


TEST DATA OF LEP100F-48

(200V INPUT)

Regulated DC Power Supply
Dec. 12. 2002

Approved by : 
Masahiro Miyamae Design Manager

Prepared by : 
Takashi Mizuhara Design Engineer

コーセル株式会社
COSEL CO.,LTD.

CONTENTS

1. Line Regulation	1
静的入力変動	
2. Input Current (by Load Current)	2
入力電流 (負荷特性)	
3. Input Power (by Load Current)	3
入力電力 (負荷特性)	
4. Efficiency (by Input Voltage)	4
効率 (入力電圧特性)	
5. Efficiency (by Load Current)	5
効率 (負荷特性)	
6. Power Factor (by Input Voltage)	6
力率 (入力電圧特性)	
7. Power Factor (by Load Current)	7
力率 (負荷特性)	
8. Hold-Up Time	8
出力保持時間	
9. Instantaneous Interruption Compensation	9
瞬時停電保障	
10. Load Regulation	10
静的負荷変動	
11. Ripple Voltage (by Load Current)	11
リップル電圧 (負荷特性)	
12. Ripple-Noise	12
リップルノイズ	
13. Overcurrent Protection	13
過電流保護	
14. Overvoltage Protection	14
過電圧保護	
15. Inrush Current	15
突入電流	
16. Dynamic Load Response	16
動的負荷変動	
17. Rise and Fall Time	17
立上り、立下り時間	
18. Ambient Temperature Drift	18
周囲温度変動	
19. Minimum Input Voltage for Regulated Output Voltage	19
最低レギュレーション電圧	
20. Ripple Voltage (by Ambient Temperature)	20
リップル電圧 (周囲温度特性)	
21. Time Lapse Drift	21
経時ドリフト	
22. Output Voltage Accuracy	22
定電圧精度	
23. Harmonic Current	23
高調波電流	
24. Condensation	25
結露特性	
25. Leakage Current	26
漏洩電流	
26. Line Noise Tolerance	27
入力雑音耐量	
27. Conducted Emission	28
雑音端子電圧	
28. Figure of Testing Circuitry	29
測定回路図	

COSEL

Model	LEP100F-48																																
Item	Line Regulation 静的入力変動	Temperature	25℃																														
Object	+48V2.1A	Testing Circuitry	Figure A																														
1. Graph		2. Values																															
<div><div>---□---</div><div>Load 50%</div></div> <div><div>—△—</div><div>Load 100%</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>48.029</td><td>48.029</td></tr><tr><td>160</td><td>48.030</td><td>48.029</td></tr><tr><td>170</td><td>48.030</td><td>48.029</td></tr><tr><td>180</td><td>48.030</td><td>48.029</td></tr><tr><td>200</td><td>48.030</td><td>48.029</td></tr><tr><td>220</td><td>48.030</td><td>48.028</td></tr><tr><td>240</td><td>48.031</td><td>48.028</td></tr><tr><td>264</td><td>48.030</td><td>48.028</td></tr><tr><td>280</td><td>48.031</td><td>48.027</td></tr></tbody></table>		Input Voltage [V]	Output Voltage [V] (Load 50%)	Output Voltage [V] (Load 100%)	150	48.029	48.029	160	48.030	48.029	170	48.030	48.029	180	48.030	48.029	200	48.030	48.029	220	48.030	48.028	240	48.031	48.028	264	48.030	48.028	280	48.031	48.027		
Input Voltage [V]	Output Voltage [V] (Load 50%)	Output Voltage [V] (Load 100%)																															
150	48.029	48.029																															
160	48.030	48.029																															
170	48.030	48.029																															
180	48.030	48.029																															
200	48.030	48.029																															
220	48.030	48.028																															
240	48.031	48.028																															
264	48.030	48.028																															
280	48.031	48.027																															
Note: Slanted line shows the range of the rated input voltage. (注) 斜線は定格入力電圧範囲を示す。																																	

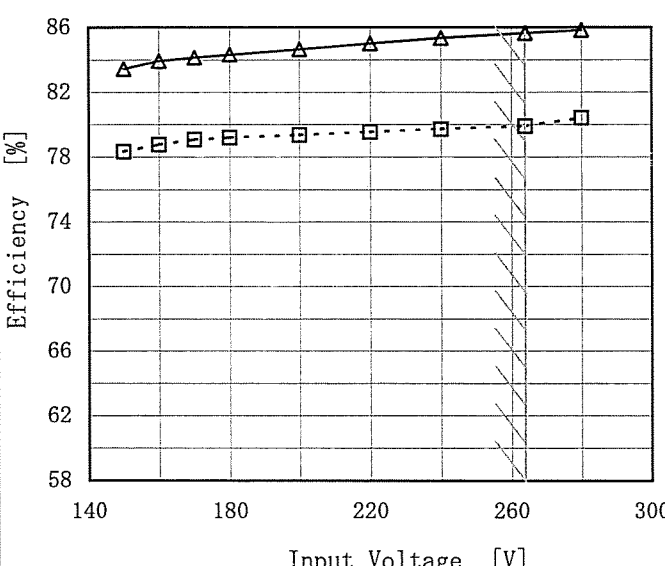
COSEL

Model	LEP100F-48																																																					
Item	Input Current (by Load Current) 入力電流 (負荷特性)		Temperature 25℃ Testing Circuitry Figure A																																																			
Object	_____																																																					
1. Graph		2. Values																																																				
<div><div>—△— Input Volt. 170V</div><div>---□--- Input Volt. 200V</div><div>---○--- Input Volt. 264V</div></div> <p>Input Current [A]</p> <p>Load Current [A]</p>		<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>0.00</td><td>0.059</td><td>0.060</td><td>0.066</td></tr><tr><td>0.40</td><td>0.189</td><td>0.169</td><td>0.148</td></tr><tr><td>0.80</td><td>0.313</td><td>0.275</td><td>0.229</td></tr><tr><td>1.20</td><td>0.436</td><td>0.380</td><td>0.308</td></tr><tr><td>1.60</td><td>0.558</td><td>0.483</td><td>0.386</td></tr><tr><td>2.00</td><td>0.682</td><td>0.588</td><td>0.464</td></tr><tr><td>2.10</td><td>0.712</td><td>0.613</td><td>0.484</td></tr><tr><td>2.31</td><td>0.778</td><td>0.669</td><td>0.525</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]	0.00	0.059	0.060	0.066	0.40	0.189	0.169	0.148	0.80	0.313	0.275	0.229	1.20	0.436	0.380	0.308	1.60	0.558	0.483	0.386	2.00	0.682	0.588	0.464	2.10	0.712	0.613	0.484	2.31	0.778	0.669	0.525	--	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Input Current [A]																																																					
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																			
0.00	0.059	0.060	0.066																																																			
0.40	0.189	0.169	0.148																																																			
0.80	0.313	0.275	0.229																																																			
1.20	0.436	0.380	0.308																																																			
1.60	0.558	0.483	0.386																																																			
2.00	0.682	0.588	0.464																																																			
2.10	0.712	0.613	0.484																																																			
2.31	0.778	0.669	0.525																																																			
--	--	--	--																																																			
--	--	--	--																																																			
--	--	--	--																																																			
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。																																																						

