



# TEST DATA OF LDA100W-30

(100V INPUT)

Regulated DC Power Supply  
Mar.4. 2005

Approved by : J.Uchida  
J.Uchida Design Manager

Prepared by : A.Kawai  
A.Kawai Design Engineer

**COSEL CO.,LTD.**



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Model	LDA100W-30																																																
Item	Input Current (by Load Current)	Temperature	25°C																																														
Object	Testing Circuitry	Figure A																																															
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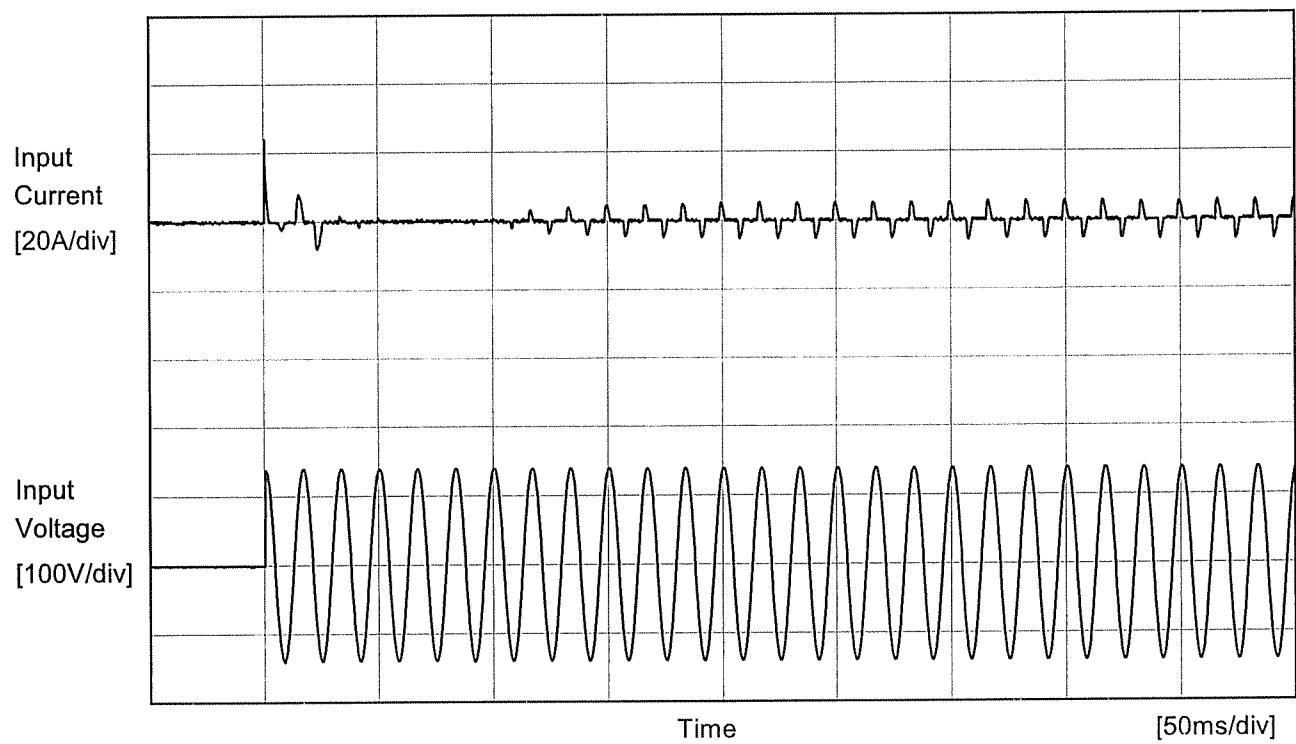
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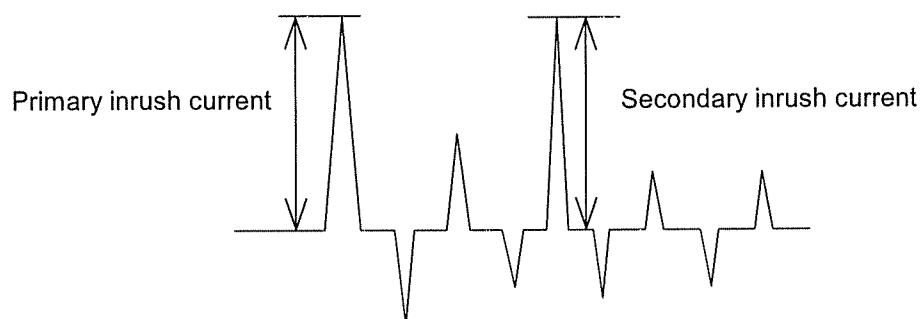
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Model	LDA100W-30	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



