Black Light Design

Ayrton Cobra 2



Manufacturer	**Black Light Design**
Type	**Moving head**
DMX modes	**4**
DMX footprint	**35, 45 channels**
Beam angle	**0.6-25°**
Pan range	**540°**
Tilt range	**270°**
Size (W × H × D)	**269 × 484 × 256 mm**
GDTF fixture type	**3350F977-E7B4-44B7-92DD-A4…**

Controls

Focus · Prism · Prism rotation · Zoom · CMY colour mixing · Colour temperature · Colour wheel · Strobe · Dimmer · Pan and tilt · Movement speed · Gobos · Gobo rotation

Safety-relevant functions

Fixture reset · Service functions

DMX modes

Standard_ 540	35 ch
Standard_CTO_ 540	35 ch
Extended_540	45 ch
Extended_CTO_ 540	45 ch

Standard_ 540

35 channels

Ch	Function	Default	DMX values
1	Pan	128	
2	Pan Fine	0	Fine byte of Pan
3	Tilt	128	
4	Tilt Fine	0	Fine byte of Tilt
5	Position MSpeed	0	0–225 max to min speed 226–235 blackout by movement 236–245 blackout by all wheels 246–255 no function
6	Pan Rotate	0	35–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
7	Tilt Rotate	0	35–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
8	Shutter / Strobe	11	0–10 Closed 11–20 open 21–116 ShutterStrobe · min 0.5–24.7 Hz 117–117 ShutterStrobe · max 25 Hz 118–126 open 127–179 ShutterPulse · min 0.5–24.5 Hz 180–180 ShutterPulse · max 25 Hz 181–191 open 192–244 ShutterRandom · min 0.5–24.5 Hz 245–245 ShutterRandom · max 25 Hz 246–255 open
9	Dimmer	0	0–254 closed 255–255 open
10	No Feature	0	
11	No Feature Fine	0	Fine byte of No Feature
12	No Feature Ultra Fine	0	
13	Zoom	19	0–127 narrow 128–254 mid 255–255 wide
14	Focus	90	0–127 near 128–254 mid 255–255 far
15	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
16	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
17	Zoom Mode	0	0–84 Mode Beam 85–169 Mode Spot 170–255 Special Mode

Standard_ 540 (continued)

Ch	Function	Default	DMX values
18	Color Wheel	1	0–0 Open (wheel slot 28) 1–62 Min CTO 63–63 Max CTO 64–64 Green (wheel slot 1) 65–65 Orange (wheel slot 2) 66–66 Blue (wheel slot 3) 67–67 Red (wheel slot 4) 68–68 Pink (wheel slot 5) 69–69 Medium Yellow (wheel slot 6) 70–70 Deep Purple (wheel slot 7) 71–71 Velvet Green (wheel slot 8) 72–72 Amber (wheel slot 9) 73–73 Light Blue (wheel slot 10) 74–74 Light Red (wheel slot 11) 75–75 Follies Pink (wheel slot 12) 76–76 Yellow (wheel slot 13) 77–77 Slate Blue (wheel slot 14) 78–78 Dark Green (wheel slot 15) 79–79 Dark Amber (wheel slot 16) 80–80 Medium Blue (wheel slot 17) 81–81 Magical Magenta (wheel slot 18) 82–82 Oklahoma Yellow (wheel slot 19) 83–83 Congo Blue (wheel slot 20) 84–84 UV (wheel slot 21) 85–85 Minus Green 1/4 (wheel slot 22) 86–86 Minus Green 1/2 (wheel slot 23) 87–87 CTB 1/4 (wheel slot 24) 88–88 CTB 1/2 (wheel slot 25) 89–89 CTB (wheel slot 26) 90–90 Light Amber (wheel slot 27) 91–127 Unused 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
19	Cyan	0	
20	Magenta	0	
21	Yellow	0	

Standard_ 540 (continued)