COSEL

Model		LEP100F-48		Temperature		25℃																																																				
Item		Input Power (by Load Current) 入力電力（負荷特性）		Testing Circuitry		Figure A																																																				
Object																																																										
1. Graph				2. Values																																																						
<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> <div><div><div>200</div><div>150</div><div>100</div><div>50</div><div>0</div></div><div>Input Power [W]</div><div><div>0.0</div><div>1.0</div><div>2.0</div></div><div>Load Current [A]</div></div> <div><div>Note: Slanted line shows the range of the rated load current.</div><div>(注) 斜線は定格負荷電流範囲を示す。</div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>5.3</td><td>5.4</td><td>5.9</td></tr><tr><td>0.40</td><td>26.5</td><td>26.4</td><td>26.4</td></tr><tr><td>0.80</td><td>47.6</td><td>47.3</td><td>47.0</td></tr><tr><td>1.20</td><td>68.9</td><td>68.3</td><td>67.7</td></tr><tr><td>1.60</td><td>89.9</td><td>89.4</td><td>88.4</td></tr><tr><td>2.00</td><td>111.4</td><td>110.7</td><td>109.4</td></tr><tr><td>2.10</td><td>116.6</td><td>116.0</td><td>114.7</td></tr><tr><td>2.31</td><td>128.2</td><td>127.1</td><td>125.8</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 Power [W]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	5.3	5.4	5.9	0.40	26.5	26.4	26.4	0.80	47.6	47.3	47.0	1.20	68.9	68.3	67.7	1.60	89.9	89.4	88.4	2.00	111.4	110.7	109.4	2.10	116.6	116.0	114.7	2.31	128.2	127.1	125.8	--	—	—	—	--	—	—	—	--	—	—	—
Load Current [A]	Input Power [W]																																																									
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																							
0.00	5.3	5.4	5.9																																																							
0.40	26.5	26.4	26.4																																																							
0.80	47.6	47.3	47.0																																																							
1.20	68.9	68.3	67.7																																																							
1.60	89.9	89.4	88.4																																																							
2.00	111.4	110.7	109.4																																																							
2.10	116.6	116.0	114.7																																																							
2.31	128.2	127.1	125.8																																																							
--	—	—	—																																																							
--	—	—	—																																																							
--	—	—	—																																																							
				BC-0849																																																						

COSEL

Model		LEP100F-48																																	
Item		Efficiency (by Input Voltage) 効率 (入力電圧特性)																																	
Object																																			
1. Graph		2. Values																																	
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div><div>---</div><div>△</div><div>---</div></div> <div>Load 100%</div> <div></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">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>150</td><td>78.3</td><td>83.4</td></tr><tr><td>160</td><td>78.8</td><td>83.9</td></tr><tr><td>170</td><td>79.1</td><td>84.1</td></tr><tr><td>180</td><td>79.2</td><td>84.3</td></tr><tr><td>200</td><td>79.4</td><td>84.7</td></tr><tr><td>220</td><td>79.5</td><td>85.0</td></tr><tr><td>240</td><td>79.7</td><td>85.4</td></tr><tr><td>264</td><td>79.9</td><td>85.7</td></tr><tr><td>280</td><td>80.4</td><td>85.8</td></tr></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	150	78.3	83.4	160	78.8	83.9	170	79.1	84.1	180	79.2	84.3	200	79.4	84.7	220	79.5	85.0	240	79.7	85.4	264	79.9	85.7	280	80.4	85.8
Input Voltage [V]	Efficiency [%]																																		
	Load 50%	Load 100%																																	
150	78.3	83.4																																	
160	78.8	83.9																																	
170	79.1	84.1																																	
180	79.2	84.3																																	
200	79.4	84.7																																	
220	79.5	85.0																																	
240	79.7	85.4																																	
264	79.9	85.7																																	
280	80.4	85.8																																	

COSEL

Model		LEP100F-48		Temperature		25℃																																																				
Item		Efficiency (by Load Current) 効率（負荷特性）		Testing Circuitry		Figure A																																																				
Object																																																										
1. Graph				2. Values																																																						
<div><div><div>—△—</div><div>---□---</div><div>---○---</div></div><div><div>Input Volt. 170V</div><div>Input Volt. 200V</div><div>Input Volt. 264V</div></div></div> <table><thead><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr></thead><tbody><tr><td>0.00</td><td>—</td><td>—</td><td>—</td></tr><tr><td>0.40</td><td>63.1</td><td>63.0</td><td>63.4</td></tr><tr><td>0.80</td><td>75.3</td><td>75.8</td><td>76.3</td></tr><tr><td>1.20</td><td>79.8</td><td>80.6</td><td>81.2</td></tr><tr><td>1.60</td><td>82.5</td><td>82.9</td><td>83.9</td></tr><tr><td>2.00</td><td>83.8</td><td>84.3</td><td>85.3</td></tr><tr><td>2.10</td><td>84.1</td><td>84.5</td><td>85.5</td></tr><tr><td>2.31</td><td>84.4</td><td>85.1</td><td>85.9</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]	Efficiency [%]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	—	—	—	0.40	63.1	63.0	63.4	0.80	75.3	75.8	76.3	1.20	79.8	80.6	81.2	1.60	82.5	82.9	83.9	2.00	83.8	84.3	85.3	2.10	84.1	84.5	85.5	2.31	84.4	85.1	85.9	--	—	—	—	--	—	—	—	--	—	—	—				
Load Current [A]	Efficiency [%]																																																									
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																							
0.00	—	—	—																																																							
0.40	63.1	63.0	63.4																																																							
0.80	75.3	75.8	76.3																																																							
1.20	79.8	80.6	81.2																																																							
1.60	82.5	82.9	83.9																																																							
2.00	83.8	84.3	85.3																																																							
2.10	84.1	84.5	85.5																																																							
2.31	84.4	85.1	85.9																																																							
--	—	—	—																																																							
--	—	—	—																																																							
--	—	—	—																																																							
<p>Note: Slanted line shows the range of the rated load current.</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p>																																																										

— 5 —

BC-0849

COSEL

Model		LEP100F-48																																	
Item		Power Factor (by Input Voltage) 力率 (入力電圧特性)																																	
Object																																			
1. Graph		2. Values																																	
<div><div><div>Power Factor</div><div><div><div>1.0</div><div>0.9</div><div>0.8</div><div>0.7</div><div>0.6</div><div>0.5</div><div>0.4</div></div><div>140180220260300</div></div><div><div>Input Voltage [V]</div><div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div></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">Power Factor</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>150</td><td>0.937</td><td>0.975</td></tr><tr><td>160</td><td>0.927</td><td>0.969</td></tr><tr><td>170</td><td>0.917</td><td>0.964</td></tr><tr><td>180</td><td>0.907</td><td>0.958</td></tr><tr><td>200</td><td>0.888</td><td>0.946</td></tr><tr><td>220</td><td>0.867</td><td>0.931</td></tr><tr><td>240</td><td>0.845</td><td>0.917</td></tr><tr><td>264</td><td>0.816</td><td>0.898</td></tr><tr><td>280</td><td>0.715</td><td>0.797</td></tr></table>		Input Voltage [V]	Power Factor		Load 50%	Load 100%	150	0.937	0.975	160	0.927	0.969	170	0.917	0.964	180	0.907	0.958	200	0.888	0.946	220	0.867	0.931	240	0.845	0.917	264	0.816	0.898	280	0.715	0.797
Input Voltage [V]	Power Factor																																		
	Load 50%	Load 100%																																	
150	0.937	0.975																																	
160	0.927	0.969																																	
170	0.917	0.964																																	
180	0.907	0.958																																	
200	0.888	0.946																																	
220	0.867	0.931																																	
240	0.845	0.917																																	
264	0.816	0.898																																	
280	0.715	0.797																																	

— 6 —

BC-0849

COSEL

Model	LEP100F-48																																																					
Item	Power Factor (by Load Current) 力率 (負荷特性)	Temperature	25℃																																																			
Object	_____	Testing Circuitry	Figure A																																																			
1. Graph		2. Values																																																				
<div><div>—△— Input Volt. 170V</div><div>- -□- - Input Volt. 200V</div><div>- -○- - Input Volt. 264V</div></div> <p>Power Factor</p> <p>Load Current [A]</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>0.525</td><td>0.450</td><td>0.339</td></tr><tr><td>0.40</td><td>0.826</td><td>0.779</td><td>0.673</td></tr><tr><td>0.80</td><td>0.893</td><td>0.860</td><td>0.779</td></tr><tr><td>1.20</td><td>0.930</td><td>0.900</td><td>0.834</td></tr><tr><td>1.60</td><td>0.947</td><td>0.925</td><td>0.868</td></tr><tr><td>2.00</td><td>0.962</td><td>0.942</td><td>0.892</td></tr><tr><td>2.10</td><td>0.964</td><td>0.946</td><td>0.897</td></tr><tr><td>2.31</td><td>0.970</td><td>0.951</td><td>0.907</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]	Power Factor			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	0.525	0.450	0.339	0.40	0.826	0.779	0.673	0.80	0.893	0.860	0.779	1.20	0.930	0.900	0.834	1.60	0.947	0.925	0.868	2.00	0.962	0.942	0.892	2.10	0.964	0.946	0.897	2.31	0.970	0.951	0.907	--	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Power Factor																																																					
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																			
0.00	0.525	0.450	0.339																																																			
0.40	0.826	0.779	0.673																																																			
0.80	0.893	0.860	0.779																																																			
1.20	0.930	0.900	0.834																																																			
1.60	0.947	0.925	0.868																																																			
2.00	0.962	0.942	0.892																																																			
2.10	0.964	0.946	0.897																																																			
2.31	0.970	0.951	0.907																																																			
--	--	--	--																																																			
--	--	--	--																																																			
--	--	--	--																																																			
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。																																																						

