



# TEST DATA OF LDA100W-48

(200V INPUT)

Regulated DC Power Supply  
Mar.4. 2005

Approved by : Jun Uchida  
J.Uchida Design Manager

Prepared by : A. Kawai  
A.Kawai Design Engineer

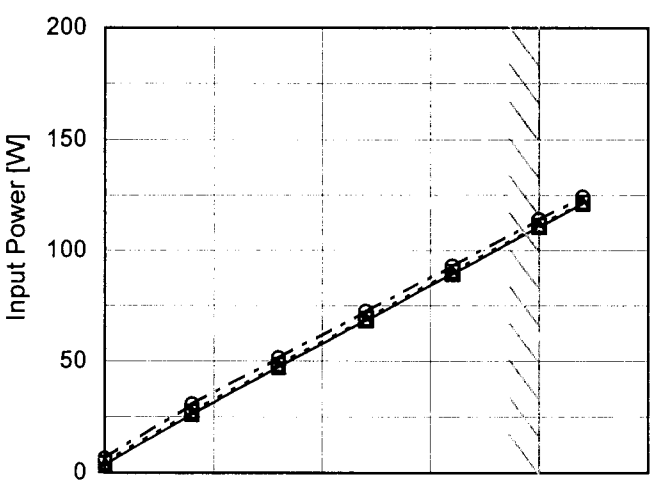
**COSEL CO.,LTD.**

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Model		LDA100W-48																																																				
Item		Input Current (by Load Current)																																																				
Object																																																						
1.Graph		<div><div><div>—△—</div><div>Input Volt. 170V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>---○---</div><div>Input Volt. 264V</div></div></div> <p>Input Current [A]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																																				
2.Values		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.0</td><td>0.068</td><td>0.076</td><td>0.089</td></tr><tr><td>0.4</td><td>0.332</td><td>0.328</td><td>0.297</td></tr><tr><td>0.8</td><td>0.554</td><td>0.516</td><td>0.448</td></tr><tr><td>1.2</td><td>0.780</td><td>0.704</td><td>0.597</td></tr><tr><td>1.6</td><td>1.007</td><td>0.896</td><td>0.752</td></tr><tr><td>2.0</td><td>1.230</td><td>1.092</td><td>0.908</td></tr><tr><td>2.2</td><td>1.341</td><td>1.194</td><td>0.993</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><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Input Current [A]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.0	0.068	0.076	0.089	0.4	0.332	0.328	0.297	0.8	0.554	0.516	0.448	1.2	0.780	0.704	0.597	1.6	1.007	0.896	0.752	2.0	1.230	1.092	0.908	2.2	1.341	1.194	0.993	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model		LDA100W-48
Item		Efficiency (by Input Voltage)
Object		

1.Graph

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□

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Load 50%

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△

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Load 100%

Efficiency [%]