Ch	Function	Default	DMX values
22	Gobo	0	0–9 Open (wheel slot 1) 10–13 Eccentric Dot (wheel slot 2) 14–17 Line Mix 18 (wheel slot 3) 18–21 Dot Square 4 (wheel slot 4) 22–25 Square Beam 4 (wheel slot 5) 26–29 Nuclear (wheel slot 6) 30–33 Dot Line 5 (wheel slot 7) 34–37 Dot Ring 6 (wheel slot 8) 38–41 Dot Mix (wheel slot 9) 42–45 Five Spokes (wheel slot 10) 46–49 Nested Half Ring (wheel slot 11) 50–53 Eight Spokes (wheel slot 12) 54–57 Nested Ring Light (wheel slot 13) 91–101 StarDust (wheel slot 2) 102–112 IronFilings (wheel slot 3) 113–123 NestedTriangle (wheel slot 4) 124–134 Vortex (wheel slot 5) 135–145 BlackAndWhiteTarget (wheel slot 6) 146–156 SmokeRings (wheel slot 7) 157–167 DotLine11 (wheel slot 8) 168–178 NestedRingsYellow (wheel slot 9) 179–189 CMYLiquidEffect (wheel slot 10) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
23	Gobo Rotation	0	0–127 Gobo1Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max

Standard_ 540 (continued)

Ch	Function	Default	DMX values
24	Gobo 2	0	0–2 Open (wheel slot 36) 3–13 CW Max (wheel slot 2) 14–14 CW Min (wheel slot 2) 15–17 Stop (Speed=0) (wheel slot 2) 18–28 CCW Min (wheel slot 2) 29–29 CCW Max (wheel slot 2) 30–30 80% Iris Beam (wheel slot 1) 31–31 60% Iris Beam (wheel slot 2) 32–32 40% Iris Beam (wheel slot 3) 33–33 20% Iris Beam (wheel slot 4) 34–34 Dot Line 2 (wheel slot 5) 35–35 Dot Triangle 3 (wheel slot 6) 36–36 Dot Square 4 (wheel slot 7) 37–37 Dot Ring 5 (wheel slot 8) 38–38 Zig Zag Light (wheel slot 9) 39–39 Vortex Light (wheel slot 10) 40–40 Spiral (wheel slot 11) 41–41 Helix 5 (wheel slot 12) 42–42 Triangle Beam (wheel slot 13) 43–43 Daisy (wheel slot 14) 44–44 Nested Star (wheel slot 15) 45–45 Square Ring 8 (wheel slot 16) 46–46 Circular Saw 4 (wheel slot 17) 47–47 Waves Light (wheel slot 18) 48–48 Prison Bars (wheel slot 19) 49–49 Ink Stain (wheel slot 20) 50–50 Arrows (wheel slot 21) 51–51 Iris 8 (wheel slot 22) 52–52 Dot Mix 8 (wheel slot 23) 53–53 Quarter Beam NE (wheel slot 24) 54–54 Quarter Beam SE (wheel slot 25) 55–55 Quarter Beam SW (wheel slot 26) 56–56 Quarter Beam NW (wheel slot 27) 57–57 Half Beam Down (wheel slot 28) 58–58 Half Beam Up (wheel slot 29) 59–59 Half Beam Left (wheel slot 30) 60–60 Half Beam Right (wheel slot 31) 61–61 Crash Test Icon (wheel slot 32) 62–62 Split Triangle 4 (wheel slot 33) 63–63 Split Triangle 1 (wheel slot 34) 64–64 Iron Ball Light (wheel slot 35) 65–65 Open (wheel slot 36) 66–66 Vertical Line (wheel slot 37) 67–67 Bold Line (wheel slot 38) 68–68 Square Line 3 V (wheel slot 39) 69–69 Square Line 3 H (wheel slot 40) 70–70 Four Lines H (wheel slot 41) 71–71 Four Lines V (wheel slot 42) 72–72 Square Beam (wheel slot 43) 73–73 Rubik Cube (wheel slot 44) 74–74 Split Cross (wheel slot 45) 75–75 Square Beam 9 (wheel slot 46) 76–76 Dot Ring 6 (wheel slot 47) 77–77 Dot Ring 7 (wheel slot 48) 78–78 Split Circle 6 (wheel slot 49) 79–79 Dot Mix (wheel slot 50) 80–80 Triangle Beam (wheel slot 51) 81–81 Compass 4 (wheel slot 52) 82–82 Star Line 5 (wheel slot 53) 83–83 Star Beam (wheel slot 54) 84–84 Star 8 (wheel slot 55) 85–85 Star 10 (wheel slot 56) 86–86 Star 12 (wheel slot 57) 87–87 Arrow Ring 6 (wheel slot 58)

