Appendix E

Cannon FPD: Detailed Bill of Materials

Cannon FLCD 15C01

Appendix E
Cannon FPD - Detailed BOM

Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
Bill of Materials for: Canon FLCD 15CD01									
1.1	Front bezel	1	ABS	150	inj. mold	31 brass inserts	Japan Synthetic Rubber Company	screened logo	conductive paint
1.2	LED light pipe	1	polycarb	<1	inj. mold				
1.4	Adjustment PWB	1	see subassy BOM						
1.5	scr M3, 4 pnh	3							
1.7	Knob	2	ABS	1.7	inj. mold			as molded	
1.9	Power supply PWB	1	see subassy BOM						
1.10	Power switch bezel	1	ABS	4.2	inj. mold			as molded	
1.11	scr M3, 4 pnh	7							
1.14	LCD subassy	1	see subassy BOM						
1.15	Backlight assy	1	see subassy BOM						
1.16	scr M3, 4 pnh	2							
1.17	scr M3, 4 pnh	18							
1.19	Cable clamp	1	nylon	<1	inj. mold			as molded	
1.20	Power supply cover	1	steel	25	progressive die stamp			electro-galvanized	
1.21	scr M3, 10 pnh	2							
1.22	insulator	1	polyester	10	die cut				
1.23	Hitachi PWB	1	see subassy BOM						
1.24	scr M3, 4pnh	6							
1.26	NFX controller	1	see subassy BOM						
1.27	scr M3, 4 pnh	6							
1.30	Rear cover assy	1	see subassy BOM						
1.31	scr M3, 10 pnh	9							
1.32	Power supply assy	1	see subassy BOM						
1.33	scr M3, 10 pnh	4							
1.34	Base/stand	1	see subassy BOM						
Bill of Materials for: LCD subassy 1.14									
4.1	Plastic frame	1	PC-GF30	150	inj. mold	6 brass inserts			
4.2	Gasket	1	silicone rubber	n/a	dispensed				
4.3	Brightness enhancer	1	polyester	10	extruded, die cut		3M	microembossed	
4.4	scr M3, 4 pnh	6							
4.6	Large gasket	1	silicone rubber	n/a	dispensed				
4.7	Small gasket	1	silicone rubber	n/a	dispensed				
4.8	LCD panel assy	1	see subassy BOM						
4.9	Metal clip	4	Be Cu	1	stamped			Ni plate	
4.10	scr M3, 4 pnh	1							
4.12	Cable assy	1	see cable assy summary						
4.13	Hold-down clip	1	Be Cu	1	stamped			Ni plate	
4.14	scr M3, 4 pnh	1							

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Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
Bill of Materials for: Backlight assy 1.15									
5.1	Metal plate	1	steel	175	progressive die stamp			electro-galvanized	
5.2	Brass thd'd standoff	4	brass	2	screw machine				
5.4	scr M3, 4 pnh	4							
5.5	Foam gasket	4	foam rubber	<1	adhesive backed foam tape		3M	adhesive	
5.6	Nylon strain relief	1	nylon	<1	inj. mold				
5.8	Clear protector	1	plexiglass	75	inj. mold			etched both sides	
5.9	Opaque diffuser	1	polyester	10	extruded, die cut		3M	microembossed both sides	
5.10	Light pipe	1	polycarbonate	550	inj. mold				
5.11	Corner tape	4	aluminized mylar	<<1	extrude/roll form/ e-less plate		3M		
5.12	White reflector	1	polyester	15	extruded, die cut				
5.13	Light assy	4	see subassy BOM						
5.14	scr M3, 4 pnh	4							
5.16	Nylon clamp	6	nylon	1	inj. mold				
5.17	scr M3, 4 pnh	6							
5.19	Rear plate assy	1	see subassy BOM						
Bill of Materials for: Light assy 5.13									
5.13b	Cold cathode tube	1	glass, phosphor	8.7	complex				
5.13c	Shock cushion	2	silicone rubber	1.7	inj. mold				
5.13d	Cable assy	2	insulated Cu wire	4.4	complex	inj. molded connector			
Bill of Materials for: Rear plate assy 5.19									
6.1	Rear plate	1	steel	350	progressive die stamp	2 piece 18 spot welds		electro-galvanized	
6.2	Cable clamp	3	nylon	1.1	inj mold				
6.3	Plastic tube	2	polycarb	4.1	extrude/screw mach.				
6.4	scr M3, 10 pnh	2							
6.5	Flat cable toroid	6	hi-mu ferric	12	molded		Tokin		
6.6	Hold-down plate	2	steel	20.6	progressive die stamp			electro-galvanized	
6.7	scr M3, 4 pnh	4							
6.8	Caution label	1	paper	<<1				screen print ink	adhesive
Bill of Materials for: Rear cover assy 1.30									
9.1	Rear cover	1	ABS	325	inj mold		Japan Synthetic Rubber Company	as molded	conductive paint
9.2	BeCu fingers	6	BeCu	1	die stamped	heat staked to rear cover		Ni plate	
9.4	Cloth mesh	2	polyester	<1	woven	glued to rear cover			
9.5	Metal plate	1	steel	200	stamped	2 pressed in screw machine nuts		electro-galvanized	
9.7	scr M3, 4 pnh	4							

