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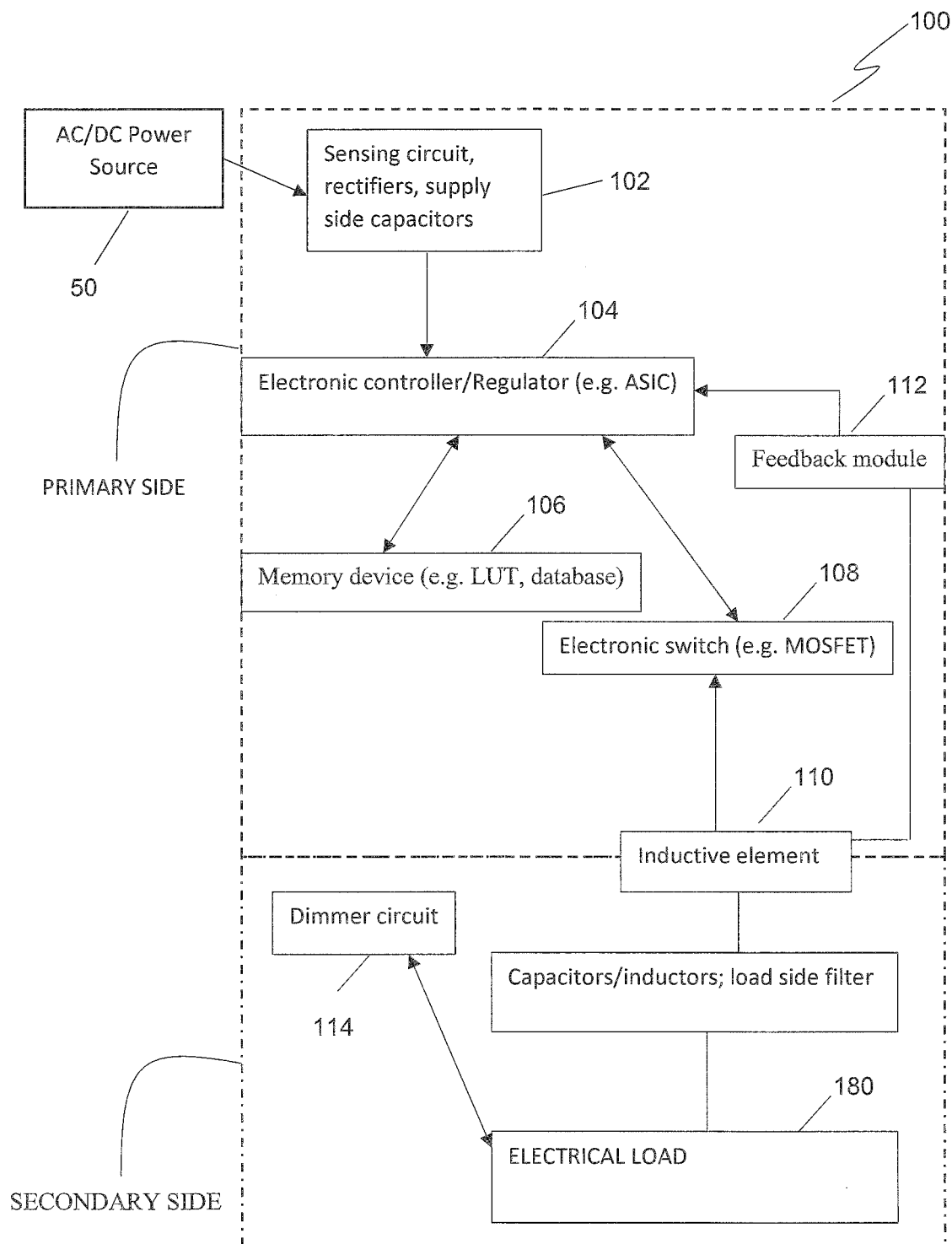
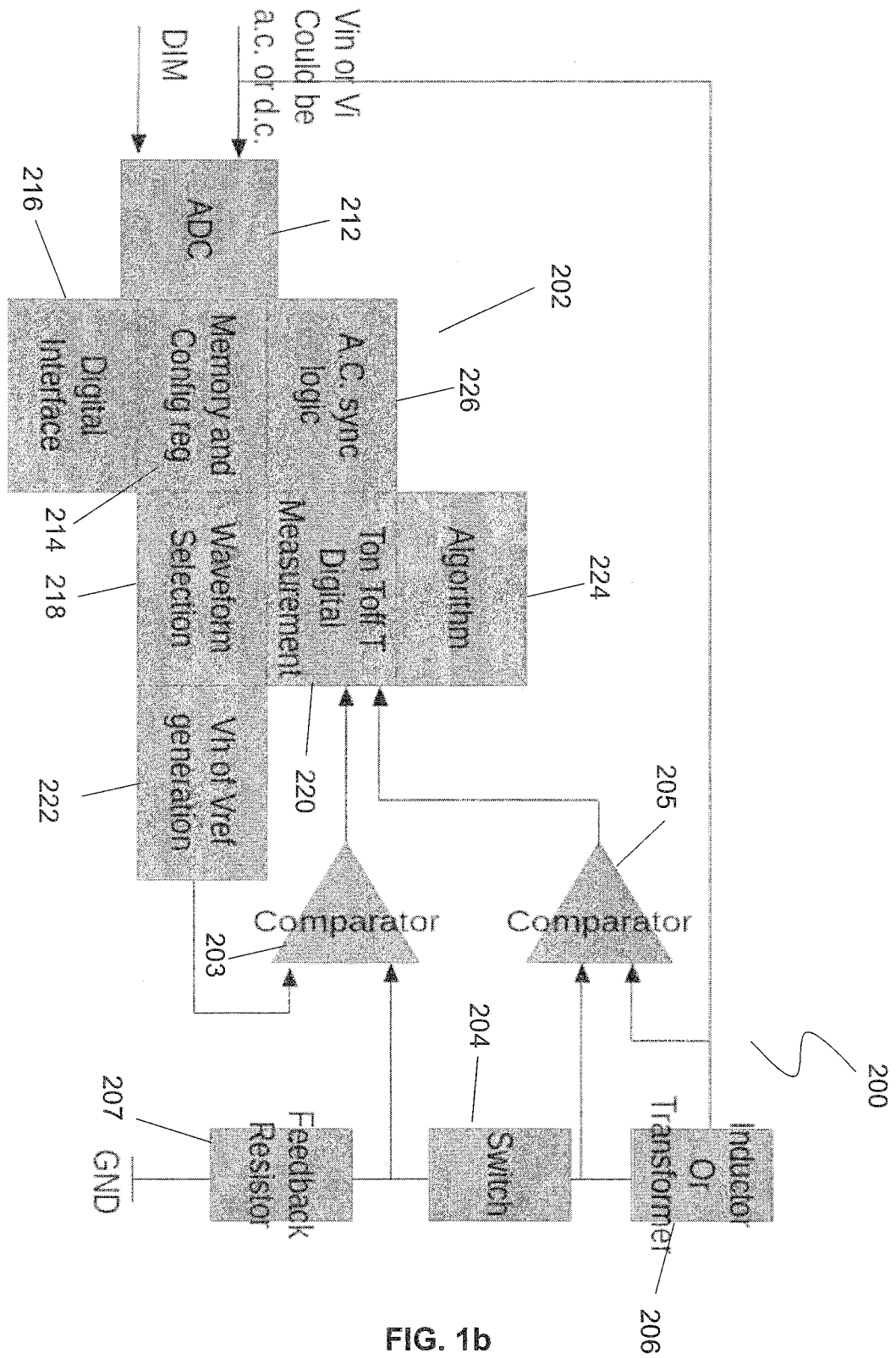