Standard_ 540 (continued)

Ch	Function	Default	DMX values
25	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Heavy Frost
26	Prism Rotation	0	0–127 Prism1Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
27	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Light Frost
28	Prism Rotation	0	0–127 Prism2Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
29	P ANDegree Blackout Coarse	0	
30	P ANDegree Blackout Coarse Fine	0	Fine byte of P ANDegree Blackout Coarse
31	P ANBlackout Size	0	
32	T ILTDegree Blackout Coarse	0	
33	T ILTDegree Blackout Coarse Fine	0	Fine byte of T ILTDegree Blackout Coarse
34	T ILTBlackout Size	0	

Standard_ 540 (continued)

Ch	Function	Default	DMX values
35	Control1	0	0–4 Unused 5–9 Display Off 10–14 Display On 15–19 Display Inv Off 20–24 Display Inv On 25–26 Auto Fan 27–28 Stage Fan 29–30 Silence Fan 31–32 Super Silence Fan 33–34 Constant Fan OFF 35–36 Constant Fan ON 37–44 unused 45–49 Square Law 50–54 Linear 55–57 1200 Hz 58–60 2400 Hz 61–63 16000 Hz 64–69 25000 Hz 70–74 Gobo Correction Off 75–79 Gobo Correction On 80–84 All Motor Reset 85–87 Scan Motor Reset 88–90 Color Motor Reset 91–93 Gobo Motor Reset 94–94 No Function 95–95 Reset P/T Fade Off 96–96 Reset P/T Fade On 97–99 Other Motor Reset 100–102 Frost Progresive OFF 103–105 Frost Progresive ON 106–108 CMY Speed Slow 109–114 CMY Speed Medium 115–117 Prerig INIT Off 118–120 Prerig INIT On 121–123 Pan Degree 540 124–126 Pan Degree 630 127–129 Tilt Degree 540 130–132 Tilt Degree 270 133–135 CTO Control: Color Wheel 136–138 CTO Control: Separate Ch 139–141 25 m Distance 142–144 15 m Distance 145–147 8 m Distance 148–150 Reset Led Fade OFF 151–153 Reset Led Fade ON 154–156 Limited Range 157–159 Full Range 160–255 unused

Standard_CTO_ 540

35 channels

Ch	Function	Default	DMX values
1	Pan	128	
2	Pan Fine	0	Fine byte of Pan
3	Tilt	128	
4	Tilt Fine	0	Fine byte of Tilt
5	Position MSpeed	0	0–225 max to min speed 226–235 blackout by movement 236–245 blackout by all wheels 246–255 no function

Standard_CTO_ 540 (continued)

Ch	Function	Default	DMX values
6	Pan Rotate	0	35–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
7	Tilt Rotate	0	35–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
8	Shutter / Strobe	11	0–10 Closed 11–20 open 21–116 ShutterStrobe · min 0.5–24.7 Hz 117–117 ShutterStrobe · max 25 Hz 118–126 open 127–179 ShutterPulse · min 0.5–24.5 Hz 180–180 ShutterPulse · max 25 Hz 181–191 open 192–244 ShutterRandom · min 0.5–24.5 Hz 245–245 ShutterRandom · max 25 Hz 246–255 open
9	Dimmer	0	0–254 closed 255–255 open
10	C TO	0	0–126 6500K 127–254 4600K 255–255 2700K
11	C TO Fine	0	Fine byte of C TO
12	No Feature	0	
13	Zoom	19	0–127 narrow 128–254 mid 255–255 wide
14	Focus	90	0–127 near 128–254 mid 255–255 far
15	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
16	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
17	Zoom Mode	0	0–84 Mode Beam 85–169 Mode Spot 170–255 Special Mode

Standard_CTO_ 540 (continued)