Input Voltage 100 V  
 Frequency 60 Hz  
 Load 100 %

Primary inrush current 23.9 A  
 Secondary inrush current 5.7 A



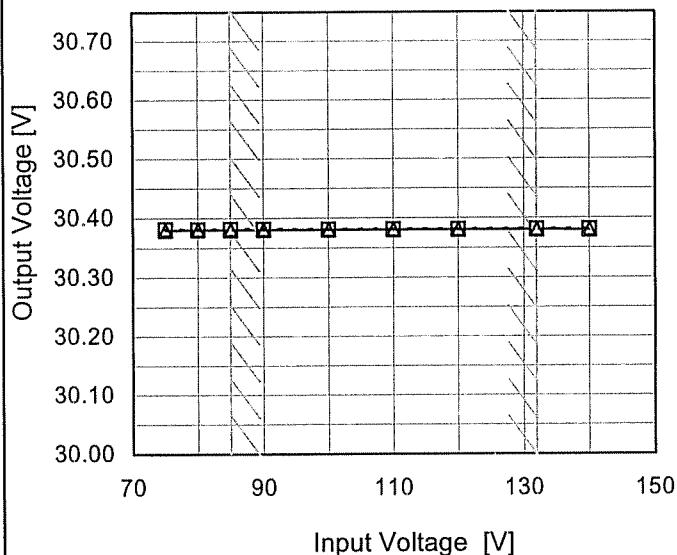
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Model	LDA100W-30
Item	Line Regulation
Object	+30V3.5A

Temperature 25°C  
 Testing Circuitry Figure A

## 1.Graph

---□--- Load 50%  
 —△— Load 100%



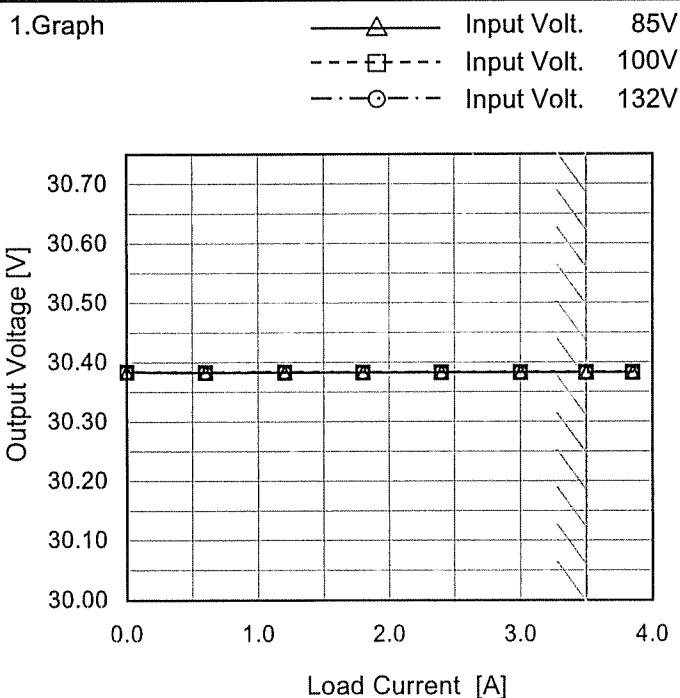
Note: Slanted line shows the range of the rated input voltage.

## 2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	30.382	30.380
80	30.382	30.381
85	30.382	30.381
90	30.382	30.381
100	30.382	30.381
110	30.381	30.381
120	30.381	30.381
132	30.381	30.381
140	30.381	30.380

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Model	LDA100W-30
Item	Load Regulation
Object	+30V3.5A