FIG. 1a



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Look up table (LUT)

Period/Frequency	Amplitude	Type
60 Hz	220V	AC Sine
50 Hz	240V	AC Sine
--	240V	DC
--	220V	DC
50Hz	120V	AC
50 Hz	100V	AC
50 Hz	230V	AC

FIG. 2

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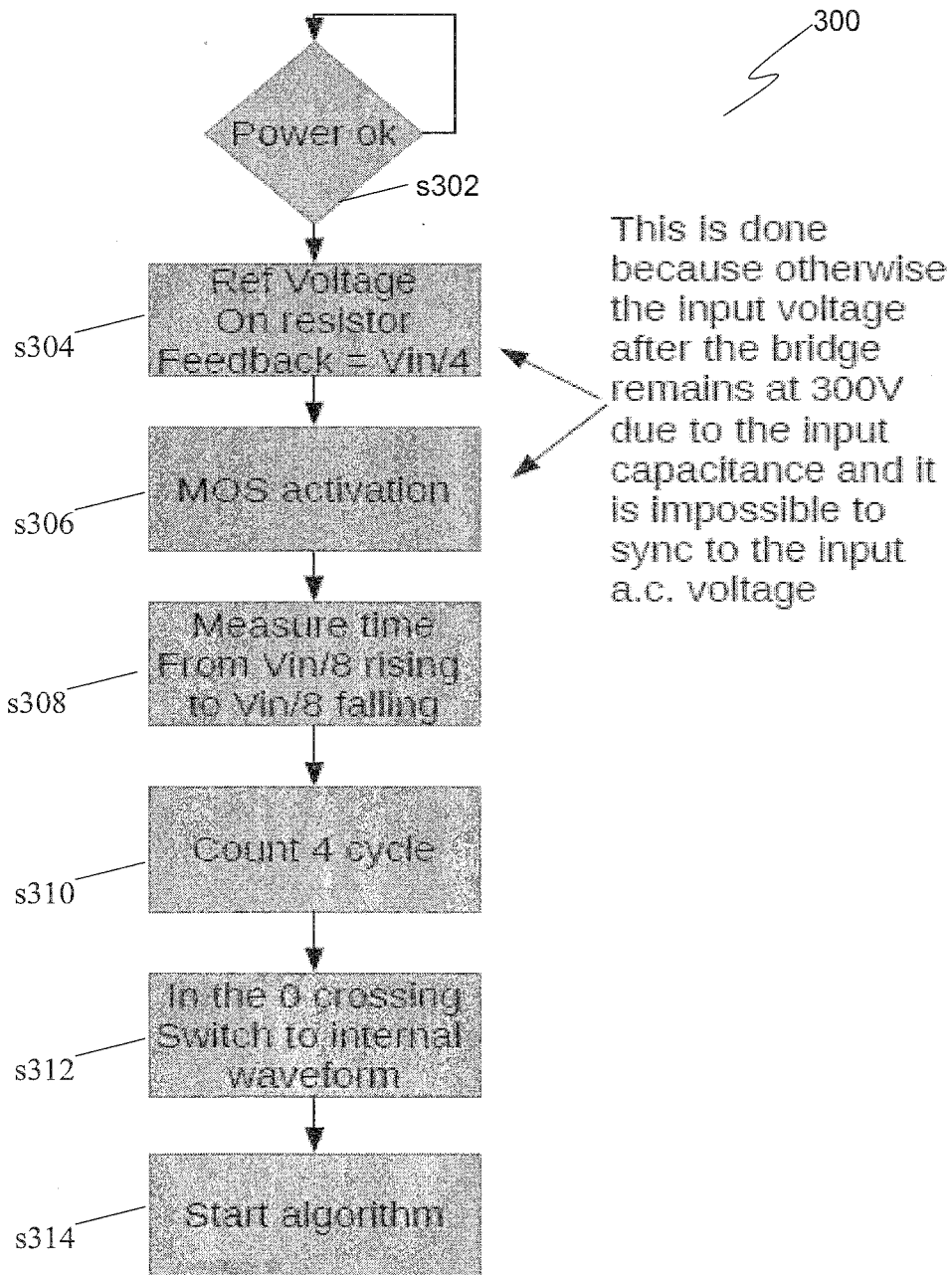