Ch	Function	Default	DMX values
18	Color Wheel	0	0–63 OPEN (wheel slot 28) 64–64 Green (wheel slot 1) 65–65 Orange (wheel slot 2) 66–66 Blue (wheel slot 3) 67–67 Red (wheel slot 4) 68–68 Pink (wheel slot 5) 69–69 Medium Yellow (wheel slot 6) 70–70 Deep Purple (wheel slot 7) 71–71 Velvet Green (wheel slot 8) 72–72 Amber (wheel slot 9) 73–73 Light Blue (wheel slot 10) 74–74 Light Red (wheel slot 11) 75–75 Follies Pink (wheel slot 12) 76–76 Yellow (wheel slot 13) 77–77 Slate Blue (wheel slot 14) 78–78 Dark Green (wheel slot 15) 79–79 Dark Amber (wheel slot 16) 80–80 Medium Blue (wheel slot 17) 81–81 Magical Magenta (wheel slot 18) 82–82 Oklahoma Yellow (wheel slot 19) 83–83 Congo Blue (wheel slot 20) 84–84 UV (wheel slot 21) 85–85 Minus Green 1/4 (wheel slot 22) 86–86 Minus Green 1/2 (wheel slot 23) 87–87 CTB 1/4 (wheel slot 24) 88–88 CTB 1/2 (wheel slot 25) 89–89 CTB (wheel slot 26) 90–90 Light Amber (wheel slot 27) 91–127 Unused 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
19	Cyan	0	
20	Magenta	0	
21	Yellow	0	

Standard_CTO_ 540 (continued)

Ch	Function	Default	DMX values
22	Gobo	0	0–9 Open (wheel slot 1) 10–13 Eccentric Dot (wheel slot 2) 14–17 Line Mix 18 (wheel slot 3) 18–21 Dot Square 4 (wheel slot 4) 22–25 Square Beam 4 (wheel slot 5) 26–29 Nuclear (wheel slot 6) 30–33 Dot Line 5 (wheel slot 7) 34–37 Dot Ring 6 (wheel slot 8) 38–41 Dot Mix (wheel slot 9) 42–45 Five Spokes (wheel slot 10) 46–49 Nested Half Ring (wheel slot 11) 50–53 Eight Spokes (wheel slot 12) 54–57 Nested Ring Light (wheel slot 13) 91–101 StarDust (wheel slot 2) 102–112 IronFilings (wheel slot 3) 113–123 NestedTriangle (wheel slot 4) 124–134 Vortex (wheel slot 5) 135–145 BlackAndWhiteTarget (wheel slot 6) 146–156 SmokeRings (wheel slot 7) 157–167 DotLine11 (wheel slot 8) 168–178 NestedRingsYellow (wheel slot 9) 179–189 CMYLiquidEffect (wheel slot 10) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
23	Gobo Rotation	0	0–127 Gobo1Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max

Standard_CTO_ 540 (continued)

Ch	Function	Default	DMX values
24	Gobo 2	0	0–2 Open (wheel slot 36) 3–13 CW Max (wheel slot 2) 14–14 CW Min (wheel slot 2) 15–17 Stop (Speed=0) (wheel slot 2) 18–28 CCW Min (wheel slot 2) 29–29 CCW Max (wheel slot 2) 30–30 80% Iris Beam (wheel slot 1) 31–31 60% Iris Beam (wheel slot 2) 32–32 40% Iris Beam (wheel slot 3) 33–33 20% Iris Beam (wheel slot 4) 34–34 Dot Line 2 (wheel slot 5) 35–35 Dot Triangle 3 (wheel slot 6) 36–36 Dot Square 4 (wheel slot 7) 37–37 Dot Ring 5 (wheel slot 8) 38–38 Zig Zag Light (wheel slot 9) 39–39 Vortex Light (wheel slot 10) 40–40 Spiral (wheel slot 11) 41–41 Helix 5 (wheel slot 12) 42–42 Triangle Beam (wheel slot 13) 43–43 Daisy (wheel slot 14) 44–44 Nested Star (wheel slot 15) 45–45 Square Ring 8 (wheel slot 16) 46–46 Circular Saw 4 (wheel slot 17) 47–47 Waves Light (wheel slot 18) 48–48 Prison Bars (wheel slot 19) 49–49 Ink Stain (wheel slot 20) 50–50 Arrows (wheel slot 21) 51–51 Iris 8 (wheel slot 22) 52–52 Dot Mix 8 (wheel slot 23) 53–53 Quarter Beam NE (wheel slot 24) 54–54 Quarter Beam SE (wheel slot 25) 55–55 Quarter Beam SW (wheel slot 26) 56–56 Quarter Beam NW (wheel slot 27) 57–57 Half Beam Down (wheel slot 28) 58–58 Half Beam Up (wheel slot 29) 59–59 Half Beam Left (wheel slot 30) 60–60 Half Beam Right (wheel slot 31) 61–61 Crash Test Icon (wheel slot 32) 62–62 Split Triangle 4 (wheel slot 33) 63–63 Split Triangle 1 (wheel slot 34) 64–64 Iron Ball Light (wheel slot 35) 65–65 Open (wheel slot 36) 66–66 Vertical Line (wheel slot 37) 67–67 Bold Line (wheel slot 38) 68–68 Square Line 3 V (wheel slot 39) 69–69 Square Line 3 H (wheel slot 40) 70–70 Four Lines H (wheel slot 41) 71–71 Four Lines V (wheel slot 42) 72–72 Square Beam (wheel slot 43) 73–73 Rubik Cube (wheel slot 44) 74–74 Split Cross (wheel slot 45) 75–75 Square Beam 9 (wheel slot 46) 76–76 Dot Ring 6 (wheel slot 47) 77–77 Dot Ring 7 (wheel slot 48) 78–78 Split Circle 6 (wheel slot 49) 79–79 Dot Mix (wheel slot 50) 80–80 Triangle Beam (wheel slot 51) 81–81 Compass 4 (wheel slot 52) 82–82 Star Line 5 (wheel slot 53) 83–83 Star Beam (wheel slot 54) 84–84 Star 8 (wheel slot 55) 85–85 Star 10 (wheel slot 56) 86–86 Star 12 (wheel slot 57) 87–87 Arrow Ring 6 (wheel slot 58)