100

96

92

88

84

80

76

72

140

180

220

260

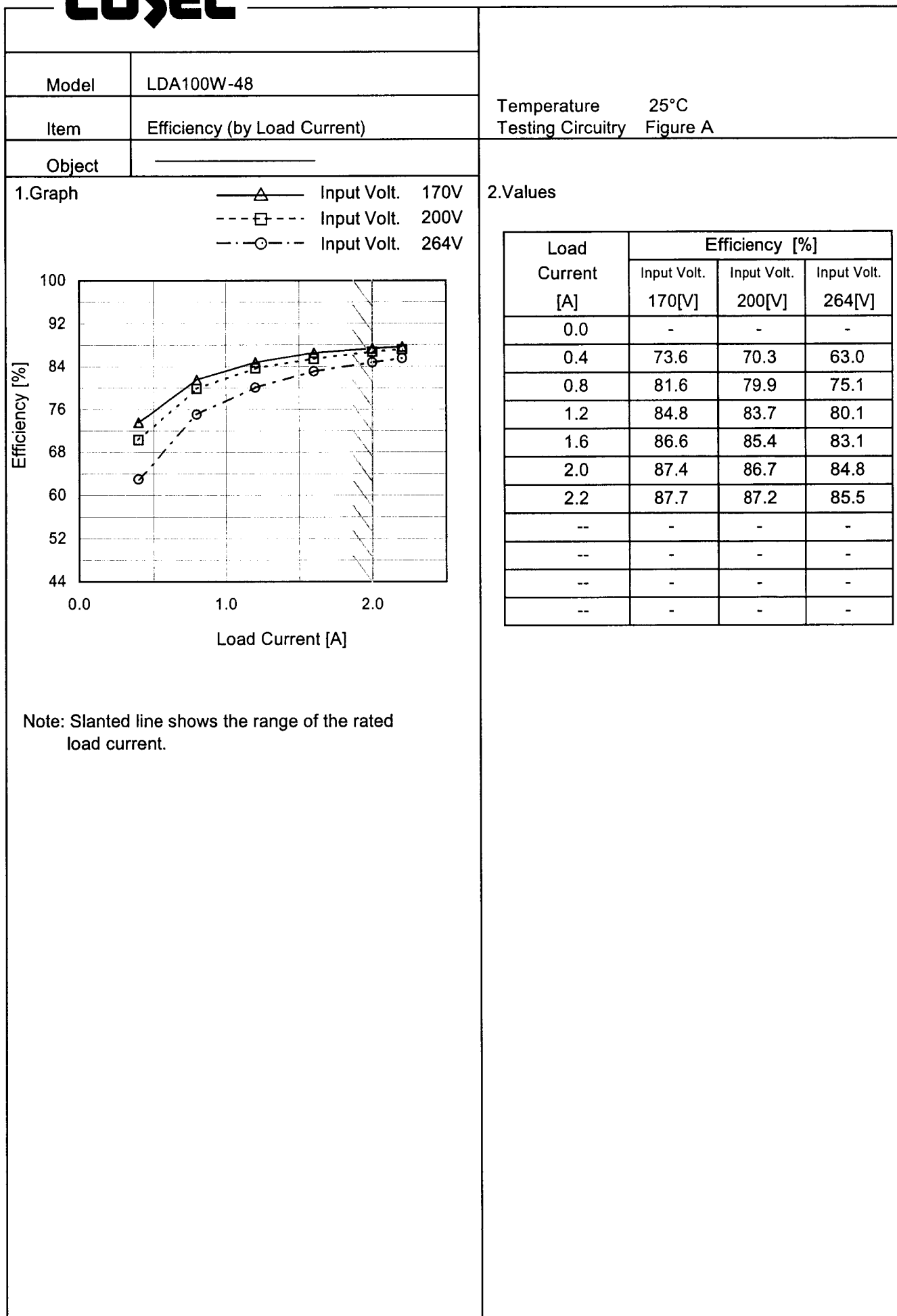
300

Input Voltage [V]

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

2.Values

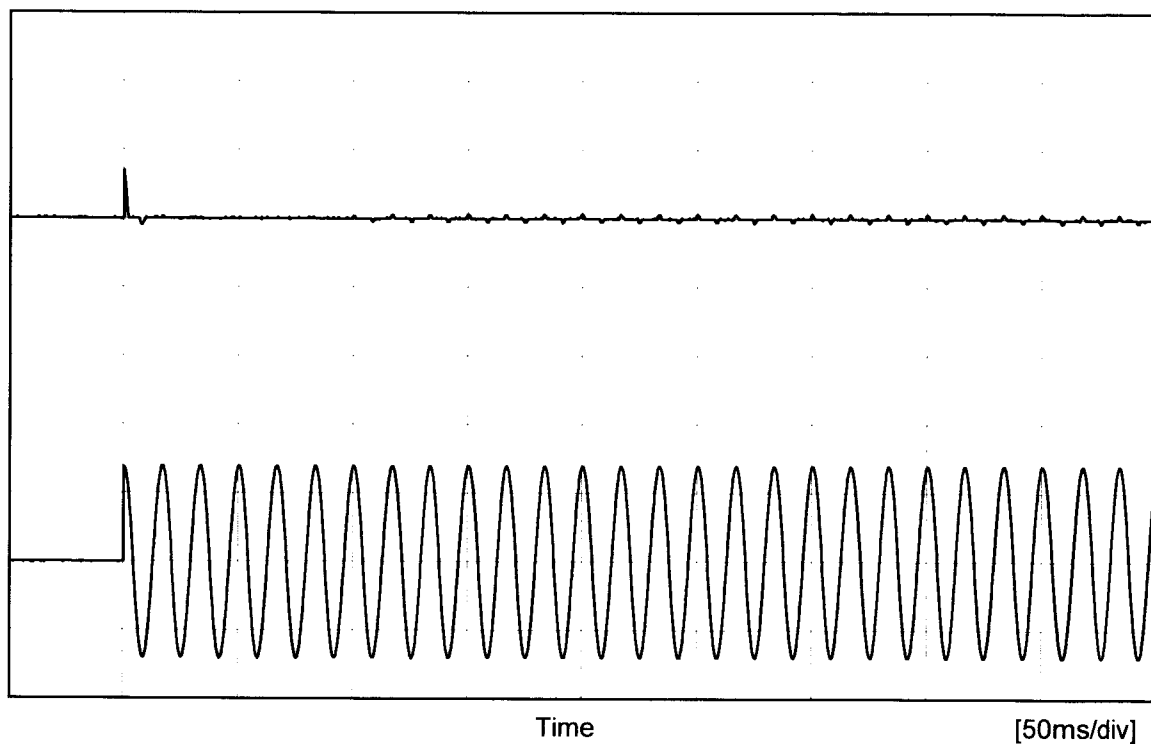
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
150	84.2	87.4
160	84.3	87.5
170	83.9	87.5
180	83.3	87.5
200	82.2	87.0
220	81.1	86.4
240	79.7	85.8
264	78.2	85.4
280	77.2	84.7



Model		LDA100W-48	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		_____	

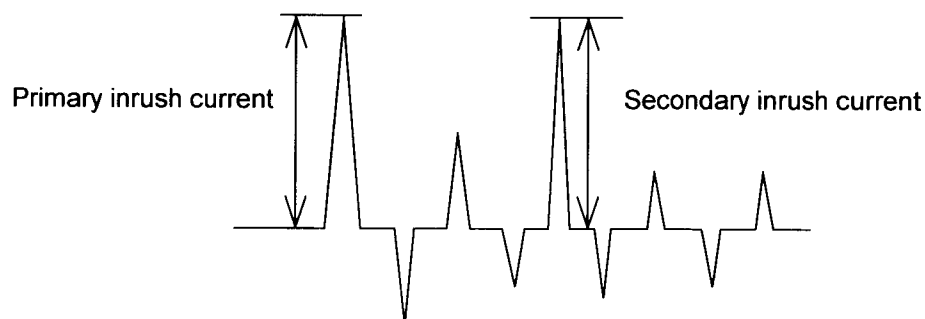
Input  
Current  
[50A/div]