- 7 -

BC-0849

COSEL

Model	LEP100F-48																																
Item	Hold-Up Time 出力保持時間	Temperature	25℃																														
Object	+48V2.1A	Testing Circuitry	Figure A																														
1. Graph		2. Values																															
<div><div>---□---</div><div>Load 50%</div></div> <div><div>—△—</div><div>Load 100%</div></div> <table><thead><tr><th>Input Voltage [V]</th><th>Hold-Up Time [mS] (Load 50%)</th><th>Hold-Up Time [mS] (Load 100%)</th></tr></thead><tbody><tr><td>150</td><td>73</td><td>35</td></tr><tr><td>160</td><td>74</td><td>36</td></tr><tr><td>170</td><td>74</td><td>36</td></tr><tr><td>180</td><td>75</td><td>37</td></tr><tr><td>200</td><td>76</td><td>37</td></tr><tr><td>220</td><td>77</td><td>38</td></tr><tr><td>240</td><td>78</td><td>39</td></tr><tr><td>264</td><td>78</td><td>39</td></tr><tr><td>280</td><td>79</td><td>40</td></tr></tbody></table>		Input Voltage [V]	Hold-Up Time [mS] (Load 50%)	Hold-Up Time [mS] (Load 100%)	150	73	35	160	74	36	170	74	36	180	75	37	200	76	37	220	77	38	240	78	39	264	78	39	280	79	40		
Input Voltage [V]	Hold-Up Time [mS] (Load 50%)	Hold-Up Time [mS] (Load 100%)																															
150	73	35																															
160	74	36																															
170	74	36																															
180	75	37																															
200	76	37																															
220	77	38																															
240	78	39																															
264	78	39																															
280	79	40																															
<p>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.</p> <p>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。</p>																																	

— 8 —

BC-0849

COSEL

Model		LEP100F-48		Temperature		25℃																																																				
Item		Instantaneous Interruption Compensation 瞬時停電保障		Testing Circuitry		Figure A																																																				
Object		+48V2.1A																																																								
1. Graph				2. Values																																																						
<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>Instantaneous Compensation Time [mS]</p> <p>Load Current [A]</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>0.00</td><td>—</td><td>—</td><td>—</td></tr><tr><td>0.40</td><td>171</td><td>172</td><td>177</td></tr><tr><td>0.80</td><td>90</td><td>97</td><td>98</td></tr><tr><td>1.20</td><td>58</td><td>63</td><td>68</td></tr><tr><td>1.60</td><td>48</td><td>48</td><td>51</td></tr><tr><td>2.00</td><td>37</td><td>39</td><td>46</td></tr><tr><td>2.10</td><td>36</td><td>37</td><td>39</td></tr><tr><td>2.31</td><td>31</td><td>32</td><td>35</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]	0.00	—	—	—	0.40	171	172	177	0.80	90	97	98	1.20	58	63	68	1.60	48	48	51	2.00	37	39	46	2.10	36	37	39	2.31	31	32	35	--	—	—	—	--	—	—	—	--	—	—	—
Load Current [A]	Time [mS]																																																									
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																							
0.00	—	—	—																																																							
0.40	171	172	177																																																							
0.80	90	97	98																																																							
1.20	58	63	68																																																							
1.60	48	48	51																																																							
2.00	37	39	46																																																							
2.10	36	37	39																																																							
2.31	31	32	35																																																							
--	—	—	—																																																							
--	—	—	—																																																							
--	—	—	—																																																							
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。																																																										

COSEL

Model	LEP100F-48																																																	
Item	Load Regulation 静的負荷変動	Temperature	25℃																																															
Object	+48V2.1A	Testing Circuitry	Figure A																																															
1. Graph		2. Values																																																
<div><div>—△— Input Volt. 170V ---□--- Input Volt. 200V --○-- Input Volt. 264V</div><div>Output Voltage [V]</div><div>Load Current [A]</div></div> <div>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。</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [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>0.00</td><td>48.041</td><td>48.041</td><td>48.041</td></tr><tr><td>0.40</td><td>48.035</td><td>48.036</td><td>48.037</td></tr><tr><td>0.80</td><td>48.034</td><td>48.035</td><td>48.035</td></tr><tr><td>1.20</td><td>48.033</td><td>48.034</td><td>48.034</td></tr><tr><td>1.60</td><td>48.033</td><td>48.034</td><td>48.034</td></tr><tr><td>2.00</td><td>48.033</td><td>48.033</td><td>48.033</td></tr><tr><td>2.10</td><td>48.032</td><td>48.033</td><td>48.033</td></tr><tr><td>2.31</td><td>48.032</td><td>48.033</td><td>48.033</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]	Output Voltage [V]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	48.041	48.041	48.041	0.40	48.035	48.036	48.037	0.80	48.034	48.035	48.035	1.20	48.033	48.034	48.034	1.60	48.033	48.034	48.034	2.00	48.033	48.033	48.033	2.10	48.032	48.033	48.033	2.31	48.032	48.033	48.033	--	--	--	--	--	--	--	--
Load Current [A]	Output Voltage [V]																																																	
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																															
0.00	48.041	48.041	48.041																																															
0.40	48.035	48.036	48.037																																															
0.80	48.034	48.035	48.035																																															
1.20	48.033	48.034	48.034																																															
1.60	48.033	48.034	48.034																																															
2.00	48.033	48.033	48.033																																															
2.10	48.032	48.033	48.033																																															
2.31	48.032	48.033	48.033																																															
--	--	--	--																																															
--	--	--	--																																															

<

COSEL

Model		LEP100F-48	
Item		Ripple Voltage (by Load Current) リップル電圧 (負荷特性)	
Object		+48V2.1A	

1. Graph

△

Input Volt. 170V

○

Input Volt. 264V

200

180

160

140

120

100

80

60

40

20

0

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

0

1

2

COSEL

Model		LEP100F-48	
Item		Ripple-Noise リップルノイズ	
Object		+48V2.1A	

1. Graph

△

Input Volt. 170V

○

Input Volt. 264V

200

180

160

140

120

100

80

60

40

20

0

0

1

2

200

180

160

140

120

100

80

60

40

20

0

0

1

2

Load Current [A]

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。

↑

↓

↑

↓

Ripple Noise[mVp-p]

Fig. Complex Ripple Noise Wave Form

図 リップルノイズ波形

Temperature 25℃

Testing Circuitry Figure A

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.00	30	30
0.40	60	55
0.80	65	65
1.20	65	65
1.60	70	70
2.00	75	80
2.10	75	80
2.31	80	80
--	--	--
--	--	--
--	--	--

COSEL

Model		LEP100F-48	
Item		Overcurrent Protection 過電流保護	
Object		+48V2.1A	

1. Graph

Input Volt. 170V

Input Volt. 200V

Input Volt. 264V

Output Voltage [V]

1. Graph

Operating Point [V]

Ambient Temperature [°C]

Input Volt. 170V
Input Volt. 200V
Input Volt. 264V

Load 0%

Ambient Temperature [°C]	Operating Point [V] (170V)	Operating Point [V] (200V)	Operating Point [V] (264V)
-20	59.3	59.3	59.3
-10	59.8	59.8	59.8
0	60.3	60.3	60.3
10	60.8	60.8	60.8
25	61.8	61.8	61.8
40	62.8	62.8	62.8
45	63.0	63.0	63.0
50	63.2	63.2	63.2
60	63.8	63.8	63.8
70	64.3	64.3	64.3