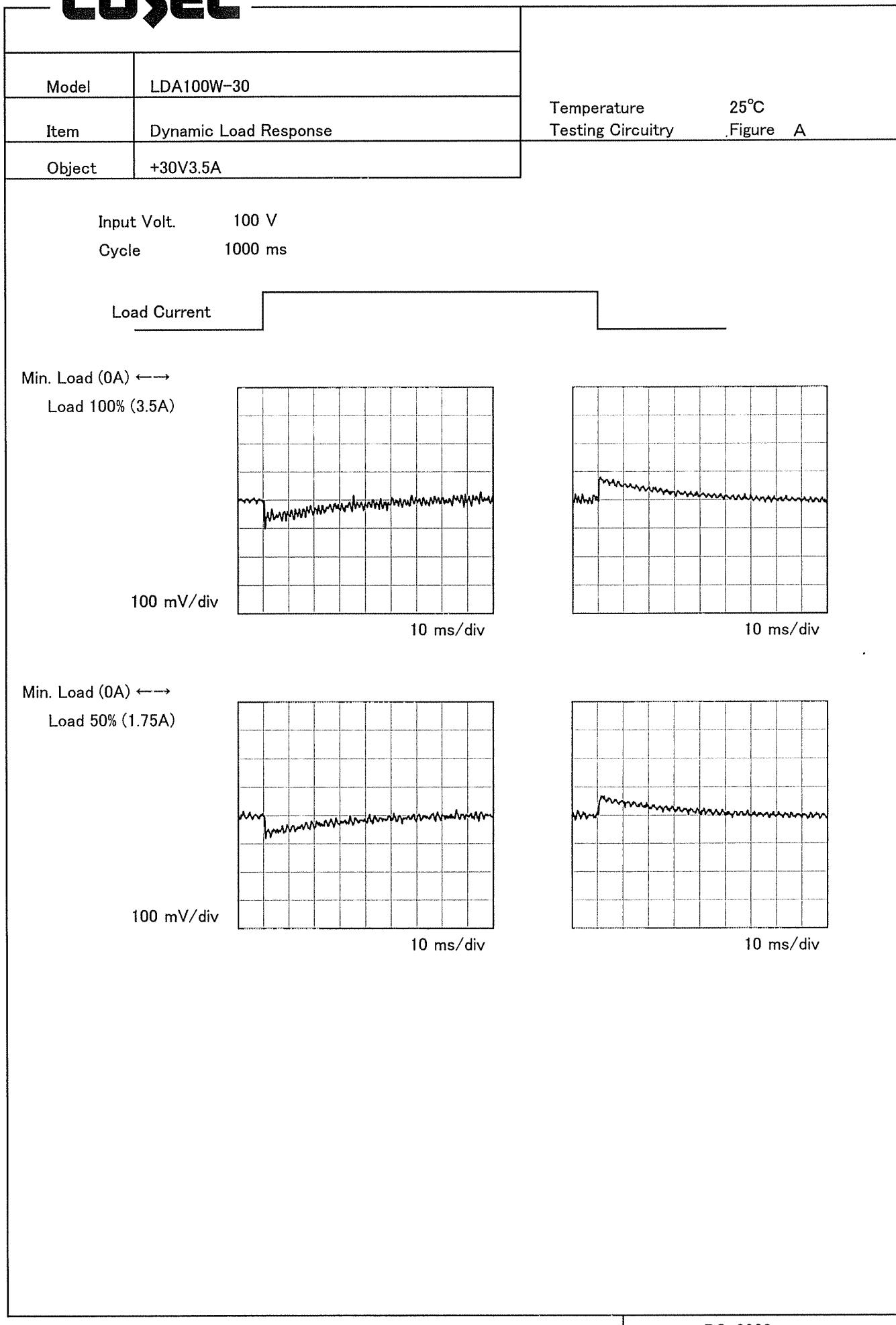


Note: Slanted line shows the range of the rated load current.

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	30.384	30.384	30.384
0.60	30.383	30.383	30.383
1.20	30.383	30.383	30.383
1.80	30.383	30.383	30.383
2.40	30.383	30.383	30.383
3.00	30.383	30.383	30.383
3.50	30.383	30.383	30.383
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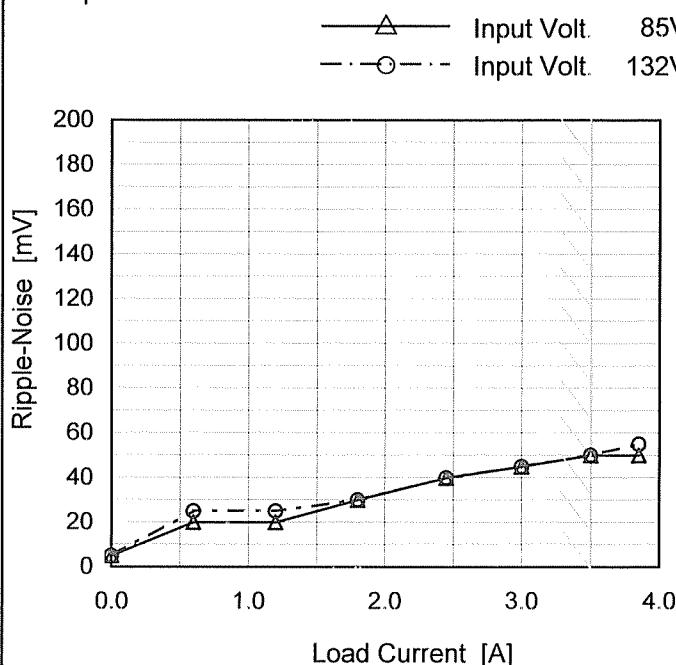
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<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 200 mV, and the X-axis ranges from 0.0 to 4.0 A. Two curves are plotted: one for Input Volt. 85V (solid line with triangles) and one for Input Volt. 132V (dashed line with circles). Both curves show a slight increase in ripple voltage as load current increases.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 85V)</th> <th>Ripple Voltage [mV] (Input Volt. 132V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>5</td><td>5</td></tr> <tr><td>0.60</td><td>15</td><td>15</td></tr> <tr><td>1.20</td><td>20</td><td>20</td></tr> <tr><td>1.80</td><td>25</td><td>25</td></tr> <tr><td>2.40</td><td>30</td><td>25</td></tr> <tr><td>3.00</td><td>30</td><td>30</td></tr> <tr><td>3.50</td><td>40</td><td>30</td></tr> <tr><td>3.85</td><td>40</td><td>35</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>			Load Current [A]	Ripple Voltage [mV] (Input Volt. 85V)	Ripple Voltage [mV] (Input Volt. 132V)	0.00	5	5	0.60	15	15	1.20	20	20	1.80	25	25	2.40	30	25	3.00	30	30	3.50	40	30	3.85	40	35	--	-	-	--	-	-	--	-	-		
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<p>Measured by 20 MHz Oscilloscope. Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>T1: Due to AC Input Line T2: Due to Switching</p> <p>Ripple [mVp-p]</p> <p>T1</p> <p>T2</p> <p>Fig. Complex Ripple Wave Form</p>																																								

