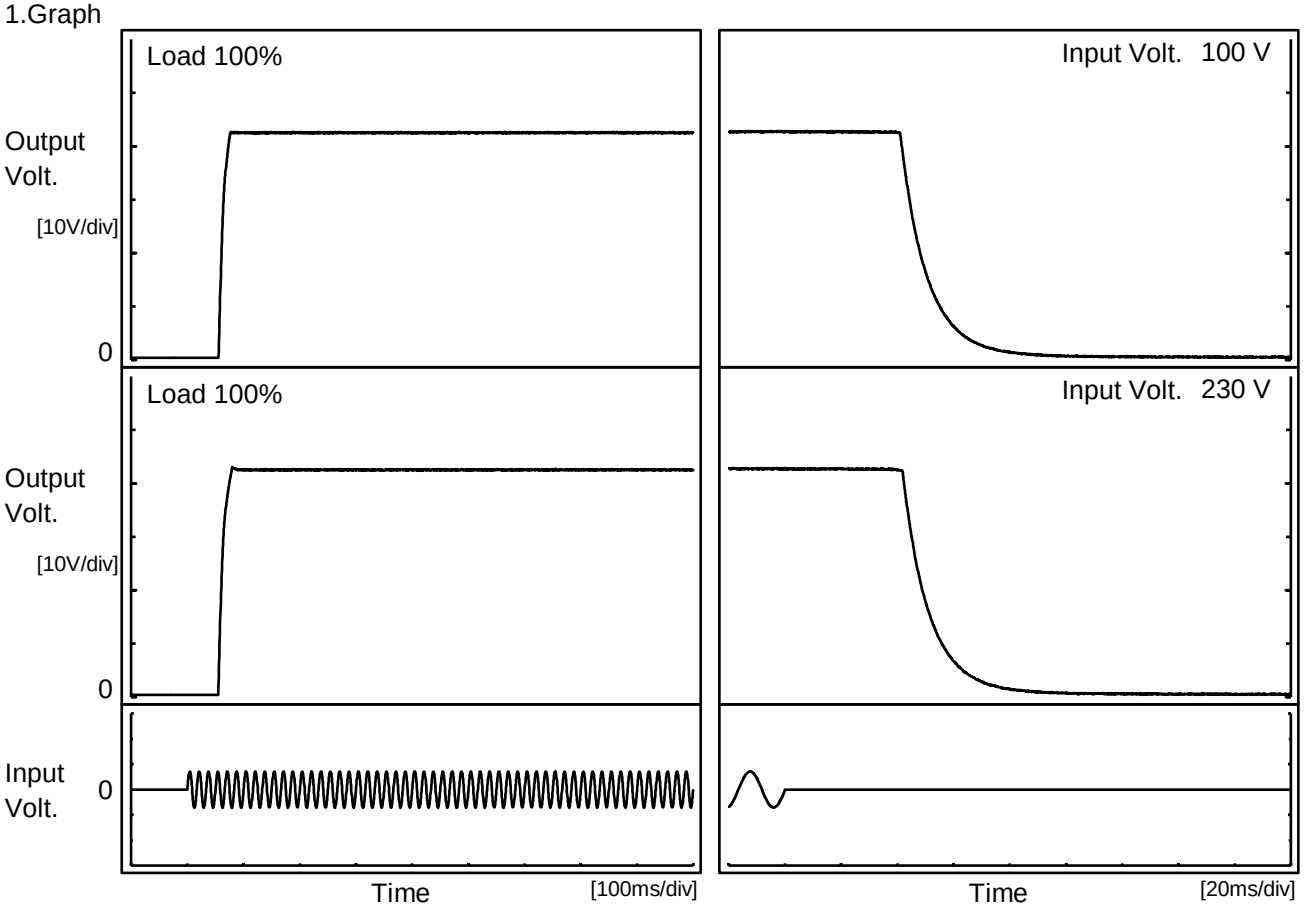
Load 50%(1.8A) ⟷
Load 100%(3.6A)