(注) 斜線は定格周囲温度範囲を示す。

2. Values

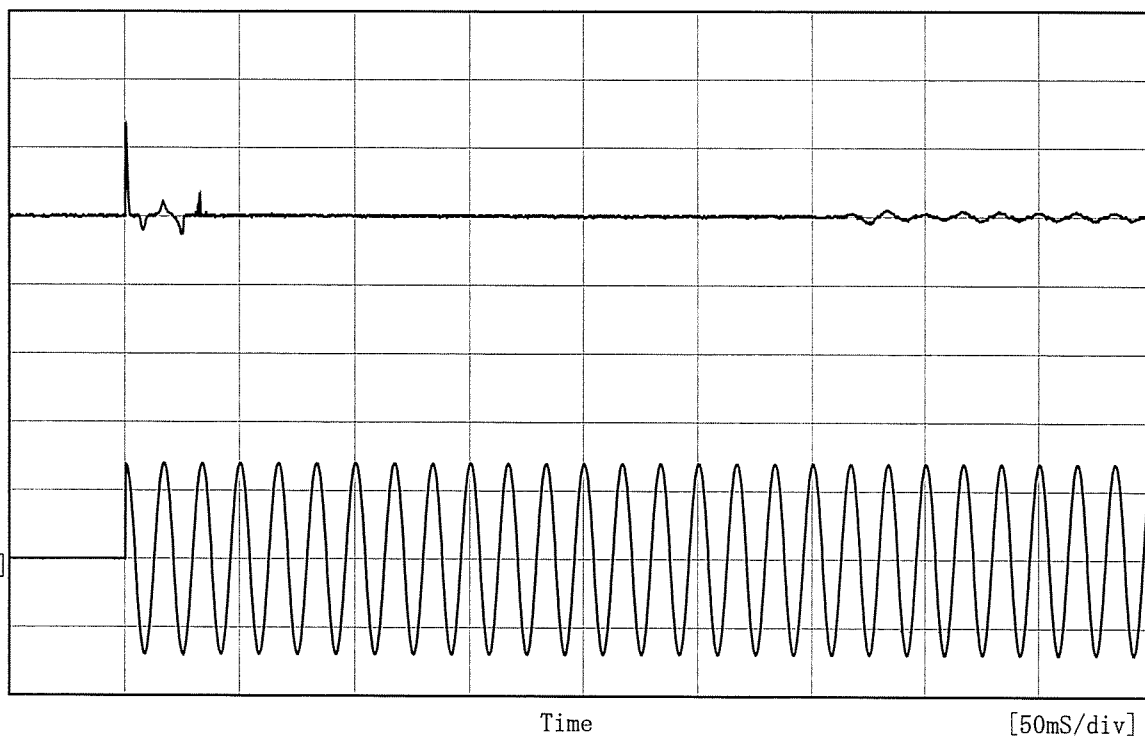
Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	59.56	59.32	59.32
-10	60.04	60.04	60.04
0	60.51	60.57	60.57
10	61.10	61.10	61.10
25	61.92	61.92	61.92
40	62.68	62.68	62.68
45	62.92	62.91	62.92
50	63.21	63.21	63.21
60	63.67	63.73	63.73
70	64.26	64.26	64.26
--	—	—	—

COSEL

Model	LEP100F-48	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	

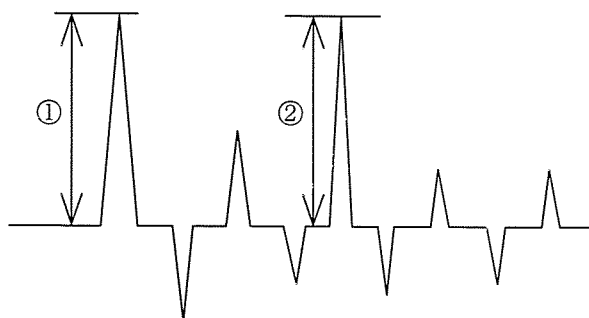
Input
Current
[20A/div]

Input
Voltage
[200V/div]



Input Voltage 200 V
Frequency 60 Hz
Load 100 %
Inrush Current

- ① 27.5 [A]
② 2.1 [A]



COSEL

Model	LEP100F-48	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response 動的負荷変動	
Object	+48V2.1A	

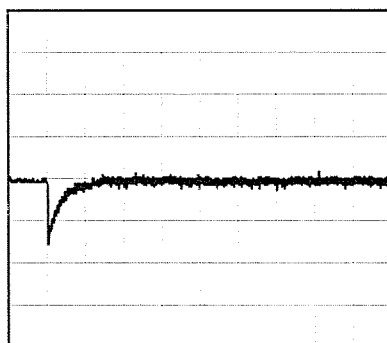
Input Volt. 200 V
Cycle 1000 ms

Load Current

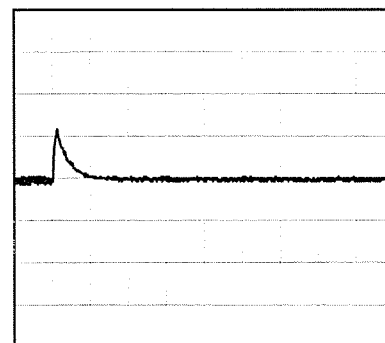


Min. Load (0A) \longleftrightarrow
Load 100% (2.1A)

200 mV/div



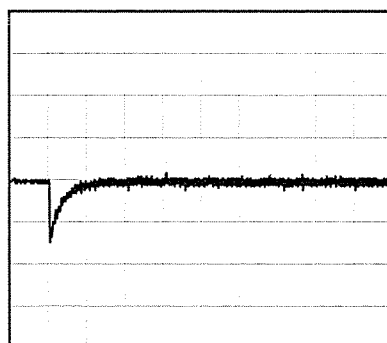
10 ms/div



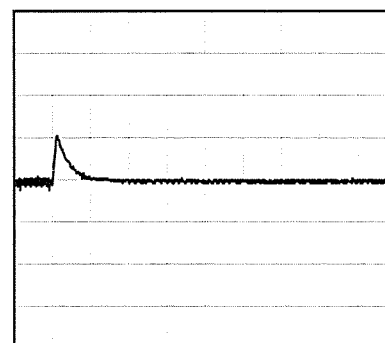
10 ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (1.05A)