**COSEL**

Model	LDA100W-30
Item	Ripple-Noise
Object	+30V3.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



Measured by 20 MHz Oscilloscope.

Ripple-Noise is shown as p-p in the figure below.

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

## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	5	5
0.60	20	25
1.20	20	25
1.80	30	30
2.45	40	40
3.00	45	45
3.50	50	50
3.85	50	55
--	-	-
--	-	-
--	-	-

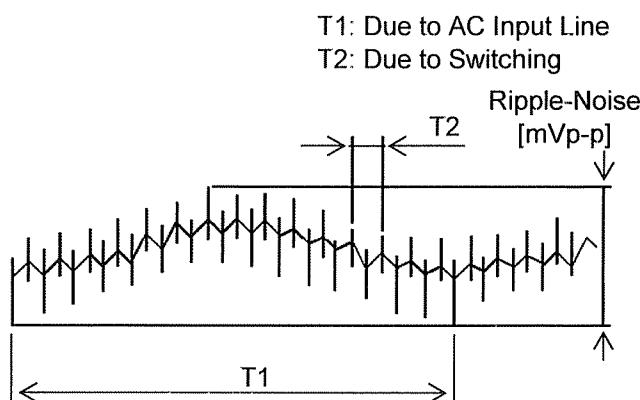
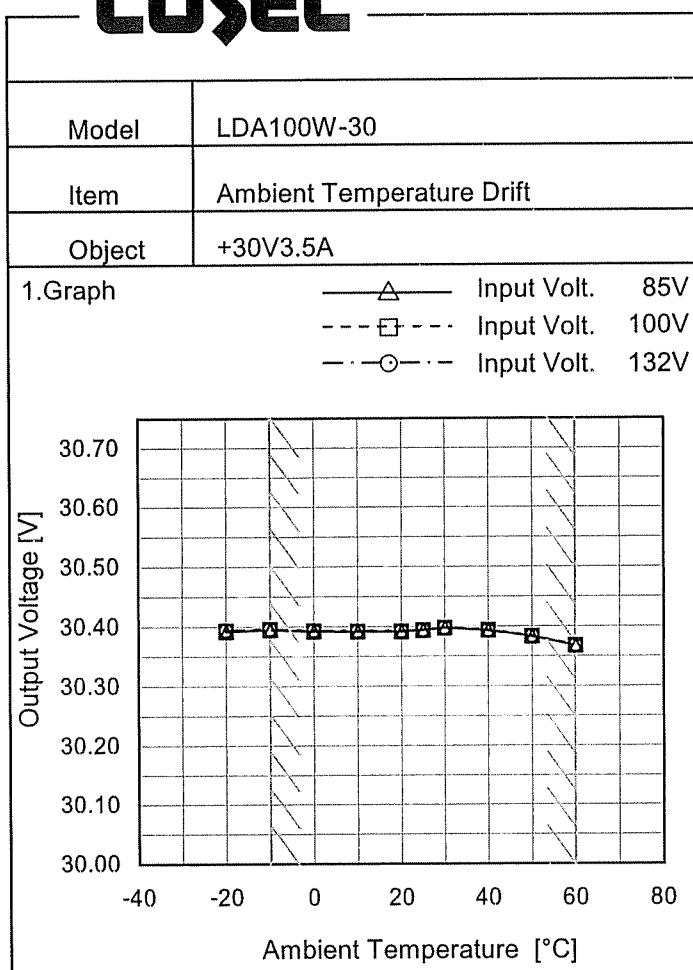