Standard_CTO_ 540 (continued)

Ch	Function	Default	DMX values
25	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Heavy Frost
26	Prism Rotation	0	0–127 Prism1Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
27	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Light Frost
28	Prism Rotation	0	0–127 Prism2Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
29	P ANDegree Blackout Coarse	0	
30	P ANDegree Blackout Coarse Fine	0	Fine byte of P ANDegree Blackout Coarse
31	P ANBlackout Size	0	
32	T ILTDegree Blackout Coarse	0	
33	T ILTDegree Blackout Coarse Fine	0	Fine byte of T ILTDegree Blackout Coarse
34	T ILTBlackout Size	0	

Standard_CTO_ 540 (continued)

Ch	Function	Default	DMX values
35	Control1	0	0–4 Unused 5–9 Display Off 10–14 Display On 15–19 Display Inv Off 20–24 Display Inv On 25–26 Auto Fan 27–28 Stage Fan 29–30 Silence Fan 31–32 Super Silence Fan 33–34 Constant Fan OFF 35–36 Constant Fan ON 37–44 unused 45–49 Square Law 50–54 Linear 55–57 1200 Hz 58–60 2400 Hz 61–63 16000 Hz 64–69 25000 Hz 70–74 Gobo Correction Off 75–79 Gobo Correction On 80–84 All Motor Reset 85–87 Scan Motor Reset 88–90 Color Motor Reset 91–93 Gobo Motor Reset 94–94 No Function 95–95 Reset P/T Fade Off 96–96 Reset P/T Fade On 97–99 Other Motor Reset 100–102 Frost Progresive OFF 103–105 Frost Progresive ON 106–108 CMY Speed Slow 109–114 CMY Speed Medium 115–117 Prerig INIT Off 118–120 Prerig INIT On 121–123 Pan Degree 540 124–126 Pan Degree 630 127–129 Tilt Degree 540 130–132 Tilt Degree 270 133–135 CTO Control: Color Wheel 136–138 CTO Control: Separate Ch 139–141 25 m Distance 142–144 15 m Distance 145–147 8 m Distance 148–150 Reset Led Fade OFF 151–153 Reset Led Fade ON 154–156 Limited Range 157–159 Full Range 160–255 unused

Extended_540

45 channels

Ch	Function	Default	DMX values
1	Pan	128	
2	Pan Fine	0	Fine byte of Pan
3	Tilt	128	
4	Tilt Fine	0	Fine byte of Tilt
5	Position MSpeed	0	0–225 max to min speed 226–235 blackout by movement 236–245 blackout by all wheels 246–255 no function