200 mV/div



10 ms/div

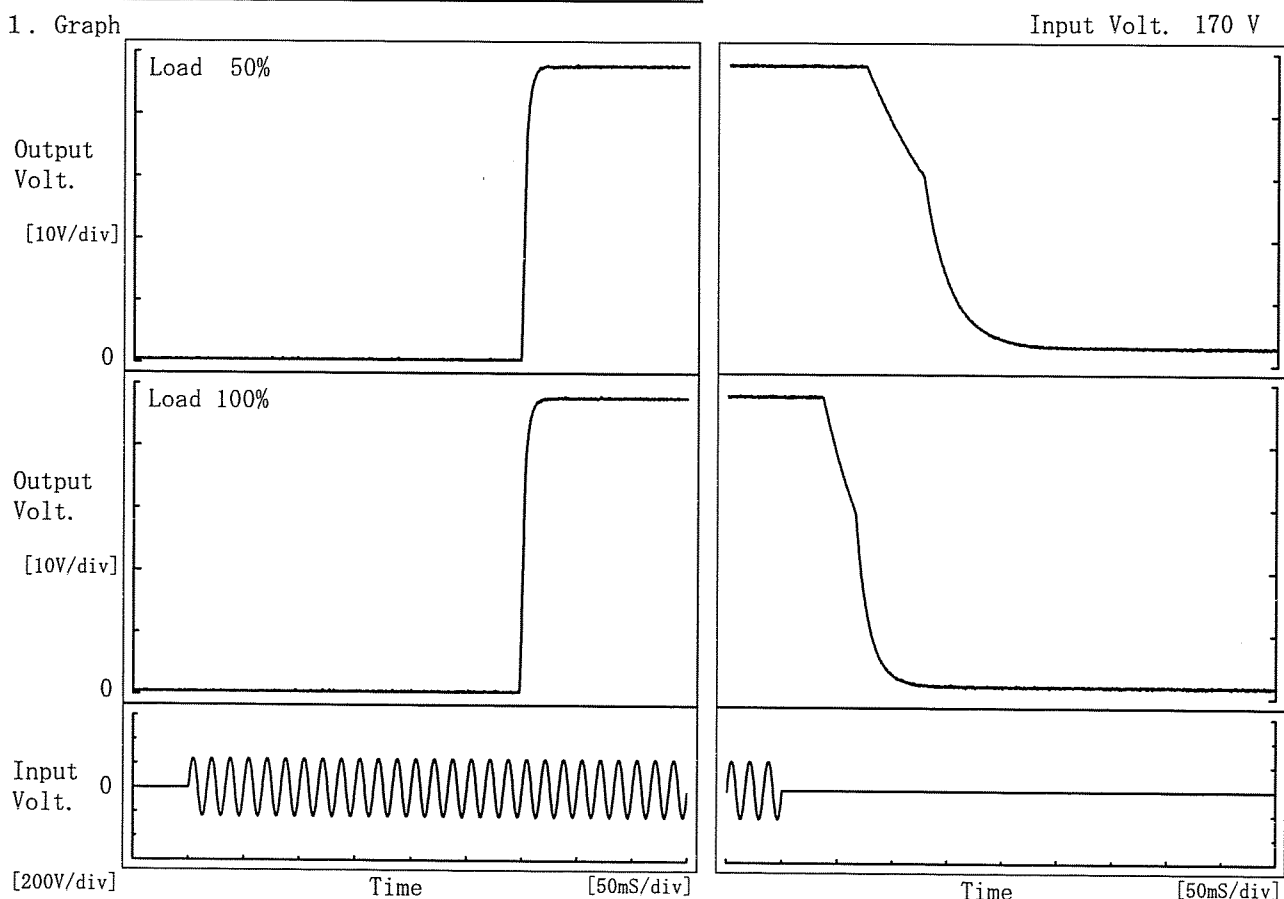


10 ms/div

COSEL

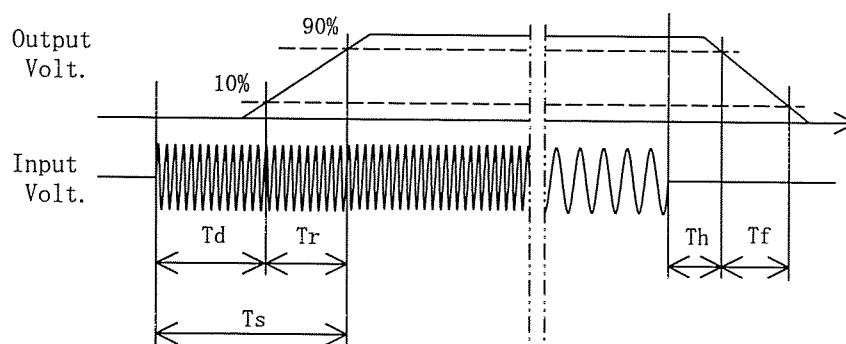
Model	LEP100F-48	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+48V2.1A		

1. Graph



2. Values

		[mS]				
Load	Time	T d	T r	T s	T h	T f
50 %		298.8	8.3	307.0	84.5	101.0
100 %		298.3	8.3	306.5	41.5	50.0



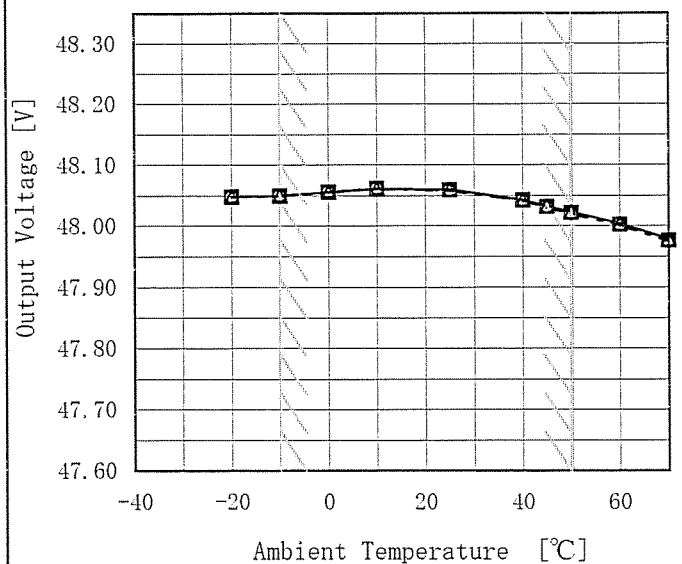
COSEL

Model	LEP100F-48
Item	Ambient Temperature Drift 周囲温度変動
Object	+48V2.1A

Testing Circuitry Figure A

1. Graph

—△— Input Volt. 170V
 ---□--- Input Volt. 200V
 -·○-·- Input Volt. 264V



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]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	48.048	48.048	48.048
-10	48.050	48.050	48.050
0	48.056	48.056	48.056
10	48.061	48.061	48.061
25	48.060	48.059	48.059
40	48.043	48.042	48.042
45	48.032	48.032	48.031
50	48.023	48.021	48.020
60	48.003	48.002	48.001
70	47.978	47.976	47.975
--	—	—	—

COSEL

Model		LEP100F-48	
Item		Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧	
Object		+48V2.1A	
1. Graph		2. Values	

□

Load 50%

—

△

—

Load 100%

Input Voltage [V]

COSEL

Model		LEP100F-48	
Item		Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	
Object		+48V2.1A	

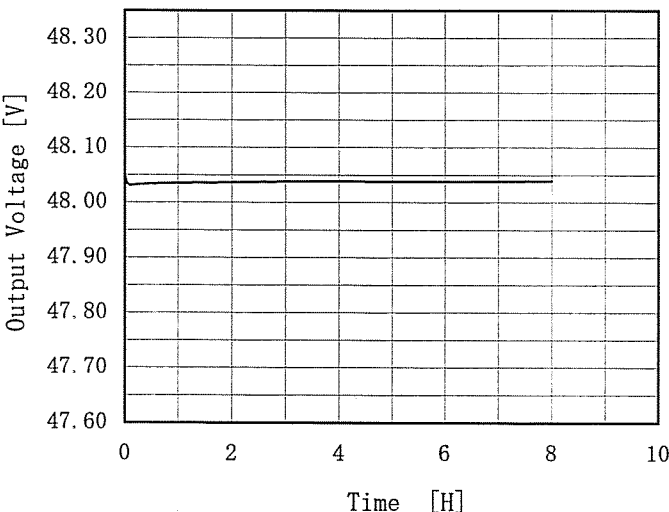
1. Graph

Load 50%

Load 100%

</

COSEL

Model	LEP100F-48																								
Item	Time Lapse Drift 経時ドリフト	Temperature	25℃																						
Object	+48V2.1A	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><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>48.050</td></tr><tr><td>0.5</td><td>48.035</td></tr><tr><td>1.0</td><td>48.036</td></tr><tr><td>2.0</td><td>48.037</td></tr><tr><td>3.0</td><td>48.038</td></tr><tr><td>4.0</td><td>48.039</td></tr><tr><td>5.0</td><td>48.039</td></tr><tr><td>6.0</td><td>48.039</td></tr><tr><td>7.0</td><td>48.039</td></tr><tr><td>8.0</td><td>48.040</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	48.050	0.5	48.035	1.0	48.036	2.0	48.037	3.0	48.038	4.0	48.039	5.0	48.039	6.0	48.039	7.0	48.039	8.0	48.040
Time since start [H]	Output Voltage [V]																								
0.0	48.050																								
0.5	48.035																								
1.0	48.036																								
2.0	48.037																								
3.0	48.038																								
4.0	48.039																								
5.0	48.039																								
6.0	48.039																								
7.0	48.039																								
8.0	48.040																								

