



# TEST DATA OF LCA100S-48

(100V INPUT)

Regulated DC Power Supply

Mar. 4, 2002

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Design Manager

Prepared by : T. Mizuhara  
Design Engineer

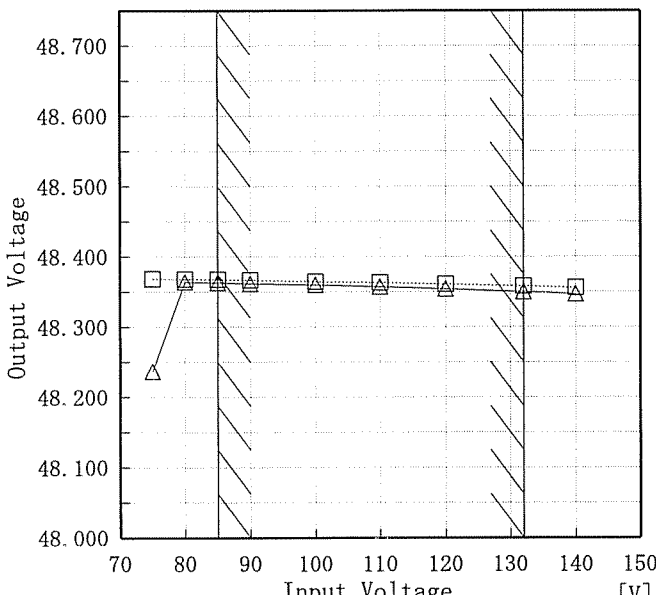
**コーセル株式会社**  
**COSEL CO.,LTD.**

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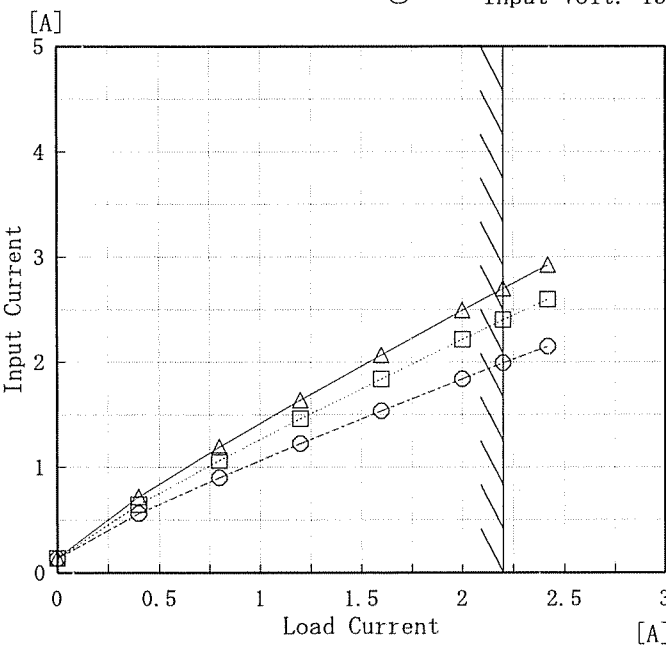
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COSEL																																			
Model	LCA100S-48	Temperature 25℃ Testing Circuitry Figure A																																	
Item	Line Regulation 静的入力変動																																		
Object	+48.0V2.2A																																		
1. Graph		2. Values																																	
<div><div><div>-----□----- Load 50%</div><div>-----△----- Load 100%</div></div><div><div>[V]</div><div>Output Voltage [V]</div><div>Input Voltage [V]</div></div><div>Note: Slanted line shows the range of the rated input voltage.</div><div>(注)斜線は定格入力電圧範囲を示す。</div></div>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>48.369</td><td>48.237</td></tr><tr><td>80</td><td>48.368</td><td>48.364</td></tr><tr><td>85</td><td>48.368</td><td>48.363</td></tr><tr><td>90</td><td>48.367</td><td>48.362</td></tr><tr><td>100</td><td>48.365</td><td>48.360</td></tr><tr><td>110</td><td>48.363</td><td>48.357</td></tr><tr><td>120</td><td>48.361</td><td>48.354</td></tr><tr><td>132</td><td>48.358</td><td>48.350</td></tr><tr><td>140</td><td>48.356</td><td>48.347</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	75	48.369	48.237	80	48.368	48.364	85	48.368	48.363	90	48.367	48.362	100	48.365	48.360	110	48.363	48.357	120	48.361	48.354	132	48.358	48.350	140	48.356	48.347
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			<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 85 [V]</th><th>Input Volt. 100 [V]</th><th>Input Volt. 132 [V]</th></tr><tr><td>0.00</td><td>0.141</td><td>0.135</td><td>0.132</td></tr><tr><td>0.40</td><td>0.719</td><td>0.646</td><td>0.560</td></tr><tr><td>0.80</td><td>1.192</td><td>1.065</td><td>0.902</td></tr><tr><td>1.20</td><td>1.640</td><td>1.463</td><td>1.227</td></tr><tr><td>1.60</td><td>2.068</td><td>1.840</td><td>1.535</td></tr><tr><td>2.00</td><td>2.492</td><td>2.215</td><td>1.839</td></tr><tr><td>2.20</td><td>2.701</td><td>2.402</td><td>1.991</td></tr><tr><td>2.42</td><td>2.924</td><td>2.598</td><td>2.149</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. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]	0.00	0.141	0.135	0.132	0.40	0.719	0.646	0.560	0.80	1.192	1.065	0.902	1.20	1.640	1.463	1.227	1.60	2.068	1.840	1.535	2.00	2.492	2.215	1.839	2.20	2.701	2.402	1.991	2.42	2.924	2.598	2.149	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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BC-0793