COSEL

Model	LHP150F-42-Y	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+42V3.6A	

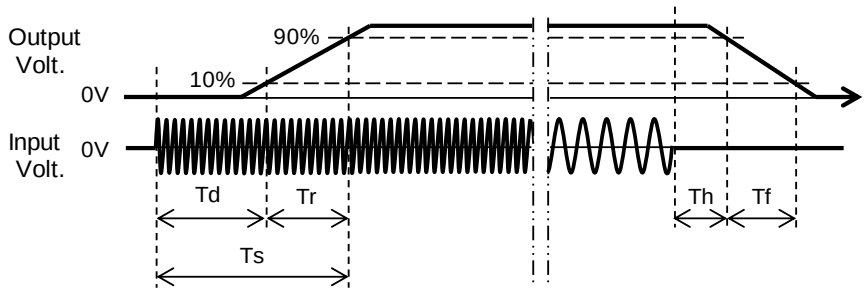
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	57.0	14.5	71.5	41.9	21.5
230 V	56.5	16.0	72.5	42.7	21.6

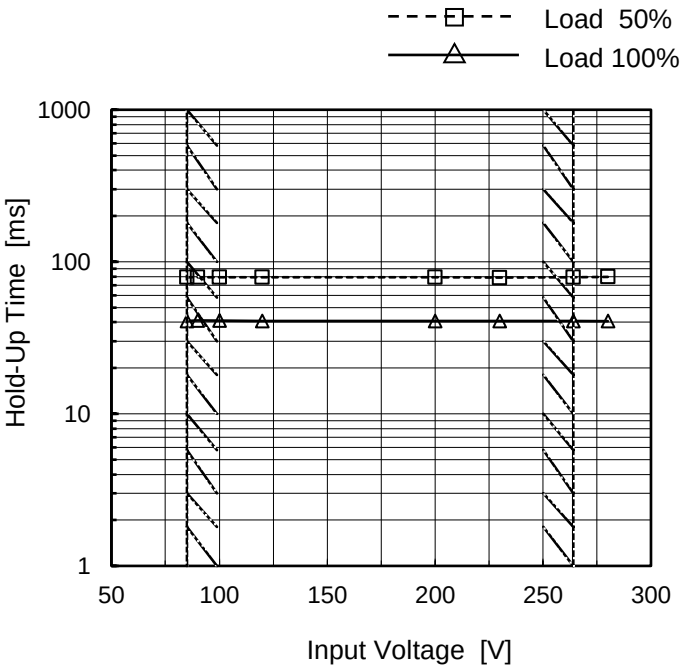


COSEL

Model	LHP150F-42-Y
Item	Hold-Up Time
Object	+42V3.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated input voltage.

2.Values

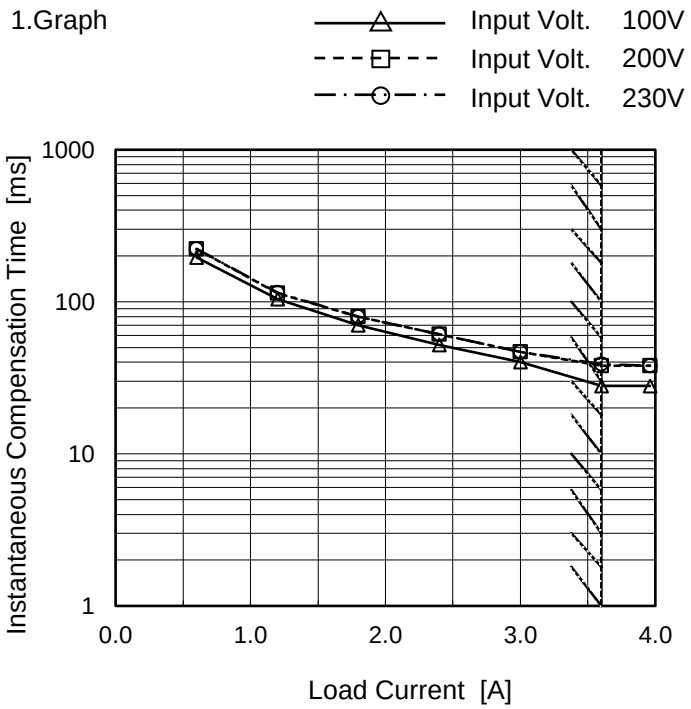
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	79	41
90	79	41
100	79	41
120	79	41
200	79	41
230	79	41
264	79	41
280	80	41
--	-	-