Model		LEP100F-48	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+48V2.1A	

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 : 170 ~ 264V

Load Current : 0 ~ 2.1A

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

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

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 : 170 ~ 264V

負荷電流 : 0 ~ 2.1A

* 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		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	264	0	48.083	±22	±0.1
Minimum Voltage	50	264	2.1	48.039		

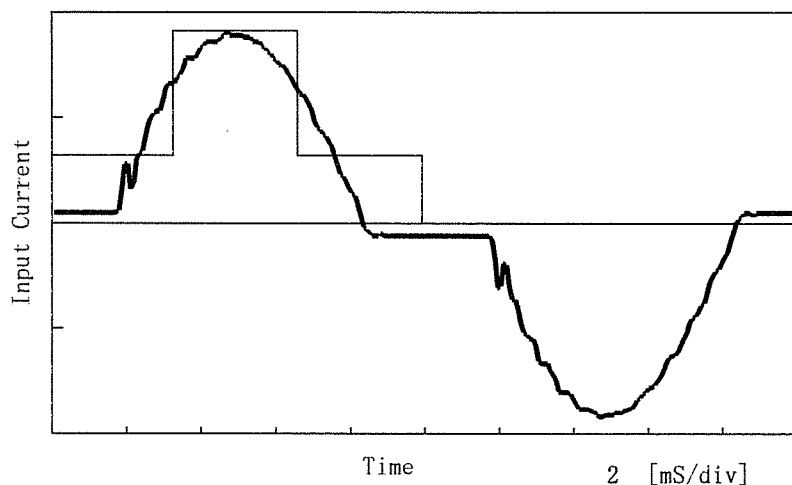
COSEL

Model	LEP100F-48	Temperature	25℃
Item	Harmonic Current 高調波電流	Testing Circuitry	Figure E
Object			

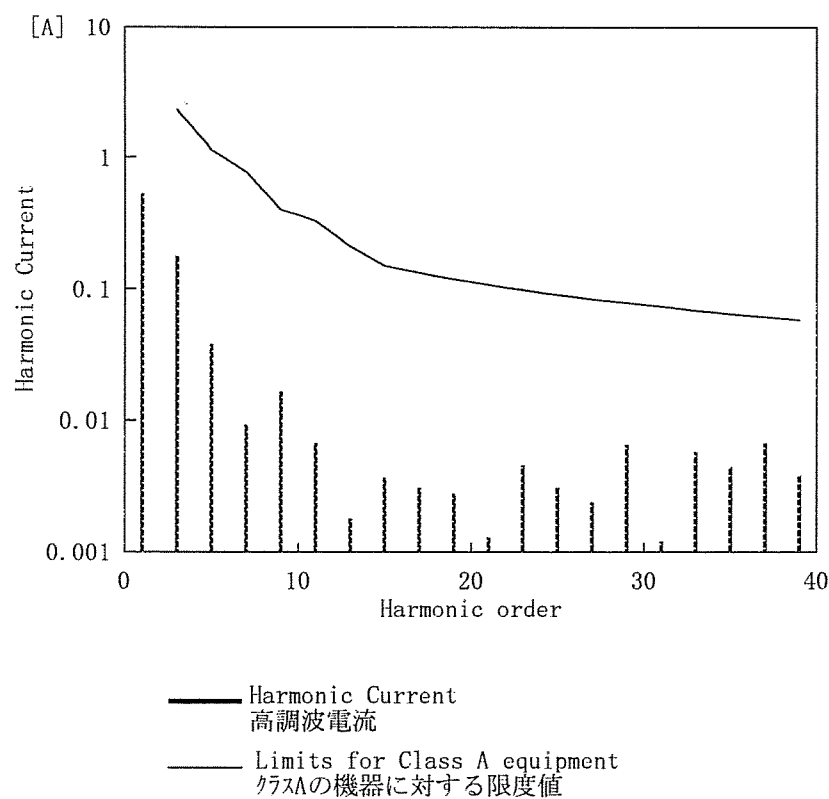
1. Input Current Waveform

— Input Current
— Envelope of the input current to classify equipment as Class D
クラスDの機器を決定するための入力電流包絡線

0.5 A/div



2. Harmonic Current



Conditions	Values
Input Voltage [V]	231
Input Current [A]	0.56
Active Power [W]	120.5
Apparent Power [VA]	129.4
Frequency [Hz]	50
Power Factor	0.931
Output Power [W]	100.8

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	0.52890
2	—	0.00050
3	2.29004	0.17780
4	—	0.00010
5	1.13506	0.03760
6	—	0.00000
7	0.76667	0.00930
8	—	0.00010
9	0.39827	0.01660
10	—	0.00010
11	0.32857	0.00680
12	—	0.00010
13	0.20909	0.00180
14	—	0.00010
15	0.14935	0.00370
16	—	0.00000
17	0.13178	0.00310
18	—	0.00000
19	0.11791	0.00280
20	—	0.00000
21	0.10668	0.00130
22	—	0.00010
23	0.09740	0.00460
24	—	0.00010
25	0.08961	0.00310
26	—	0.00010
27	0.08297	0.00240
28	—	0.00010
29	0.07725	0.00660
30	—	0.00010
31	0.07227	0.00120
32	—	0.00000
33	0.06789	0.00580
34	—	0.00010
35	0.06401	0.00450
36	—	0.00000
37	0.06055	0.00680
38	—	0.00000
39	0.05744	0.00390
40	—	0.00010

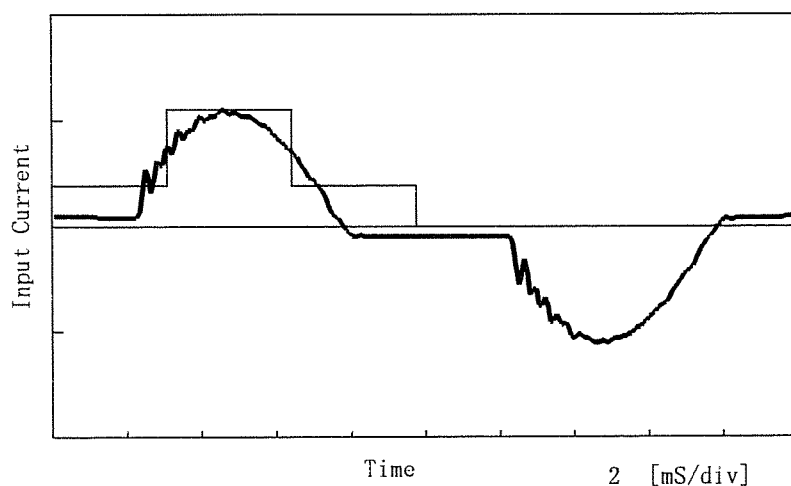
COSEL

Model	LEP100F-48	Temperature	25°C
Item	Harmonic Current 高調波電流	Testing Circuitry	Figure E
Object			

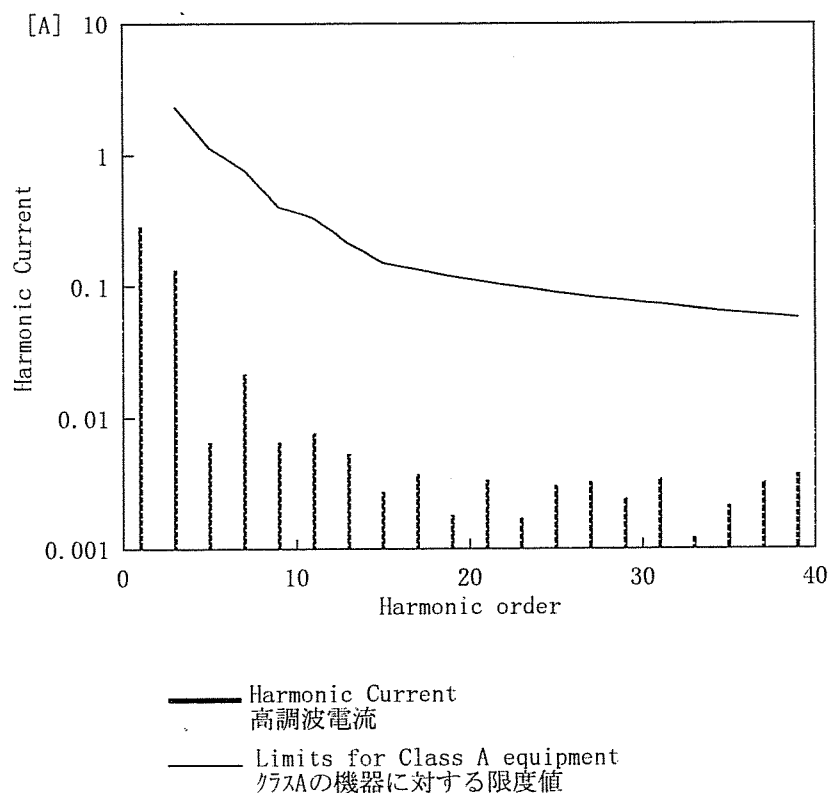
1. Input Current Waveform

— Input Current
 — Envelope of the input current to classify equipment as Class D
 クラスDの機器を決定するための入力電流包絡線