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Model		LCA100S-48																																	
Item	Efficiency (by Input Voltage)		Temperature																																
	効率 (入力電圧特性)		25℃																																
Object			Testing Circuitry																																
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Item		Efficiency (by Load Current) 効率 (負荷特性)																																																										
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Model		LCA100S-48	Temperature Testing Circuitry	25℃ Figure A
Item		Hold-Up Time 出力保持時間		
Object		+48.0V2.2A		

1. Graph

-----□-----

Load 50%

-----△-----

Load 100%

[mS]

1000

100

10

1

70

80

90

100

110

120

130

140

150

Hold-Up Time

Input Voltage

[V]

Input Voltage [V]	Load 50% [mS]	Load 100% [mS]
75	22	8
80	30	12
85	39	16
90	48	20
100	67	29
110	88	39
120	112	50
132	142	65
140	163	75

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.

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	22	8
80	30	12
85	39	16
90	48	20
100	67	29
110	88	39
120	112	50
132	142	65
140	163	75



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Model	LCA100S-48																																																					
Item	Instantaneous Interruption Compensation 瞬時停電保障	Temperature	25℃																																																			
Object	+48V2.2A	Testing Circuitry	Figure A																																																			
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Model		LCA100S-48	
Item		Ripple Voltage (by Load Current) リップル電圧 (負荷特性)	
Object		+48V2.2A	

1. Graph

—△— Input Volt. 85V

-○- Input Volt. 132V

100

80

60

40

20

0

Ripple Voltage [mV]

0

1

2

3

Load Current [A]

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

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

リップル電圧は、下図 p - p 値で示される。

(注) 斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line  
入力商用周期

T2: Due to Switching  
スイッチング周期

Ripple [mVp-p]

Fig. Complex Ripple Wave Form

図 リップル波形詳細図

Temperature	25℃
Testing Circuitry	Figure A

2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	5	5
0.40	20	20
0.80	20	20
1.20	25	20
1.60	30	20
2.00	30	20
2.20	30	20
2.42	35	25
--	--	--
--	--	--
--	--	--

# COSEL

Model		LCA100S-48	
Item		Ripple-Noise リップルノイズ	
Object		+48V2.2A	

1. Graph

—△— Input Volt. 85V

-○- Input Volt. 132V

Load Current [A]	85V [mV]	132V [mV]
0	15	30
0.4	35	40
0.8	40	40
1.2	45	45
1.6	50	50
2	55	50
2.2	60	55
2.42	60	55
--	--	--
--	--	--
--	--	--

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

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

リップルノイズは、下図 p-p 値で示される。

(注) 斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line  
入力商用周期

T2: Due to Switching  
スイッチング周期

Fig. Complex Ripple Wave Form

図 リップル波形詳細図

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0	15	30
0.4	35	40
0.8	40	40
1.2	45	45
1.6	50	50
2	55	50
2.2	60	55
2.42	60	55
--	--	--
--	--	--
--	--	--

**COSEL**

Model		LCA100S-48	Temperature Testing Circuitry	25°C Figure A
Item		Overcurrent Protection 過電流保護		
Object		+48.0V2.2A		

1. Graph

Input Volt. 85 V

Input Volt. 100 V

Input Volt. 132 V

[V]

80.0

60.0

40.0

20.0

0.0

0

1

2

3

4

Output Voltage

Load Current

[A]