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Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
9.8	Shoulder screw	2							
9.10	Insulator	1	polyester	20	die cut				
9.11	scr M3, 5 type B	4							
Bill of Materials for: Power supply assy 1.32									
10.1	Housing	1	steel	150	progressive die stamped	2 piece, 2 spot welds		electro-galvanized	
10.2	Insulator	1	polyester	24	die cut				
10.3	Power supply PWB assy	1	see subassy BOM						
10.4	Pwr switch	1	ABS/Cu	5.2	inj. mold		Matsushita		
10.5	Pwr cord recept.	1	ABS/Cu	34	complex, inj. mold	3 wire pigtail w/ ferrite choke			
10.6	scr M3, 4 pnh	4							
10.7	Heat sink	1	aluminum	60					
10.8	scr M3, 4 pnh	8							
Bill of Materials for: Base/Stand assy 1.34									
11.1	Upright	1	UP-GF14	450	inj. mold				
11.2	Bracket 1	1	steel	44	stamped			electro-galvanized	
11.3	Bracket 2	1	steel	52	stamped			electro-galvanized	
11.4	Bracket 3	1	steel	65	stamped			electro-galvanized	
11.5	Bracket 4	1	steel	175	stamped	2 piece, 22 spot welds		none	
11.6	Bracket 6	2	steel	10	stamped				
11.7	Axle	2	steel	15	screw machine				
11.8	Spring	2	steel	8					
11.9	Bushing	2	nylon	3	inj. mold				
11.10	Swivel bearing 1	1	stainless	68	stamped				
11.12	Swivel bearing 2	1	POM	31	inj. mold				
11.13	Bracket 7	1	steel	460	stamped			textured paint	
11.14	Base weight	1	steel	450	stamped				
11.15	Rubber feet	5	silicone rubber	<1	die cut			adhesive	
11.16	Cover 1	1	ABS	33	inj. mold				
11.17	Cover 2	1	ABS	27	inj. mold				
11.18	Cover 3	1	ABS	30	inj. mold				
11.19	Cover 4	1	ABS	35	inj. mold				
11.20	Cover 5	1	ABS	20	inj. mold				
11.21	Cover 6	1	ABS	95	inj. mold				
11.22	C-clip	4	steel	<1	stamped				
11.23	Lg washers	2	steel	3.6	stamped				
11.24	Sm washers	2	steel	<1	stamped				