Input  
Voltage  
[200V/div]



Input Voltage 200 V  
Frequency 60 Hz  
Load 100 %

Primary inrush current 34.2  
Secondary inrush current 3.2 A

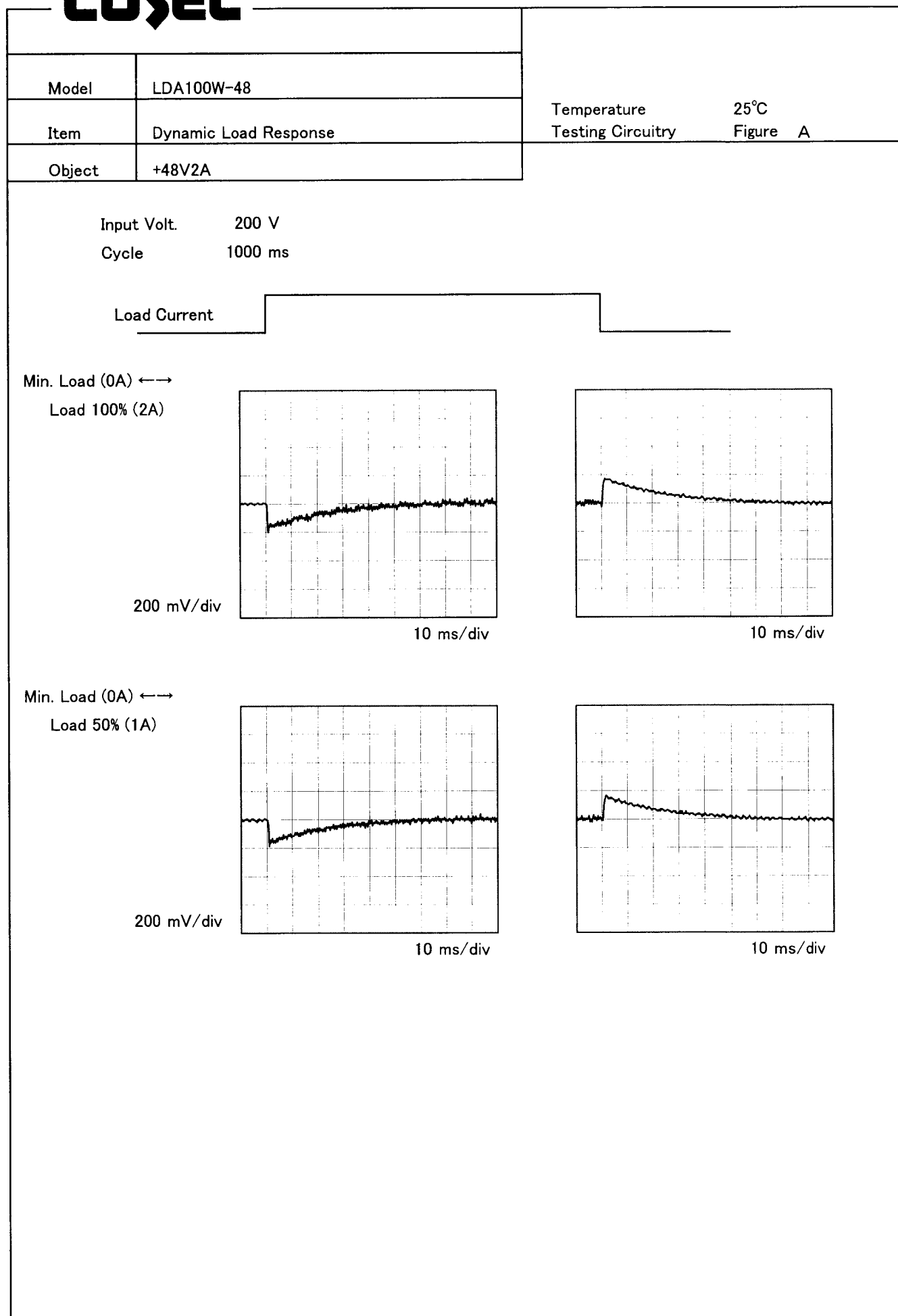


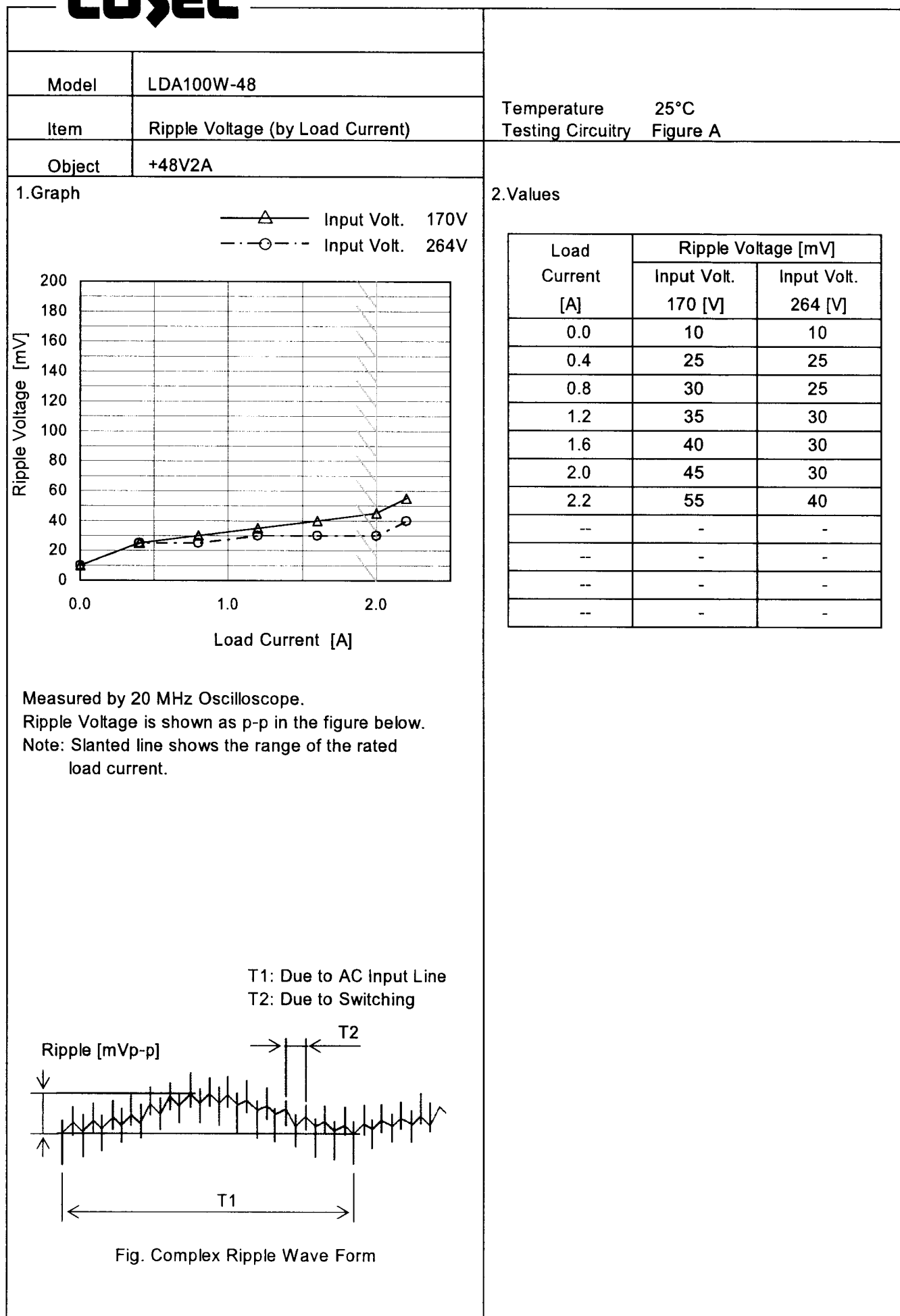
Model	LDA100W-48																																
Item	Line Regulation	Temperature	25°C																														
Object	+48V2A	Testing Circuitry	Figure A																														
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<div><div><div>---□---</div><div>Load 50%</div></div><div><div>---△---</div><div>Load 100%</div></div></div> <table><thead><tr><th>Input Voltage [V]</th><th>Output Voltage [V] Load 50%</th><th>Output Voltage [V] Load 