COSEL

Model	LHP150F-42-Y
Item	Instantaneous Interruption Compensation
Object	+42V3.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

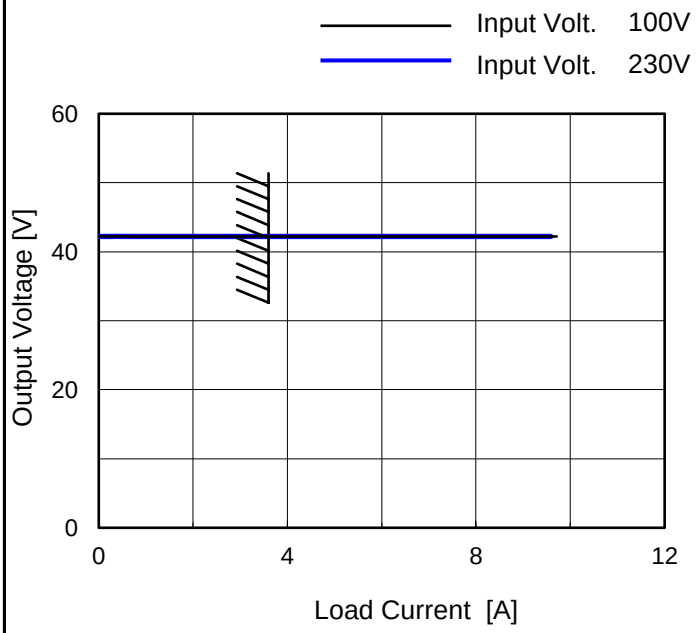
Load Current [A]	Time [ms] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
0.60	196	222	223
1.20	104	114	115
1.80	70	80	80
2.40	52	61	61
3.00	40	47	47
3.60	28	38	39
3.96	28	38	38
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LHP150F-42-Y
Item	Overcurrent Protection
Object	+42V3.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

Overcurrent protection is Hiccup mode.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
42	9.71	9.59
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	LHP150F-42-Y	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+42V3.6A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-10	42.071	42.072	42.072
25	42.233	42.233	42.233
50	42.308	42.308	42.308

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+42V3.6A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-10	75	76
25	76	76
50	76	77

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+42V3.6A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-10	52.08	52.36
25	53.56	53.56
50	54.75	54.75