FIG. 3

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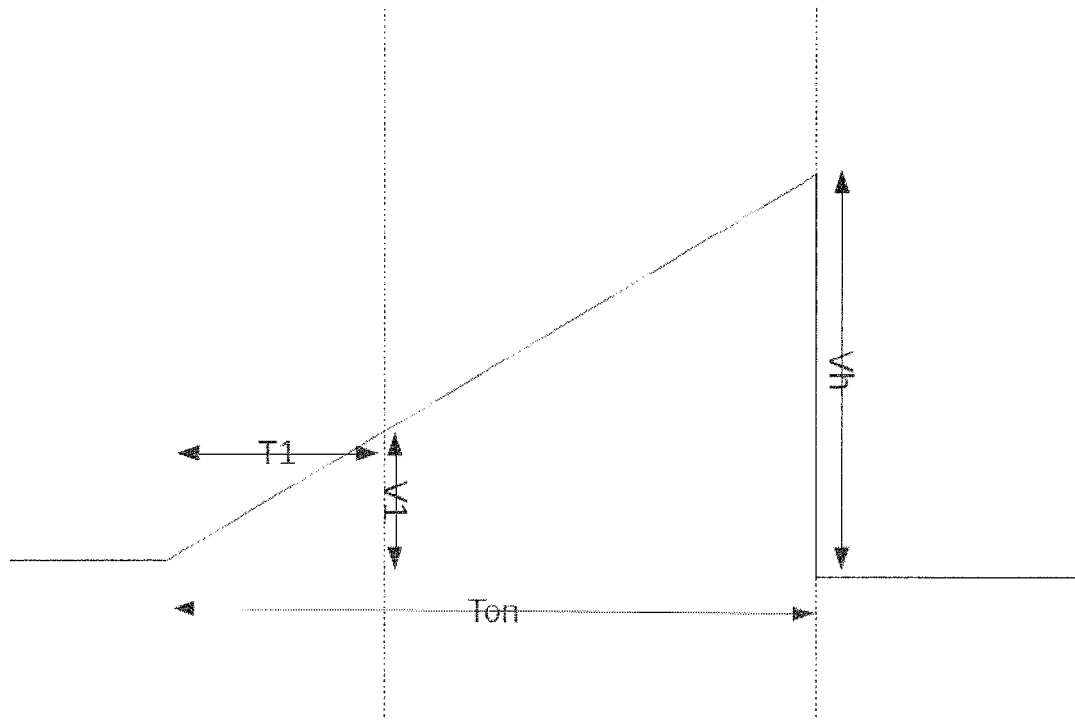