100%</th></tr></thead><tbody><tr><td>150</td><td>48.452</td><td>48.452</td></tr><tr><td>160</td><td>48.452</td><td>48.452</td></tr><tr><td>170</td><td>48.452</td><td>48.452</td></tr><tr><td>180</td><td>48.452</td><td>48.451</td></tr><tr><td>200</td><td>48.452</td><td>48.450</td></tr><tr><td>220</td><td>48.451</td><td>48.449</td></tr><tr><td>240</td><td>48.450</td><td>48.448</td></tr><tr><td>264</td><td>48.449</td><td>48.446</td></tr><tr><td>280</td><td>48.448</td><td>48.444</td></tr></tbody></table>		Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%	150	48.452	48.452	160	48.452	48.452	170	48.452	48.452	180	48.452	48.451	200	48.452	48.450	220	48.451	48.449	240	48.450	48.448	264	48.449	48.446	280	48.448	48.444		
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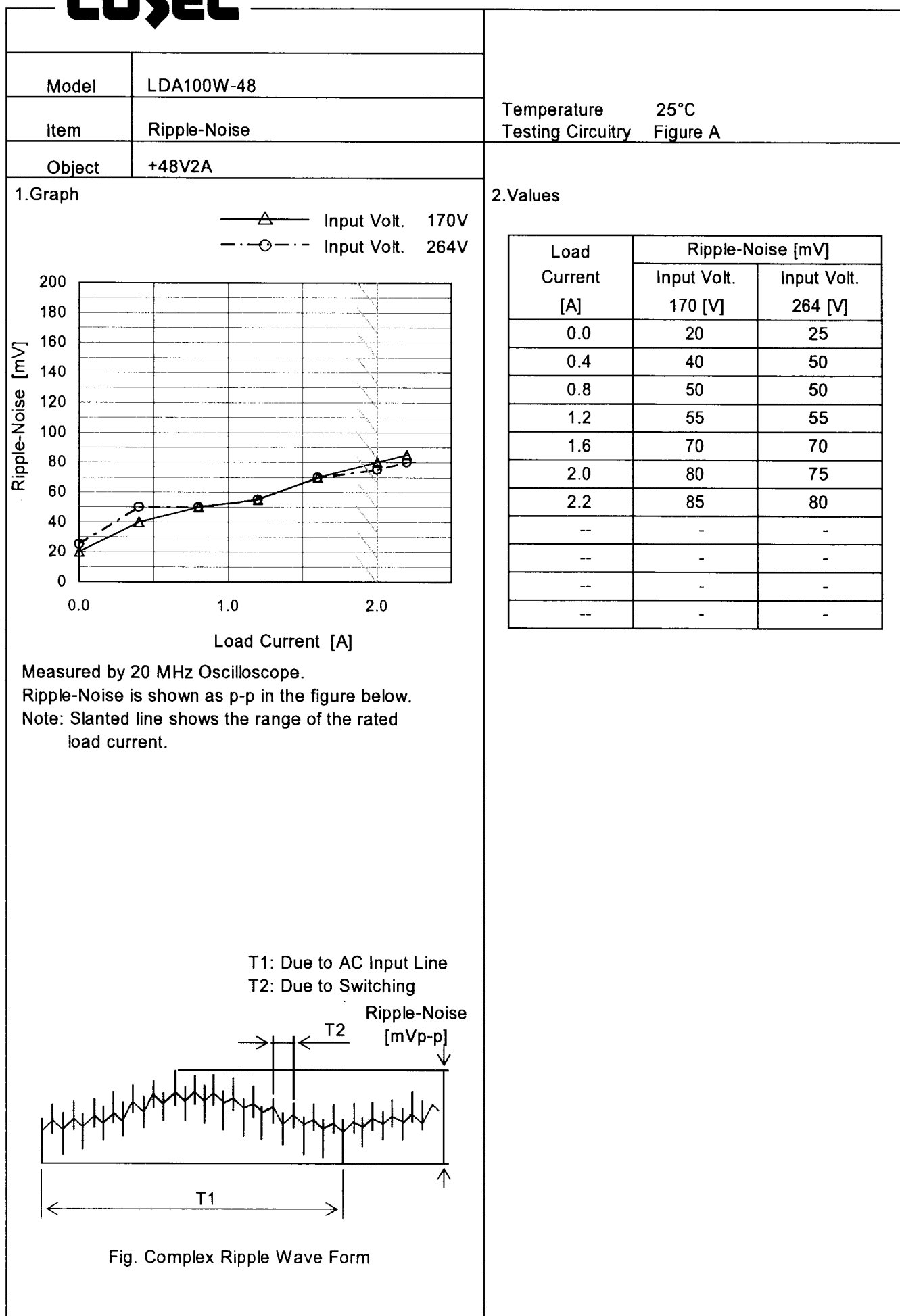