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Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
Bill of Materials for: LCD panel Assembly 4.8									
12.1	AMLCD cell	1	glass, misc thin films	475	complex				
12.2	Row driver TAB	3	IC chip on polyimide tape	1	complex	2mm X 12 mm IC, 30mm X 15mm tape			
12.3	Column driver TAB	10	IC chip on polyimide tape	1	complex	1.5mm X 10mm IC, 20mm X 12mm tape			
12.4	Row driver input PWB	1	see subassy BOM						
12.5	Column driver input PWB	1	see subassy BOM						
12.6	Connection flex	1	Cu thin film on polyimide base	5	complex	35mm X 12cm			
			weight sub-total	5136.6					
Bill of Material Summary for Cables									
	21 individual wires, AWG 36, totaling 352 inches; 9 connectors with average of 5 connections each and 1.5 g weight each								
Bill of Materials for: NFX Controller 1.26									
PWB:	Trace	0.008	Space	0.008	Pitch	0.016			
	ViaID	0.012	ViaOD	0.024	Material	FR4			
	Thick.	0.062	#Layers	4	Weight	120			
Board Area in Sq Inches:	38.156	(total both sides)							
Components			All Dimensions in Inches						
Part Number	Qty	#IO	Type Pkg	Lead Pitch	Length	Width			
CG21503...Japan	1	208	QFP	0.02	0.375	0.35			
AD7224KR-1	1	20	SOP	0.05	0.095	0.085			
TD62595AFT9424K	1	18	SOP	0.05	0.08	0.075			
J47AD 74ACTQ244...National	6	20	SOP	0.05	0.065	0.06			
P39AK DS26C32ATM	5	16	SOP	0.05	0.075	0.055			
MC33174D XAG448...Motorola	2	14	SOP	0.05	0.1	0.065			
SM128 LM324M	1	14	SOP	0.05	0.065	0.055			
P41AD DS26C31TM	1	16	SOP	0.05	0.075	0.055			
AH6-0054-01 N335E3B	1	100	QFP	0.025	0.215	0.175			
	1	100	I.C. Socket	0.025					
	2	3	SOT-23	0.2					
	4	3	SOT-23	0.1					
	4	4	SOT	0.06					
403 592C	1	4	SOT	0.1					
SCC 357	1	4	SOT	0.1					
	3	6	SOT	0.025					
	16	3	SOT-23	0.075					

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Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
For SOT on line #19	1	0	Al heatsink Plate						
	12	2	Electro Cap						
	10	2	Electro Cap						
	2	3	Fuse						
20.000 MHz	1	4	Crystal						
20.000 MHz	1	2	Crystal						
	8	2	Diode						
	456	2	1206 chip cap						
	27	2	misc. Discrete						
	232	2	0805 chip resistor						
Socket type w/large metal bracket	1	25	Connector	0.05					
Ni-Zero-Insert-Flex	10	12	Connector	0.025					
Ni-Post	1	10	Connector	0.07					
Ni-Post	1	3	Connector	0.07					
Ni-Post	1	4	Connector	0.07					
Ni-Post	1	8	Connector	0.07					
Bill of Materials for: Hitachi PWB 1.23									
PWB:	Trace	0.01	Space	0.01	Pitch	0.02			
	ViaID	0.012	ViaOD	0.035	Material	FR4			
	Thick.	0.062	#Layers	4	Weight	205			
Board Area in Sq Inches:	39.781	(total both sides)							
Components			All Dimensions in Inches						
Part Number	Qty	#IO	Type Pkg	Pitch	Length	Width			
5B2 HA17339	1	14	SOP	0.1	0.095	0.065			
51CT00T TL1451A4Y	1	16	SOP	0.1	0.075	0.065			
	2	3	SOT-23	0.1					
	8	3	SOT-23	0.1					
	8	2	Capacitor						
Wire Type	8	2	Capacitor						
Wire Type	10	2	Capacitor						
Wire Type	2	2	Capacitor						
Wire Type	7	2	Capacitor						
	4	6	Transformer						
	8	4	Choke						
	8	9	Transformer						
Wire Type	14	2	Resistor						
Wire Type	2	2	Resistor						
Can Type	4	2	Capacitor						
Can Type	4	2	Capacitor						
Can Type	5	2	Capacitor						