FIG. 4a

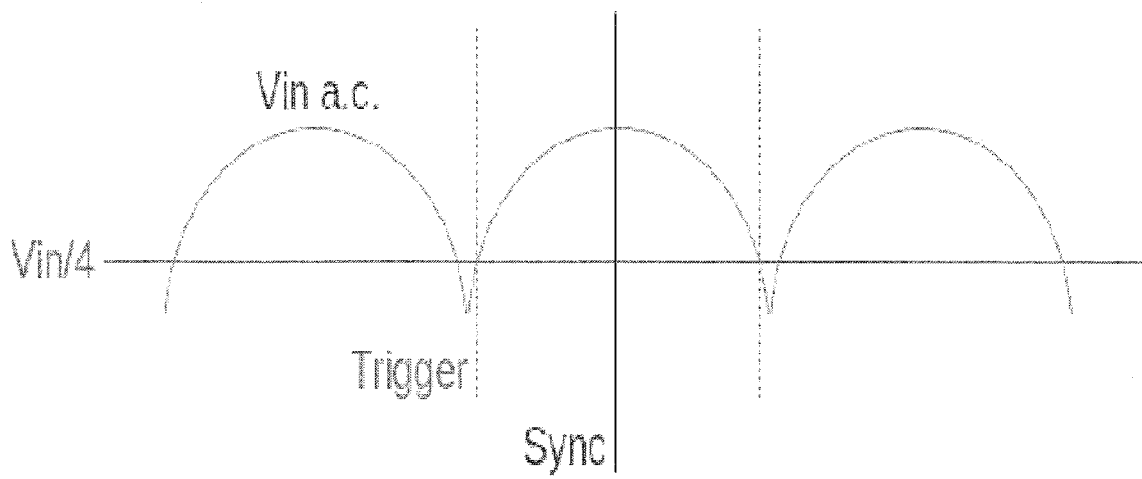


FIG. 4b

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DCM BUCK BOOST									
Transformer-390uH, Rfb-10 Ohm, 28 LED, 350mA									
Input Voltage	90Vac	110Vac	120Vac	132Vac		198Vac	220Vac	240Vac	265Vac
Input Current	0.340	0.280	0.260	0.240		0.160	0.150	0.140	0.130
Input power	31.00	31.40	31.40	31.20		32.30	33.10	33.40	34.00
Power Factor	0.985	0.984	0.982	0.985		0.992	0.996	0.986	0.975
Output voltage	85.45	85.55	85.60	85.65		86.00	86.28	86.29	86.33
Output Current	0.320	0.326	0.327	0.328		0.344	0.353	0.357	0.361
Output Power	27.4	27.8	28.0	28.1		29.6	30.5	30.8	31.2
Efficiency	88.29%	88.68%	89.14%	90.04%		91.59%	92.09%	92.10%	91.76%
Line Regulation	11.64%								
Switching Frequency	45.7	53.76	56.82	60.61		71.43	75.99	76.45	79.62
Ton	8.68	6.48	5.80	4.80		3.20	2.60	2.40	2.14
Toff	13.2	12.2	12.10	11.50		10.80	10.56	10.68	10.36
VFB	2.58	2.38	2.35	2.22		2.08	2.01	2.01	1.95
lower dimming	27mA	27mA						70mA	70mA

DCM BUCK BOOST									
Transformer-390uH, Rfb-10 Ohm, 28 LED, 400mA									
Input Voltage	90Vac	110Vac	120Vac	132Vac		198Vac	220Vac	240Vac	265Vac
Input Current	0.400	0.330	0.310	0.280		0.190	0.170	0.160	0.140
Input power	36.10	36.70	36.70	36.90		37.40	37.90	38.20	38.80
Power Factor	0.985	0.988	0.985	0.986		0.992	0.994	0.991	0.992
Output voltage	86.32	86.48	86.45	86.48		86.70	86.79	86.85	86.93
Output Current	0.370	0.376	0.376	0.379		0.393	0.398	0.403	0.409
Output Power	31.9	32.5	32.5	32.8		34.1	34.5	35.0	35.5
Efficiency	88.38%	88.51%	88.57%	88.82%		91.10%	91.14%	91.69%	91.59%
Line Regulation	9.85%								
Switching Frequency	40.65								70.62
Ton									
Toff									
VFB	3.00								2.23
lower dimming	27mA	27mA						70mA	70mA