Fig. Complex Ripple Wave Form

**COSEL**

Model      LDA100W-30 Item      Ripple Voltage (by Ambient Temp.) Object    +30V3.5A	Testing Circuitry    Figure A																																						
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<p>1. Graph</p> <p>Ripple Voltage [mV]</p> <p>Ambient Temperature [°C]</p> <p>Input Volt.      100V</p>																																							
		<p>Measured by 20 MHz Oscilloscope.</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>																																					

**COSEL**


Testing Circuitry Figure A

## 2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	30.392	30.393	30.394
-10	30.395	30.395	30.395
0	30.392	30.393	30.393
10	30.392	30.392	30.392
20	30.392	30.392	30.392
25	30.394	30.394	30.394
30	30.397	30.397	30.398
40	30.394	30.394	30.393
50	30.383	30.384	30.383
60	30.368	30.368	30.368
--	-	-	-

Note: Slanted line shows the range of the rated ambient temperature.



Model	LDA100W-30	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+30V3.5A	

### 1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -10 - 60°C

Input Voltage : 85 - 132V

Load Current : 0 - 3.5A

\* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

### 2. Values

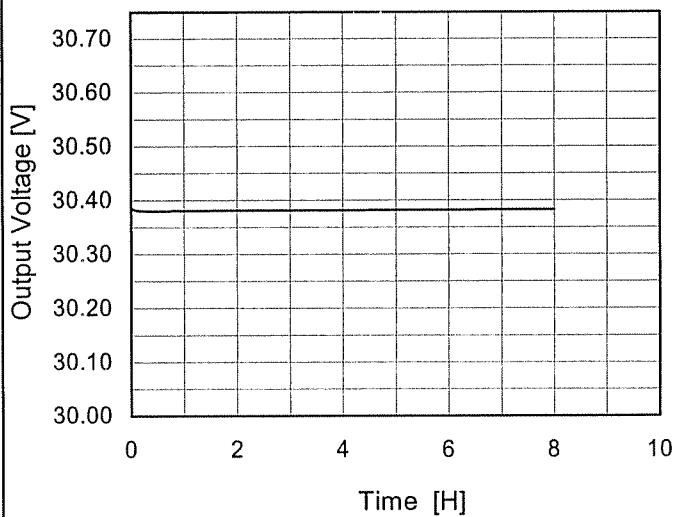
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	132	0	30.396	±17	±0.1
Minimum Voltage	60	85	3.5	30.363		

**COSEL**

Model	LDA100W-30
Item	Time Lapse Drift
Object	+30V3.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1.Graph



## 2.Values

Time since start [H]	Output Voltage [V]
0.0	30.387
0.5	30.380
1.0	30.381
2.0	30.381
3.0	30.382
4.0	30.382
5.0	30.382
6.0	30.382
7.0	30.383
8.0	30.383