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

(注)斜線は定格負荷電流範囲を示す。

2. Values




Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	48.00	2.926	2.919
45.60	2.934	2.929	2.964
43.20	2.945	2.945	2.978
38.40	2.970	2.974	3.001
33.60	2.987	2.992	3.022
28.80	3.004	3.007	3.046
24.00	3.015	3.024	3.063
19.20	3.022	3.029	3.075
14.40	3.030	3.047	3.092
9.60	3.034	3.036	3.062
4.80	2.965	2.956	2.953
0.00	3.338	3.464	3.794

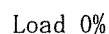
2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
48.00	2.926	2.919	2.947
45.60	2.934	2.929	2.964
43.20	2.945	2.945	2.978
38.40	2.970	2.974	3.001
33.60	2.987	2.992	3.022
28.80	3.004	3.007	3.046
24.00	3.015	3.024	3.063
19.20	3.022	3.029	3.075
14.40	3.030	3.047	3.092
9.60	3.034	3.036	3.062
4.80	2.965	2.956	2.953
0.00	3.338	3.464	3.794

Note: Slanted line shows the range of the rated load current.  
  
(注)斜線は定格負荷電流範囲を示す。

Testing Circuitry Figure A

	Input Volt.	85V
	Input Volt.	100V
	Input Volt.	132V

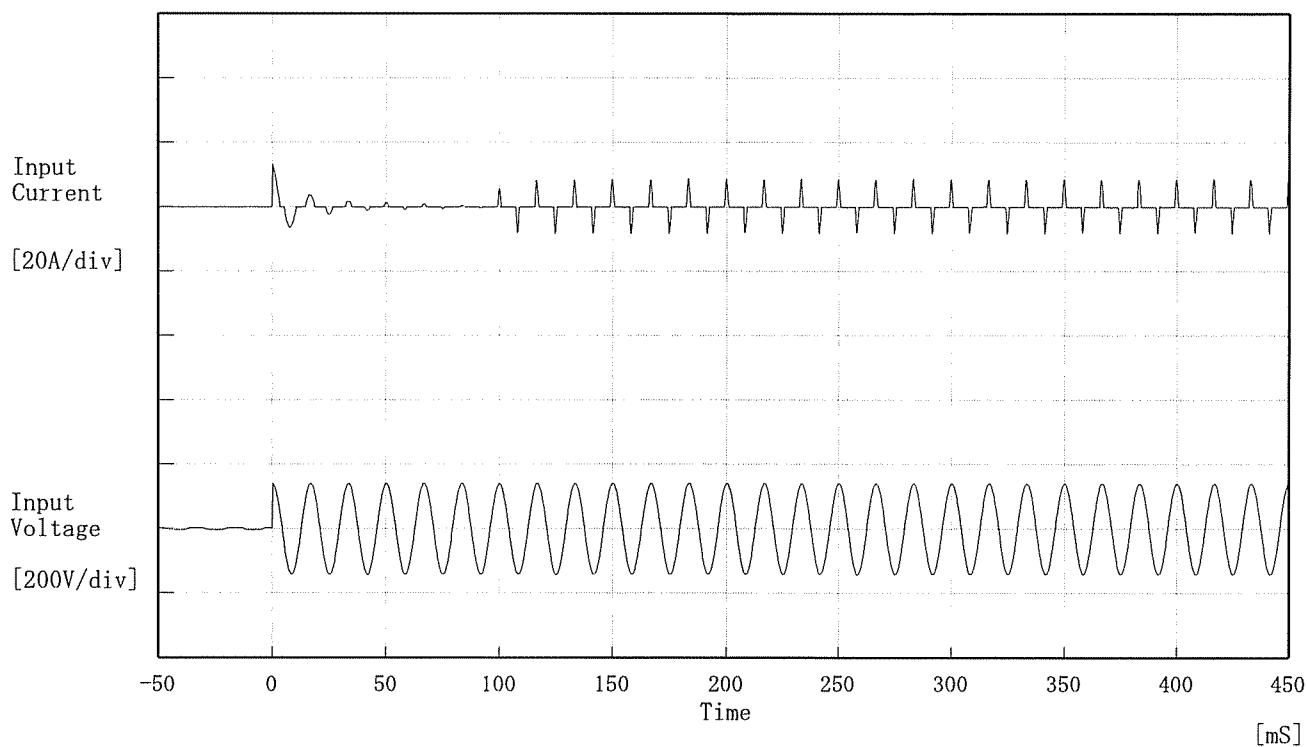


(注) 斜線は定格周囲温度範囲を示す。

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	57.91	58.03	58.21
-10	58.44	58.44	58.62
0	58.91	59.03	59.14
10	59.49	59.61	59.61
20	60.03	60.03	60.03
25	60.33	60.33	60.33
30	60.62	60.62	60.62
40	61.15	61.15	61.15
50	61.62	61.62	61.62
60	62.15	62.20	62.20
--	--	--	--