0.5 A/div



2. Harmonic Current



Conditions	Values
Input Voltage [V]	231.1
Input Current [A]	0.315
Active Power [W]	64
Apparent Power [VA]	73
Frequency [Hz]	50
Power Factor	0.877
Output Power [W]	50.4

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	0.28490
2	—	0.00020
3	2.28905	0.13190
4	—	0.00000
5	1.13457	0.00650
6	—	0.00000
7	0.76633	0.02170
8	—	0.00010
9	0.39810	0.00650
10	—	0.00010
11	0.32843	0.00760
12	—	0.00000
13	0.20900	0.00530
14	—	0.00010
15	0.14929	0.00270
16	—	0.00010
17	0.13172	0.00370
18	—	0.00010
19	0.11786	0.00180
20	—	0.00000
21	0.10663	0.00330
22	—	0.00000
23	0.09736	0.00170
24	—	0.00010
25	0.08957	0.00300
26	—	0.00010
27	0.08294	0.00320
28	—	0.00010
29	0.07722	0.00240
30	—	0.00000
31	0.07224	0.00340
32	—	0.00000
33	0.06786	0.00120
34	—	0.00000
35	0.06398	0.00210
36	—	0.00010
37	0.06052	0.00320
38	—	0.00010
39	0.05742	0.00370
40	—	0.00000

COSEL

		Testing Circuitry Figure A
Model	LEP100F-48	
Item	Condense 結露特性	
Object	+48V2.1A	

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°C for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is 25°C and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.

1. 結露特性試験

入力を切った状態で、恒温槽で-10℃に冷却しておき、約1時間後に恒温槽から取り出し、室温25℃、湿度40%RHの状態におき結露させ、その電気的特性の測定を行い異常のないことを確認する。

2. Values

Item	Data	Testing Conditions
Output Voltage [V]	48.031	Input Volt.:200V, Load Current.:2.1A
Line Regulation [mV]	2	Input Volt.:170~264V, Load Current.:2.1A
Load Regulation [mV]	8	Input Volt.:200V, Load Current.:0~2.1A

COSEL

Model	LEP100F-48		
Item	Leakage Current 漏洩電流	Temperature	25°C
Object		Testing Circuitry	Figure B

1. Results

Standards	Leakage Current [mA]		
	Input Volt.	Input Volt.	Input Volt.
	85 [V]	100 [V]	132 [V]
(A) DEN-AN	—	—	—
(B) IEC60950	—	—	—

Standards	Leakage Current [mA]		
	Input Volt.	Input Volt.	Input Volt.
	170 [V]	230 [V]	264 [V]
(B) IEC60950	0.36	0.42	0.56

2. Condition

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

交流入力の一相について測定し、その大きい方を漏洩電流測定値とする。

COSEL

Model	LEP100F-48		
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25°C Figure C
Object	+48V2.1A		

1. Conditions

- Input Voltage : 200 V
- Pulse Voltage : 2000 V
- Pulse Cycle : 10 mS
- Pulse Input Duration : 1 min. or more
- Load : 100 %

2. Results

Pulse Width [nS]	MODE		No protection failure should occur	DC-like Regulation of Output Voltage
		POLARITY	保護回路の誤動作がない	出力電圧の直流的変動
50	COMMON	+	OK	no fluctuation
		—	OK	no fluctuation
	NORMAL	+	OK	no fluctuation
		—	OK	no fluctuation
1000	COMMON	+	OK	no fluctuation
		—	OK	no fluctuation
	NORMAL	+	OK	no fluctuation
		—	OK	no fluctuation

COSEL

Model	LEP100F-48	Temperature	25°C
Item	Conducted Emission 雑音端子電圧	Testing Circuitry	Figure D
Object			