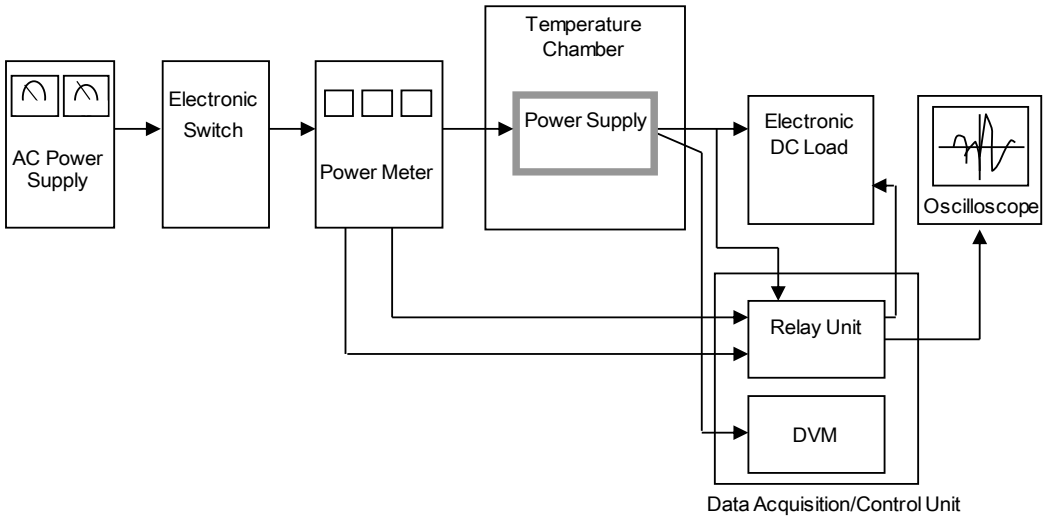
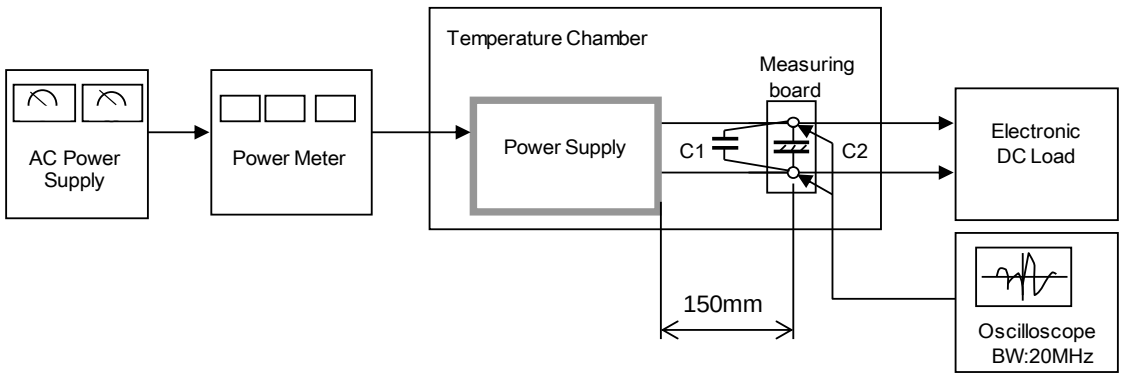


Figure A



C1= 0.1 μF
(Ceramic capacitor)

C2= 22 μF
(Electrolytic capacitor)

Figure B

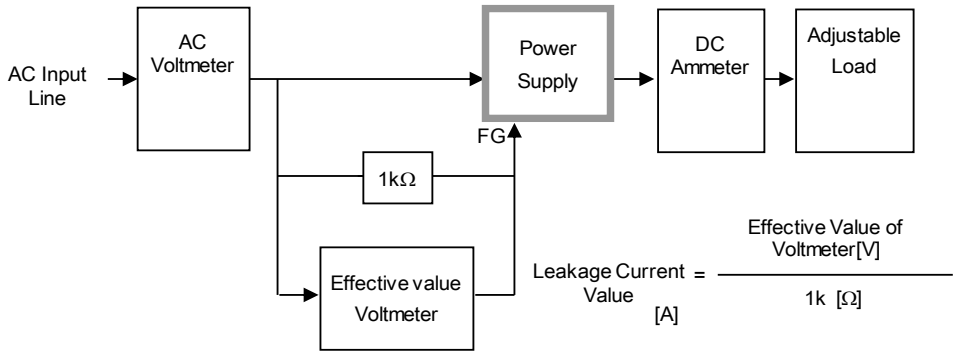


Figure C-1 (DEN-AN)