DCM BUCK BOOST									
Transformer-390uH, Rfb-10 Ohm, 12 LED, 430mA									
Input Voltage	90Vac	110Vac	120Vac	132Vac		198Vac	220Vac	240Vac	265Vac
Input Current	0.190	0.150	0.140	0.130		0.090	0.080	0.080	0.080
Input power	17.20	17.20	17.20	17.40		18.60	19.10	19.60	20.10
Power Factor	0.988	0.996	0.995	0.994		0.981	0.969	0.969	0.942
Output voltage	39.42	39.46	39.47	39.51		39.68	39.75	39.79	39.85
Output Current	0.387	0.394	0.396	0.401		0.420	0.427	0.433	0.440
Output Power	15.3	15.5	15.6	15.8		16.7	17.0	17.2	17.5
Efficiency	88.70%	90.39%	90.87%	90.94%		89.56%	88.87%	87.94%	87.19%
Line Regulation	12.37%								
Switching Frequency	31.35	34.01	34.97	36.63		40.16	40.45	40.92	41.6
Ton	7.8	6.1	5.50	4.80		3.10	2.80	2.56	2.28
Toff	24.1	23.3	23.00	22.50		21.90	21.96	21.96	21.72
VFB	2.26	2.17	2.15	2.10		2.04	2.03	1.98	1.99
lower dimming	27mA	27mA						70mA	70mA

FIG. 5a

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CCM BUCK BOOST									
Rfb-2 Ohm, 28 LED, 350mA									
Input Voltage	90Vac	110Vac	120Vac	132Vac		198Vac	220Vac	240Vac	265Vac
Input Current	0.380	0.310	0.280	0.260		0.170	0.160	0.140	0.130
Input power	34.20	34.70	34.50	34.50		35.30	35.10	35.10	35.50
Power Factor	0.989	0.989	0.987	0.992		0.992	0.995	0.994	0.980
Output voltage	86.92	86.80	86.90	86.93		87.02	87.15	87.17	87.20
Output Current	0.342	0.340	0.344	0.346		0.352	0.357	0.358	0.361
Output Power	29.7	29.5	29.9	30.1		30.6	31.1	31.2	31.4
Efficiency	86.92%	85.05%	86.65%	87.18%		86.77%	88.64%	88.91%	88.55%
Line Regulation	5.74%								
Switching Frequency	103.3	102.5	101.6	102.5		100.8	91.91	95.42	88.03
Ton	4.48	3.76	3.48	3.20		2.56	2.24	2.16	2.20
Toff	5.52	5.96	6.40	6.32		7.36	8.44	8.32	9.00
VFB	2.85	2.61	2.56	2.45		2.21	2.19	2.16	2.12
lower dimming	60.2mA	73.3mA	76.2mA	79.6mA		82.7mA	82.8mA	82.8mA	82.6mA

CCM BUCK BOOST									
Rfb-2 Ohm, 12 LED, 370mA									
Input Voltage	90Vac	110Vac	120Vac	132Vac		198Vac	220Vac	240Vac	265Vac
Input Current	0.179	0.147	0.135	0.123		0.085	0.076	0.070	0.065
Input power	16.10	16.20	16.20	16.30		16.90	16.90	17.00	17.10
Power Factor	0.996	0.996	0.996	0.995		0.996	0.994	0.992	0.988
Output voltage	39.10	39.09	39.14	39.15		39.19	39.22	39.25	39.24
Output Current	0.361	0.362	0.365	0.366		0.372	0.374	0.375	0.376
Output Power	14.1	14.1	14.3	14.3		14.6	14.7	14.7	14.8
Efficiency	87.67%	87.23%	88.07%	87.91%		86.26%	86.79%	86.58%	86.28%
Line Regulation	4.01%								
Switching Frequency	61.27	59.1	59.67	56.82		51.65	51.12	48.08	46.21
Ton	4.16	3.8	3.48	3.12		2.44	2.36	2.28	2.00
Toff	12.24	13.2	13.36	14.44		16.84	17.20	18.60	19.72
VFB	2.16	2.06	2.07	2.04		1.96	1.92	1.92	1.92
lower dimming	94.6mA	98mA	97.6mA	92.6mA		102.1mA	102.1mA	102.1mA	102.1mA

FIG. 5b