COSEL

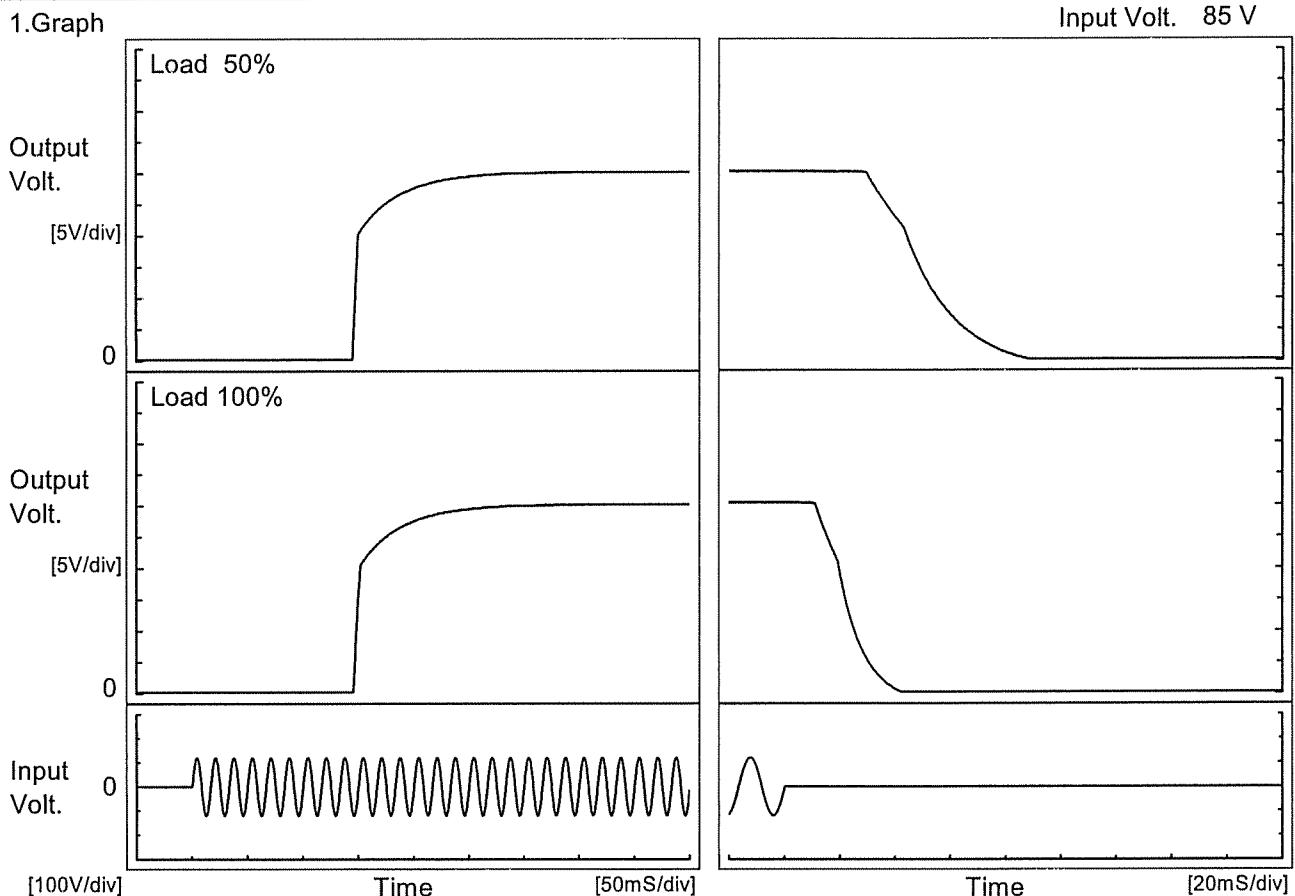
Model LDA100W-30

Item Rise and Fall Time

Object +30V3.5A

Temperature 25°C  
Testing Circuitry Figure A

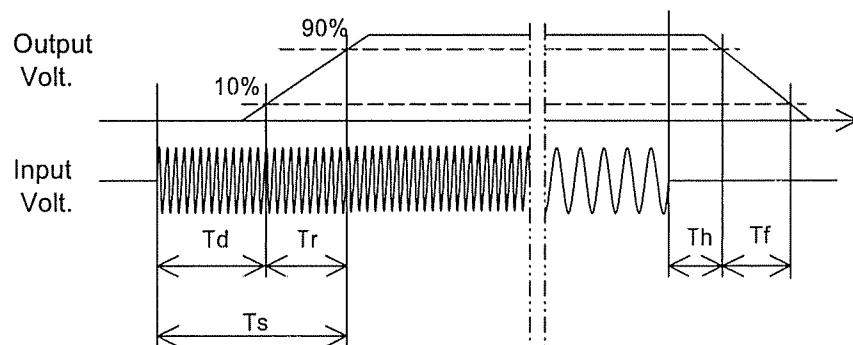
## 1. Graph



## 2. Values

[mS]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		145.8	48.3	194.1	33.2	38.2
100 %		146.5	48.8	195.3	13.3	20.1



COSEL

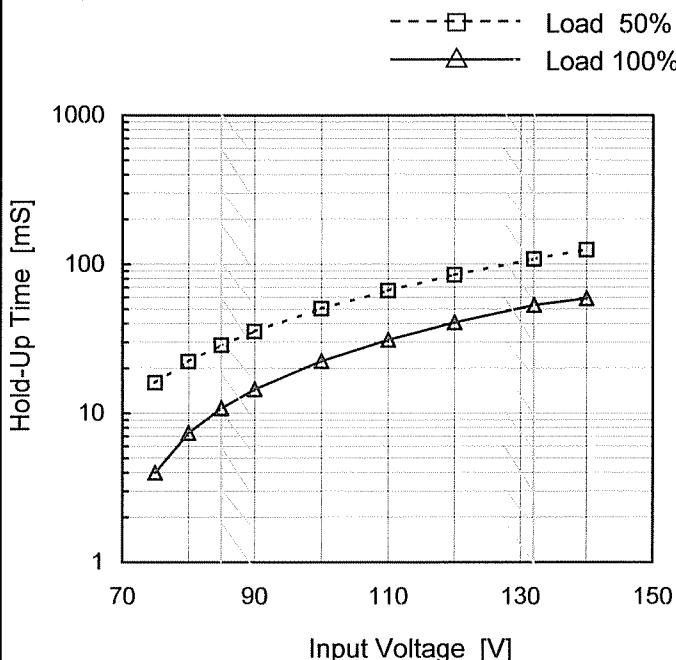
Model LDA100W-30

Item Hold-Up Time

Object +30V3.5A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	16	4
80	22	7
85	29	11
90	36	15
100	50	22
110	67	31
120	85	41
132	109	53
140	125	59

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.