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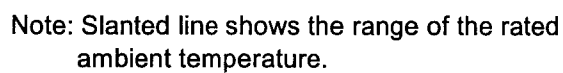




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Object	+48V2A																																								
1.Graph		2.Values																																							
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>Measured by 20 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-20</td><td>190</td><td>160</td></tr><tr><td>-10</td><td>110</td><td>80</td></tr><tr><td>0</td><td>95</td><td>65</td></tr><tr><td>10</td><td>75</td><td>50</td></tr><tr><td>20</td><td>50</td><td>50</td></tr><tr><td>25</td><td>50</td><td>30</td></tr><tr><td>30</td><td>40</td><td>30</td></tr><tr><td>40</td><td>30</td><td>25</td></tr><tr><td>50</td><td>20</td><td>15</td></tr><tr><td>60</td><td>10</td><td>10</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-20	190	160	-10	110	80	0	95	65	10	75	50	20	50	50	25	50	30	30	40	30	40	30	25	50	20	15	60	10	10	--	-	-
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40	30	25																																							
50	20	15																																							
60	10	10																																							
--	-	-																																							

### Testing Circuitry Figure A

## 2.Values



Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	48.538	48.537	48.533
-10	48.523	48.522	48.518
0	48.510	48.507	48.504
10	48.498	48.496	48.491
20	48.486	48.483	48.480
25	48.482	48.480	48.476
30	48.480	48.478	48.473
40	48.460	48.458	48.452
50	48.432	48.429	48.423
60	48.402	48.399	48.391
--	-	-	-



		Testing Circuitry Figure A
Model	LDA100W-48	
Item	Output Voltage Accuracy	
Object	+48V2A	

### 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 : 170 - 264V

Load Current : 0 - 2A

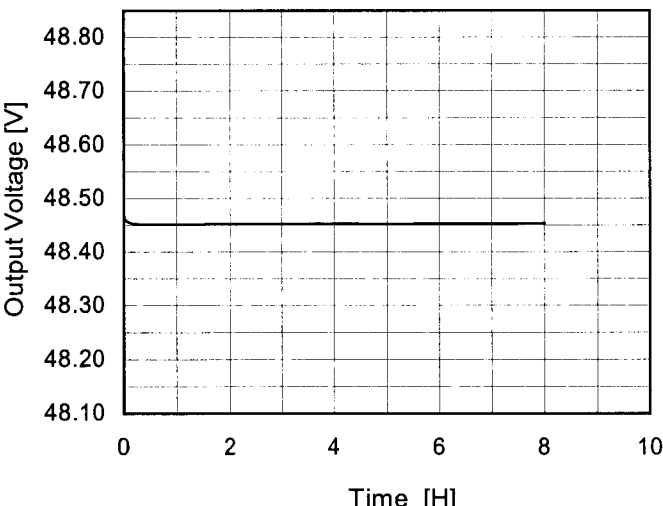
\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