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Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
Can Type	1	2	Capacitor						
	1	2	Fuse						
	1	3	Filter						
	1	3	Variable resistor						
Open case	1	3	Connector	0.1					
Open case	1	4	Connector	0.1					
Closed case	4	4	Connector	0.1					
Closed case	4	3	Connector	0.1					
	4	4	SOT	0.1					
	26	3	SOT	0.075					
	2	5	SOT	0.035					
	14	2	Misc. Discrete						
	19	2	1206 chip capacitor						
	75	2	0805 chip resistor						
Bill of Materials for: Adjustment PWB 1.4									
PWB:	Trace	0.02	Space	0.01	Pitch	0.03			
	ViaID	0.012	ViaOD	0.035	Material	FR4			
	Thick.	0.048	#Layers	2	Weight	27			
Board Area in Sq Inches:	9.2		(total both sides)						
Components			All Dimensions in Inches						
Part Number	Qty	#IO	Type Pkg	Pitch	Length	Width			
	3	4	Variable resistor	0.1	0.95	0.65			
	1	3	Trimmer pot	0.1	0.2	0.2			
	1	2	Axial leaded resistor	0.2					
	1	2	Pilot lite LED	0.1					
	1	4	Connector	0.1					
	1	6	Connector	0.1					
Bill of Materials for: Power supply PWB assy 10.3									
PWB:	Trace	0.05	Space	0.02	Pitch	0.07			
	ViaID	0.03	ViaOD	0.06	Material	Phenolic			
	Thick.	0.062	#Layers	1	Weight	240			
Board Area in Sq Inches:	31.5	(1 side only)							
Components			All Dimensions in Inches						
Part Number	Qty	#IO	Type Pkg	Pitch	Length	Width			
M51995P	1	16	DIP	0.1	0.9	0.2			
upc494C	1	16	DIP	0.1	0.9	0.2			
2903D	1	8	DIP	0.1	0.3	0.2			
PC123	3	4	DIP	0.1	0.2	0.2			
3050C	8	3	To-220	0.1	0.75	0.4			

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Sub No. Entry No.	Name	Qty.	Material	Weight (grams)	Formation Process	Features	Supplier	Finish (top)	Finish (bottom)
Rectifier	1	4	SIP	0.2	1.1	0.8			
	4	2	L.g. electrolytic cap						
	8	2	Med e-lytic cap						
	6	6	Sm e-lytic cap						
	20	2	Radial tant cap						
	8	3	Sm transistor						
	22	2	Axial lead diode						
	45	2	Axial lead resistor						
	24	2	Wire jumper						
	3	2	Lg ferrite core toroid						
	1	8	Lg transformer						
	1	2	Fuse						
	1	2	Connector	0.1					
	1	8	Connector	0.1					
Bill of Materials for: Row driver input PWB 12.4									
PWB:	Trace	0.02	Space	0.01	Pitch	0.03			
	ViaID	0.012	ViaOD	0.035	Material	FR4			
	Thick.	0.032	#Layers	4	Weight	30			
Board Area in Sq Inches:	24	(total both sides)							
Components			All Dimensions in Inches						
Part Number	Qty	#IO	Type Pkg	Pitch					
	9	2	1206 chip capacitor						
	3	2	2515 chip capacitor						
	2	36	Connector	0.1					
Bill of Materials for: Column driver input PWB 12.3									
PWB:	Trace	0.02	Space	0.01	Pitch	0.03			
	ViaID	0.012	ViaOD	0.035	Material	FR4			
	Thick.	0.032	#Layers	2	Weight	40			
Board Area in Sq Inches:	18	(total both sides)							
Components			All Dimensions in Inches						
Part Number	Qty	#IO	Type Pkg	Pitch					
	20	2	1206 chip capacitor						
	10	2	2515 chip capacitor						
	2	36	Connector	0.1					
Total Product Weight				5798.6	Stand	3681.4			