COSEL

Model	LDA100W-30																																																						
Item	Instantaneous Interruption Compensation	Temperature Testing Circuitry	25°C Figure A																																																				
Object	+30V3.5A																																																						
1.Graph	<p>—△— Input Volt. 85V      - - -□- - Input Volt. 100V      - - ○ - - Input Volt. 132V</p>	<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Time [ms]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.60</td><td>75</td><td>124</td><td>280</td></tr> <tr><td>1.20</td><td>36</td><td>67</td><td>165</td></tr> <tr><td>1.80</td><td>26</td><td>42</td><td>112</td></tr> <tr><td>2.40</td><td>18</td><td>34</td><td>79</td></tr> <tr><td>3.00</td><td>11</td><td>26</td><td>62</td></tr> <tr><td>3.50</td><td>10</td><td>18</td><td>54</td></tr> <tr><td>3.85</td><td>3</td><td>17</td><td>45</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Load Current [A]	Time [ms]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	-	-	-	0.60	75	124	280	1.20	36	67	165	1.80	26	42	112	2.40	18	34	79	3.00	11	26	62	3.50	10	18	54	3.85	3	17	45	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated load current.

COSEL

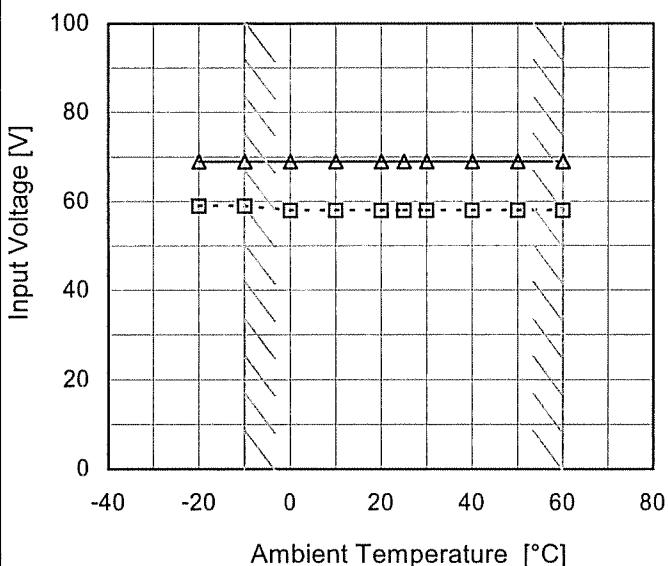
Model LDA100W-30

Item Minimum Input Voltage  
for Regulated Output Voltage

Object +30V3.5A

## 1. Graph

---□--- Load 50%  
—△— Load 100%



Note: Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure A

## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	59	69
-10	59	69
0	58	69
10	58	69
20	58	69
25	58	69
30	58	69
40	58	69
50	58	69
60	58	69
--	-	-

COSEL

Model	LDA100W-30
Item	Overcurrent Protection
Object	+30V3.5A
1.Graph	<p>Input Volt. 85V Input Volt. 100V Input Volt. 132V</p> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
30.0	4.38	4.34	4.37
28.5	4.39	4.36	4.41
27.0	4.41	4.39	4.45
24.0	4.44	4.44	4.52
21.0	4.50	4.51	4.60
18.0	4.57	4.58	4.66
15.0	4.63	4.67	4.72
12.0	4.68	4.72	4.82
9.0	4.74	4.79	4.91
6.0	4.79	4.84	4.95
3.0	4.74	4.74	4.76
0.0	4.55	4.51	4.57



Model	LDA100W-30	Testing Circuitry Figure A																																																					
Item	Overvoltage Protection																																																						
Object	+30V3.5A																																																						
1.Graph	<p style="text-align: center;"> <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; border-radius: 50%; margin-right: 5px;"></span> Input Volt. 85V  <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; border-top: none; border-left: none; border-radius: 50%; margin-right: 5px;"></span> Input Volt. 100V  <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; border-top: none; border-left: none; border-radius: 50%; border-bottom: none; margin-right: 5px;"></span> Input Volt. 132V         </p> <p style="text-align: center;">Operating Point [V]</p> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: center;">Load 0%</p>	2.Values																																																					
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Note: Slanted line shows the range of the rated ambient temperature.