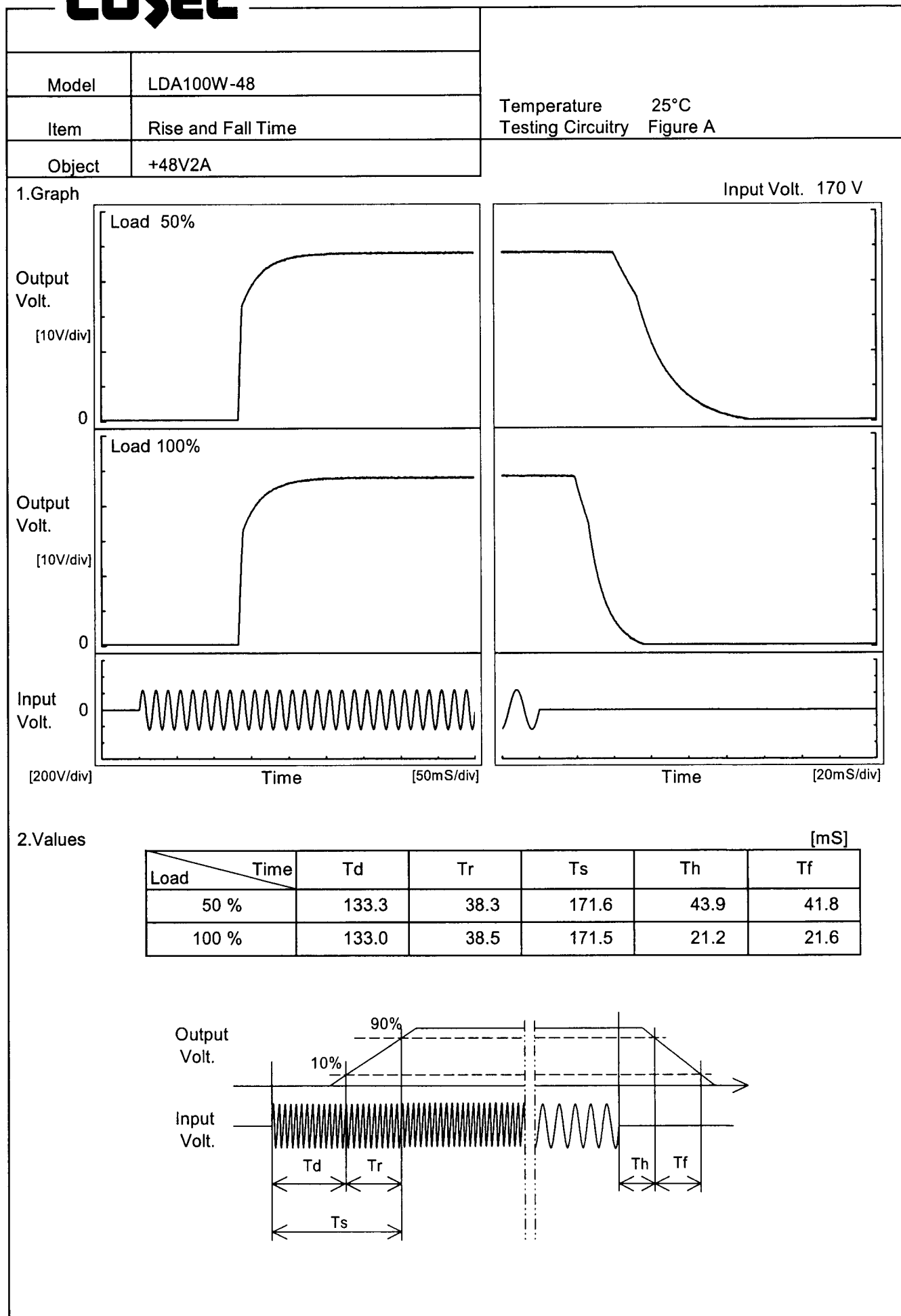
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	-10	170	0	48.526	±71	±0.1
Minimum Voltage	60	264	2	48.384		

**COSEL**

Model	LDA100W-48																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+48V2A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 200V</p><p>Load 100%</p></div>		<table><thead><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr></thead><tbody><tr><td>0.0</td><td>48.469</td></tr><tr><td>0.5</td><td>48.452</td></tr><tr><td>1.0</td><td>48.452</td></tr><tr><td>2.0</td><td>48.452</td></tr><tr><td>3.0</td><td>48.452</td></tr><tr><td>4.0</td><td>48.453</td></tr><tr><td>5.0</td><td>48.453</td></tr><tr><td>6.0</td><td>48.453</td></tr><tr><td>7.0</td><td>48.453</td></tr><tr><td>8.0</td><td>48.454</td></tr></tbody></table>		Time since start [H]	Output Voltage [V]	0.0	48.469	0.5	48.452	1.0	48.452	2.0	48.452	3.0	48.452	4.0	48.453	5.0	48.453	6.0	48.453	7.0	48.453	8.0	48.454
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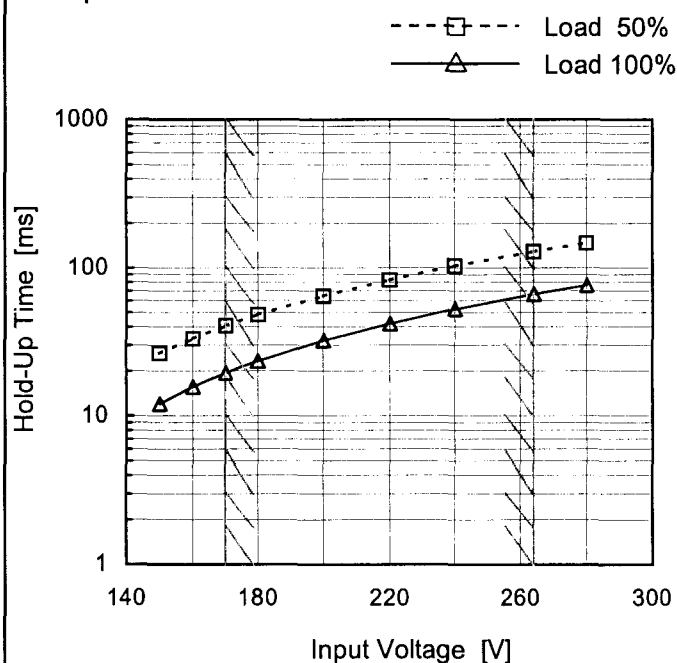
Model LDA100W-48