**COSEL**

Model	LCA100S-48	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



Input Voltage 100 V

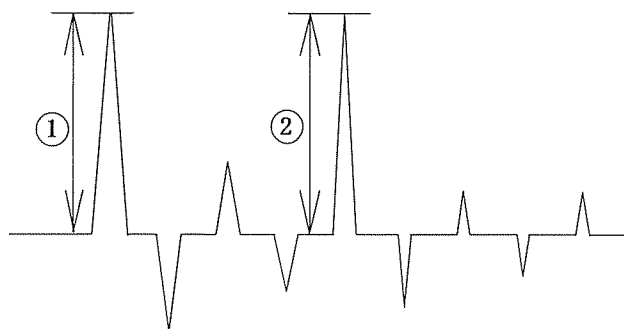
Frequency 60 Hz

Load 100 %

Inrush Current

① 13.20 [A]

② 8.80 [A]

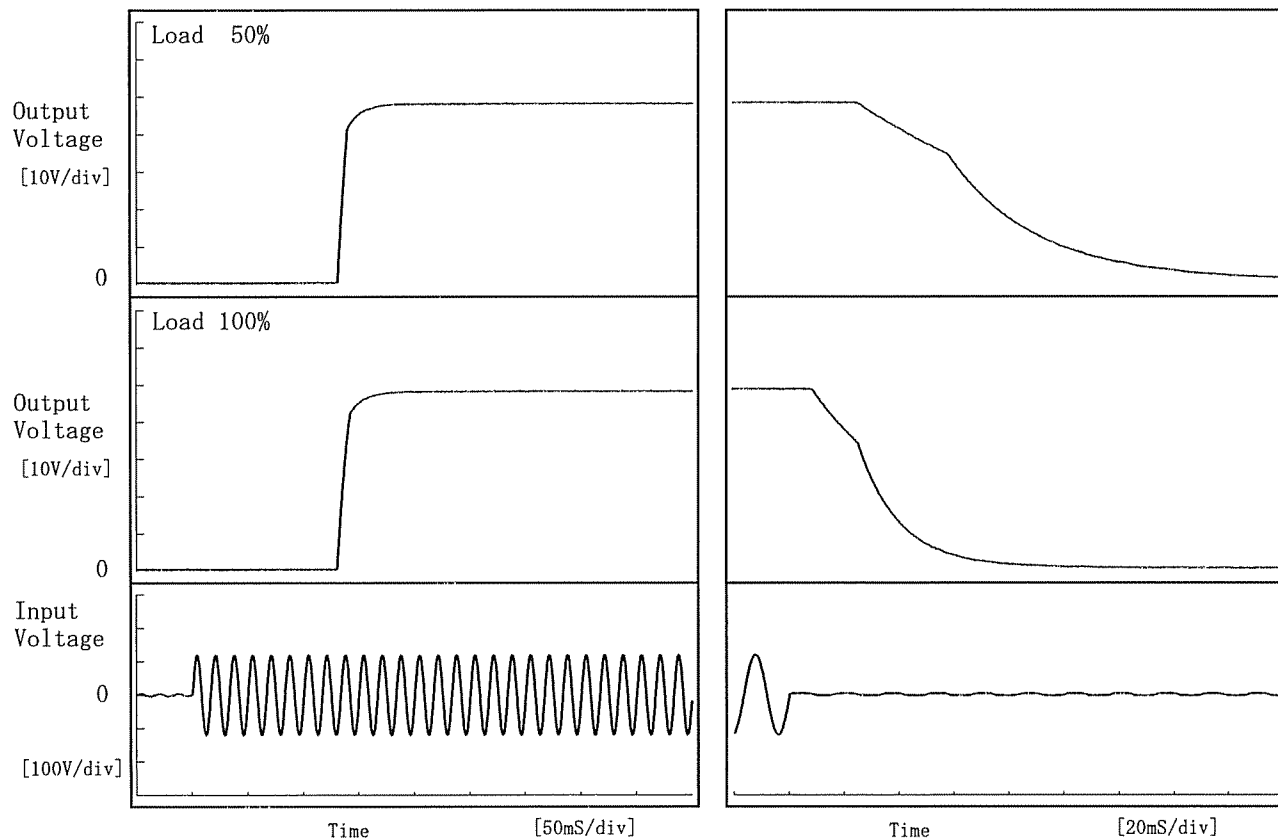


**COSEL**

Model	LCA100S-48	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+48.0V2.2A		

## 1. Graph

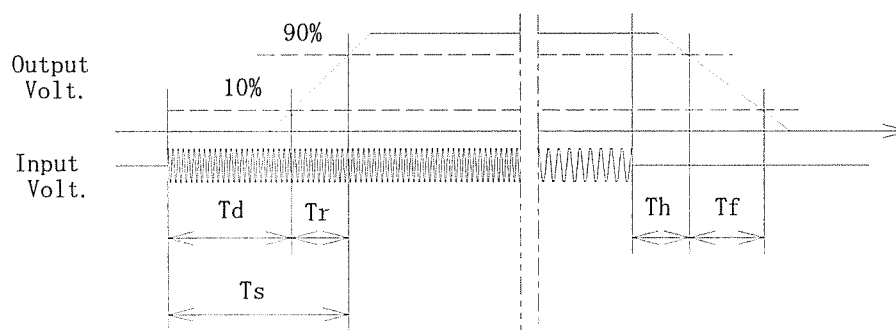
Input Volt. 85 V



## 2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	131.3	12.8	144.0	35.2	90.0
100 %	131.3	14.0	145.3	13.6	42.5





# COSEL

Model		LCA100S-48	Testing Circuitry    Figure A																																																			
Item		Ambient Temperature Drift 周囲温度変動																																																				
Object		+48.0V2.2A																																																				
1. Graph		<div> <div>△</div> Input Volt. 85V <div>□</div> Input Volt. 100V <div>○</div> Input Volt. 132V </div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>	2. Values																																																			
			<table> <tr> <th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr> <tr> <th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr> <tr><td>-20</td><td>48.410</td><td>48.407</td><td>48.398</td></tr> <tr><td>-10</td><td>48.400</td><td>48.397</td><td>48.389</td></tr> <tr><td>0</td><td>48.387</td><td>48.385</td><td>48.377</td></tr> <tr><td>10</td><td>48.371</td><td>48.369</td><td>48.362</td></tr> <tr><td>20</td><td>48.352</td><td>48.349</td><td>48.342</td></tr> <tr><td>25</td><td>48.342</td><td>48.340</td><td>48.332</td></tr> <tr><td>30</td><td>48.334</td><td>48.331</td><td>48.321</td></tr> <tr><td>40</td><td>48.305</td><td>48.302</td><td>48.292</td></tr> <tr><td>50</td><td>48.279</td><td>48.276</td><td>48.265</td></tr> <tr><td>60</td><td>48.256</td><td>48.252</td><td>48.241</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </table>	Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	-20	48.410	48.407	48.398	-10	48.400	48.397	48.389	0	48.387	48.385	48.377	10	48.371	48.369	48.362	20	48.352	48.349	48.342	25	48.342	48.340	48.332	30	48.334	48.331	48.321	40	48.305	48.302	48.292	50	48.279	48.276	48.265	60	48.256	48.252	48.241	—	—	—	—
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Note: Slanted line shows the range of the rated ambient temperature.																																																						
(注) 斜線は定格周囲温度範囲を示す。																																																						

# COSEL

Model		LCA100S-48	
Item		Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧	
Object		+48.0V2.2A	

1. Graph

□

Load 50%

△

Load 100%

Input Voltage [V]

100.0

80.0

60.0

40.0

20.0

0.0

30

10

30

50

70

Ambient Temperature [°C]

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

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	66	73
-10	66	72
0	66	72
10	66	72
20	66	72
25	66	72
30	65	72
40	65	72
50	65	72
60	65	72
—	—	—

# COSEL

</



Model		LCA100S-48	Testing Circuitry    Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+48.0V2.2A	

### 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 : -10~50 °C

Input Voltage : 85~132 V

Load Current : 0~2.2 A

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

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

### 1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度            -10~50 °C

入力電圧            85~132 V

負荷電流            0~2.2 A

\* 定電圧精度(変動値) =  $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

\* 定電圧精度(変動率) =  $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

### 2. Values

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	-10	100	0.0	48.407	±74	±0.2
Minimum Voltage	50	132	2.2	48.259		

**COSEL**