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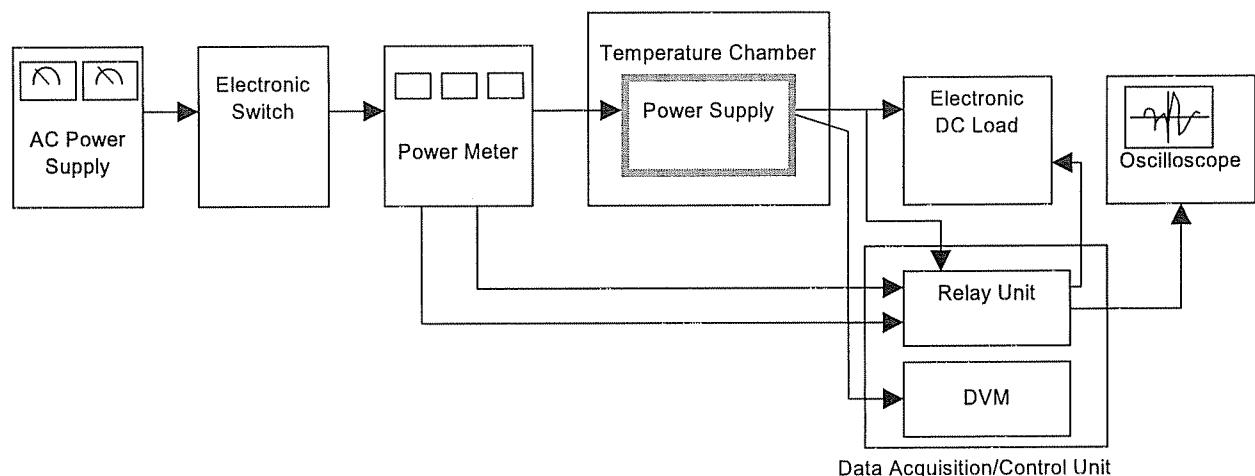


Figure A

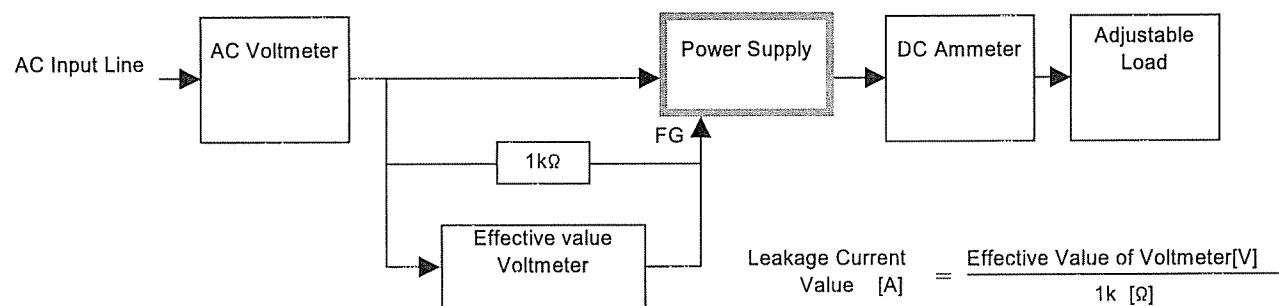


Figure B ( DEN-AN )

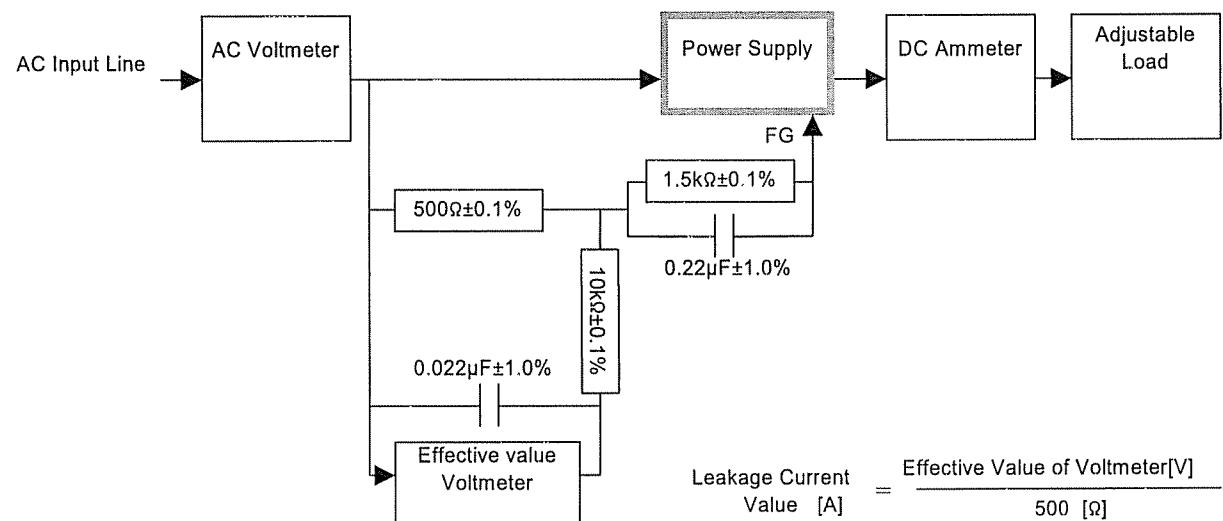


Figure B ( IEC60950 )