Item Hold-Up Time

Object +48V2A

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%
150	26	12
160	33	16
170	41	19
180	48	23
200	65	32
220	83	42
240	103	53
264	129	67
280	147	77

Model		LDA100W-48																																																				
Item		Instantaneous Interruption Compensation																																																				
Object		+48V2A																																																				
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>170V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>-○-</div><div>Input Volt.</div><div>264V</div></div></div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.4</td><td>92</td><td>151</td><td>283</td></tr><tr><td>0.8</td><td>52</td><td>85</td><td>159</td></tr><tr><td>1.2</td><td>38</td><td>56</td><td>112</td></tr><tr><td>1.6</td><td>25</td><td>41</td><td>85</td></tr><tr><td>2.0</td><td>22</td><td>31</td><td>70</td></tr><tr><td>2.2</td><td>14</td><td>31</td><td>62</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><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Time [ms]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.0	-	-	-	0.4	92	151	283	0.8	52	85	159	1.2	38	56	112	1.6	25	41	85	2.0	22	31	70	2.2	14	31	62	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
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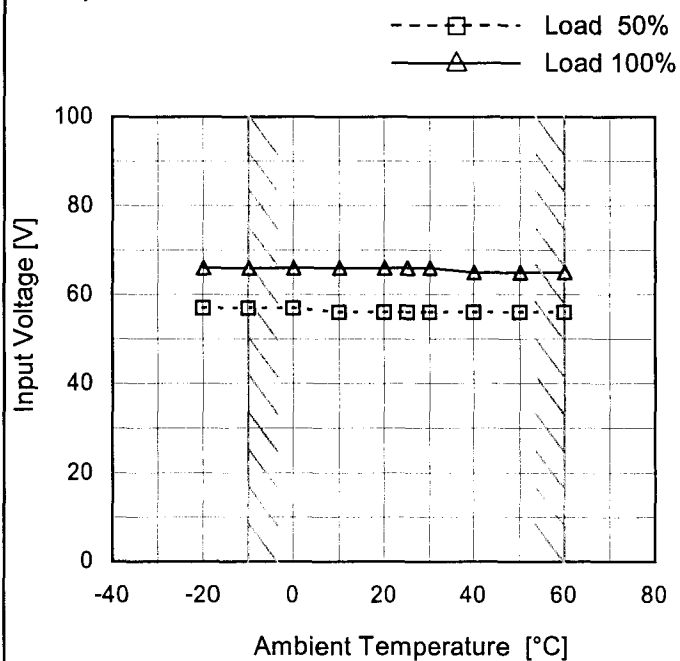
Model LDA100W-48

Item Minimum Input Voltage  
for Regulated Output Voltage

Object +48V2A

Testing Circuitry Figure A

## 1. Graph



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

## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	57	66
-10	57	66
0	57	66
10	56	66
20	56	66
25	56	66
30	56	66
40	56	65
50	56	65
60	56	65
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BC-0992