1. Graph

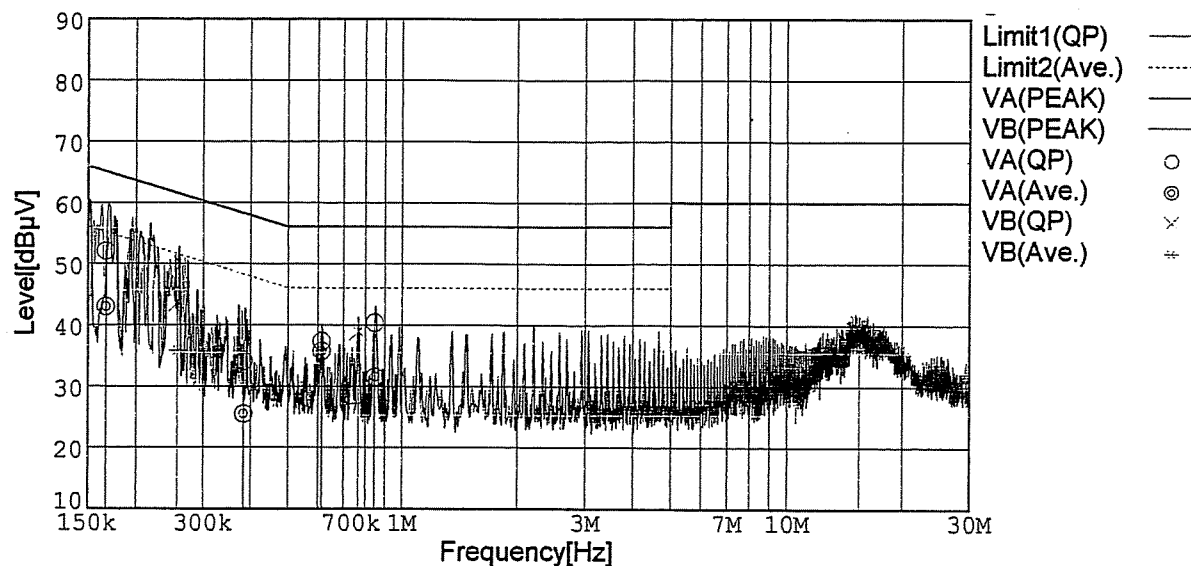
Remarks

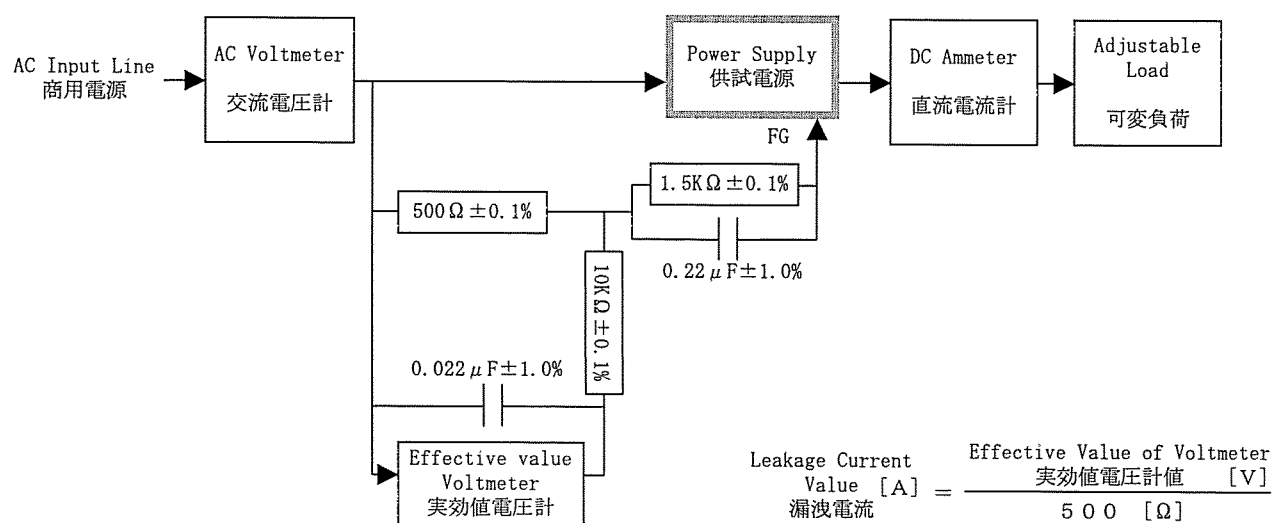
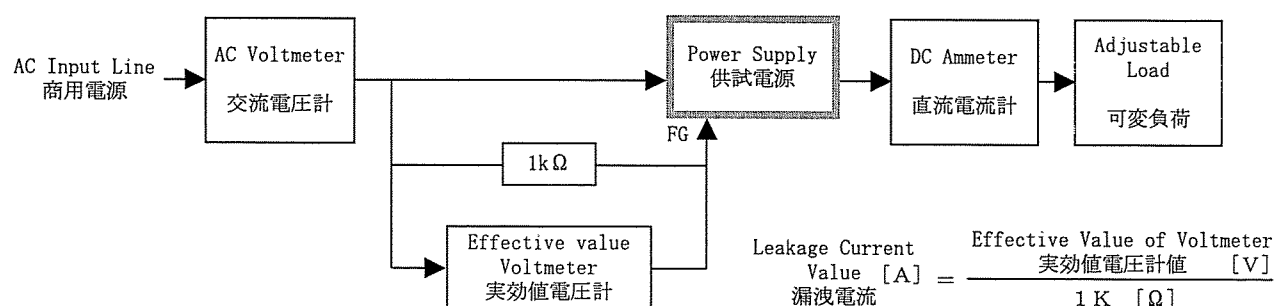
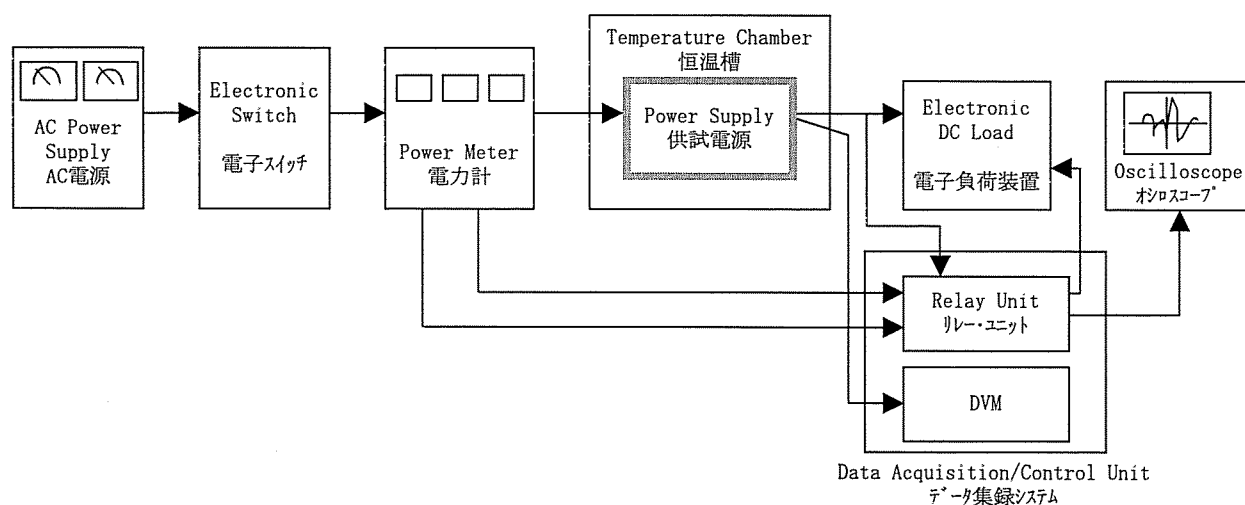
Input Volt. 230V (CISPR Pub22 Class B)

Load 100%

Limit1: [EN 55022] Class B(QP)

Limit2: [EN 55022] Class B(Ave.)





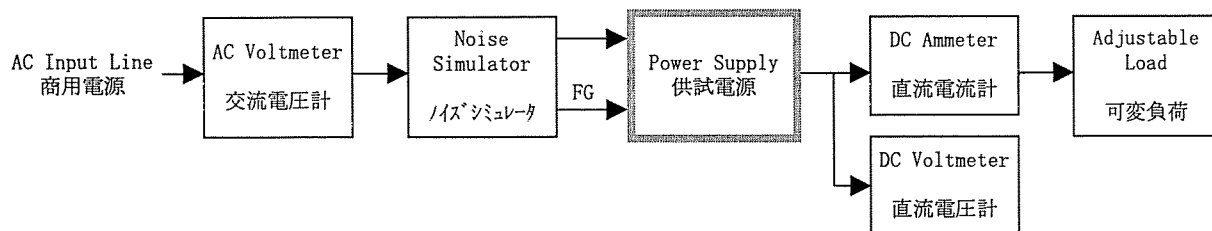


Figure C

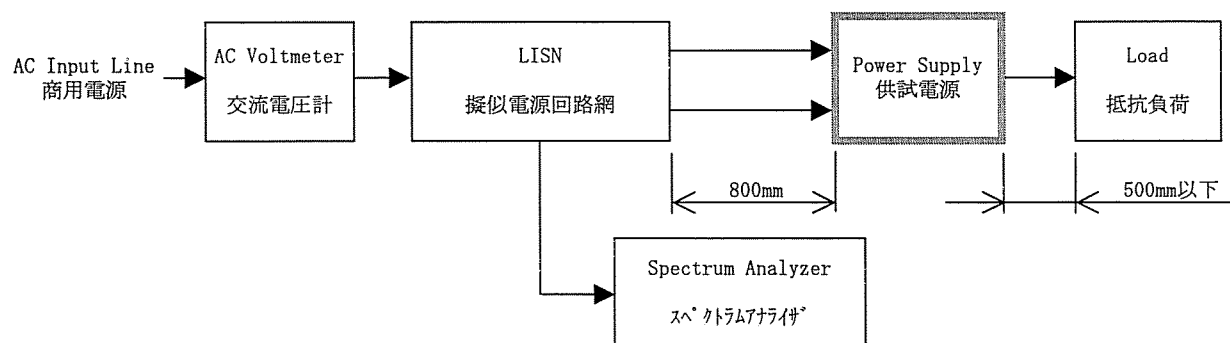


Figure D

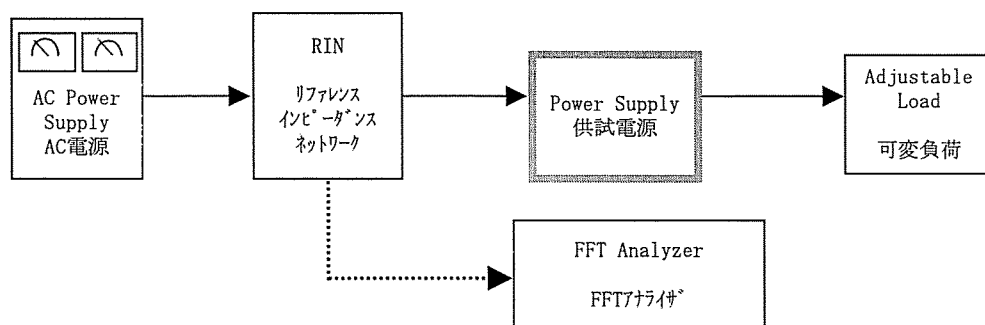


Figure E