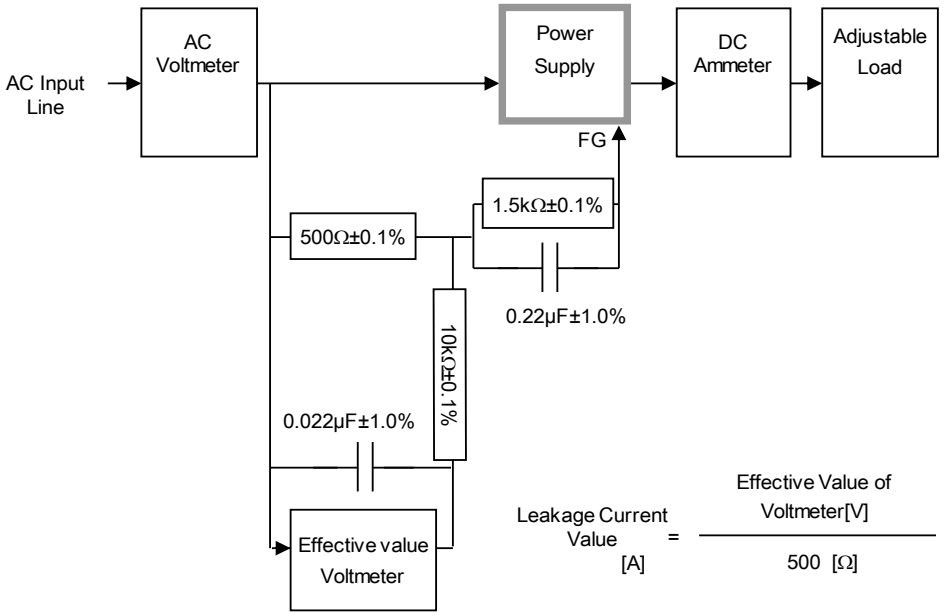


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

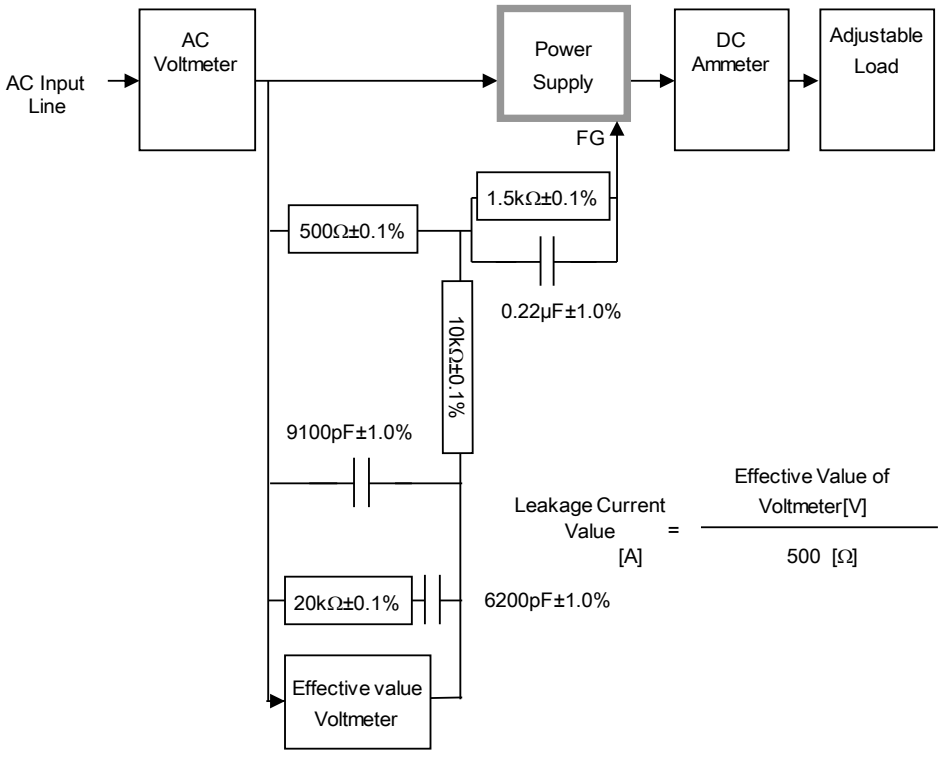


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)