Model		LDA100W-48																																																				
Item		Overvoltage Protection																																																				
Object		+48V2A																																																				
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>170V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>264V</div></div></div> <p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Operating Point [V]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>-20</td><td>58.27</td><td>58.22</td><td>58.22</td></tr><tr><td>-10</td><td>58.75</td><td>58.80</td><td>58.80</td></tr><tr><td>0</td><td>59.33</td><td>59.33</td><td>59.39</td></tr><tr><td>10</td><td>59.86</td><td>59.86</td><td>59.86</td></tr><tr><td>20</td><td>60.40</td><td>60.40</td><td>60.40</td></tr><tr><td>25</td><td>60.58</td><td>60.58</td><td>60.58</td></tr><tr><td>30</td><td>60.93</td><td>60.87</td><td>60.93</td></tr><tr><td>40</td><td>61.45</td><td>61.45</td><td>61.45</td></tr><tr><td>50</td><td>61.86</td><td>61.98</td><td>61.98</td></tr><tr><td>60</td><td>62.39</td><td>62.39</td><td>62.39</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Operating Point [V]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	-20	58.27	58.22	58.22	-10	58.75	58.80	58.80	0	59.33	59.33	59.39	10	59.86	59.86	59.86	20	60.40	60.40	60.40	25	60.58	60.58	60.58	30	60.93	60.87	60.93	40	61.45	61.45	61.45	50	61.86	61.98	61.98	60	62.39	62.39	62.39	--	-	-	-
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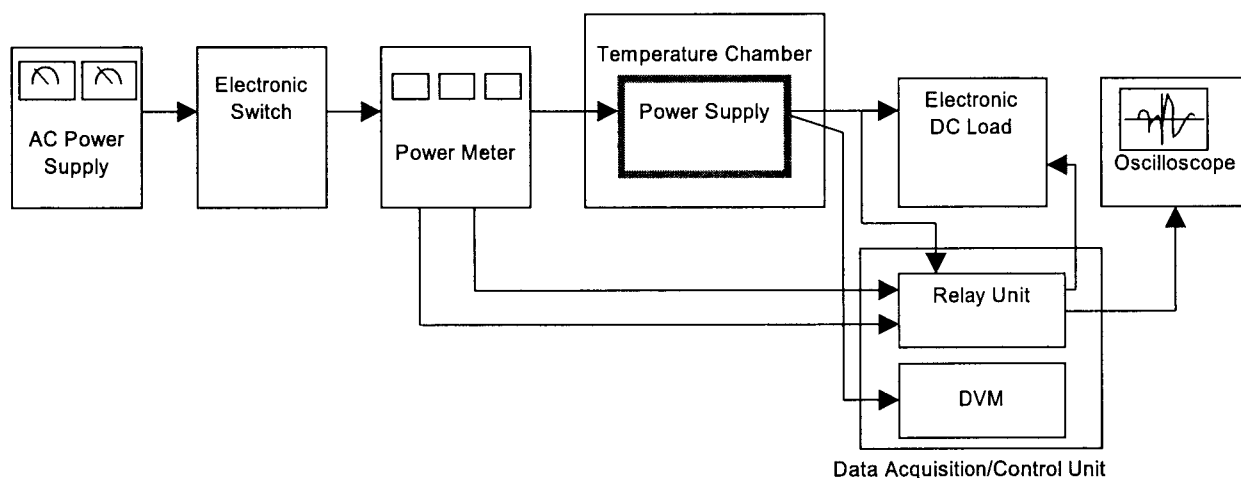


Figure A

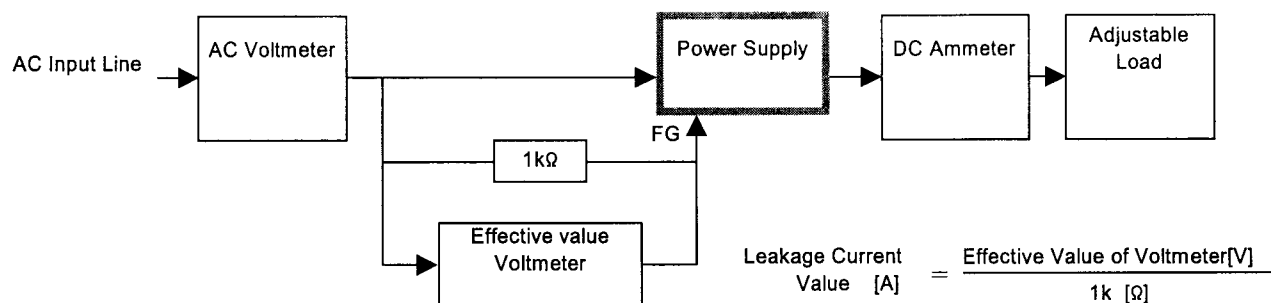


Figure B ( DEN-AN )

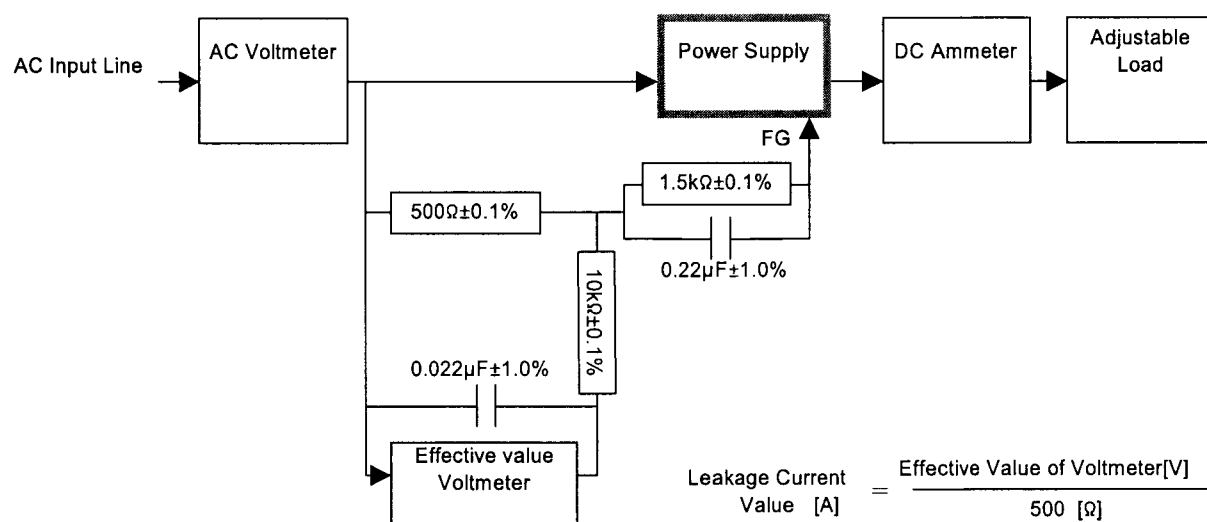


Figure B ( IEC60950 )