Extended_540 (continued)

Ch	Function	Default	DMX values
6	Pan Rotate	0	32–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
7	Tilt Rotate	0	32–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
8	Shutter / Strobe	11	0–10 Closed 11–20 open 21–116 ShutterStrobe · min 0.5–24.7 Hz 117–117 ShutterStrobe · max 25 Hz 118–126 open 127–179 ShutterPulse · min 0.5–24.5 Hz 180–180 ShutterPulse · max 25 Hz 181–191 open 192–244 ShutterRandom · min 0.5–24.5 Hz 245–245 ShutterRandom · max 25 Hz 246–255 open
9	Dimmer	0	0–254 closed 255–255 open
10	Dimmer Fine	0	Fine byte of Dimmer
11	Reserved 11	0	
12	Reserved 12	0	
13	Reserved 13	0	
14	Zoom	19	0–127 narrow 128–254 mid 255–255 wide
15	Zoom Fine	83	Fine byte of Zoom
16	Focus	90	0–127 near 128–254 mid 255–255 far
17	Focus Fine	192	Fine byte of Focus
18	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
19	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
20	Zoom Mode	0	0–84 Mode Beam 85–169 Mode Spot 170–255 Special Mode

Extended_540 (continued)

Ch	Function	Default	DMX values
21	Color Wheel	0	0–62 OPEN (wheel slot 28) 63–63 Max CTO 64–64 Green (wheel slot 1) 65–65 Orange (wheel slot 2) 66–66 Blue (wheel slot 3) 67–67 Red (wheel slot 4) 68–68 Pink (wheel slot 5) 69–69 Medium Yellow (wheel slot 6) 70–70 Deep Purple (wheel slot 7) 71–71 Velvet Green (wheel slot 8) 72–72 Amber (wheel slot 9) 73–73 Light Blue (wheel slot 10) 74–74 Light Red (wheel slot 11) 75–75 Follies Pink (wheel slot 12) 76–76 Yellow (wheel slot 13) 77–77 Slate Blue (wheel slot 14) 78–78 Dark Green (wheel slot 15) 79–79 Dark Amber (wheel slot 16) 80–80 Medium Blue (wheel slot 17) 81–81 Magical Magenta (wheel slot 18) 82–82 Oklahoma Yellow (wheel slot 19) 83–83 Congo Blue (wheel slot 20) 84–84 UV (wheel slot 21) 85–85 Minus Green 1/4 (wheel slot 22) 86–86 Minus Green 1/2 (wheel slot 23) 87–87 CTB 1/4 (wheel slot 24) 88–88 CTB 1/2 (wheel slot 25) 89–89 CTB (wheel slot 26) 90–90 Light Amber (wheel slot 27) 91–127 Unused 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
22	Color Wheel Fine	1	Fine byte of Color Wheel
23	Cyan	0	
24	Cyan Fine	0	Fine byte of Cyan
25	Magenta	0	
26	Magenta Fine	0	Fine byte of Magenta
27	Yellow	0	
28	Yellow Fine	0	Fine byte of Yellow

Extended_540 (continued)

Ch	Function	Default	DMX values
29	Gobo	0	0–9 Open (wheel slot 1) 10–13 Eccentric Dot (wheel slot 2) 14–17 Line Mix 18 (wheel slot 3) 18–21 Dot Square 4 (wheel slot 4) 22–25 Square Beam 4 (wheel slot 5) 26–29 Nuclear (wheel slot 6) 30–33 Dot Line 5 (wheel slot 7) 34–37 Dot Ring 6 (wheel slot 8) 38–41 Dot Mix (wheel slot 9) 42–45 Five Spokes (wheel slot 10) 46–49 Nested Half Ring (wheel slot 11) 50–53 Eight Spokes (wheel slot 12) 54–57 Nested Ring Light (wheel slot 13) 91–101 StarDust (wheel slot 2) 102–112 IronFilings (wheel slot 3) 113–123 NestedTriangle (wheel slot 4) 124–134 Vortex (wheel slot 5) 135–145 BlackAndWhiteTarget (wheel slot 6) 146–156 SmokeRings (wheel slot 7) 157–167 DotLine11 (wheel slot 8) 168–178 NestedRingsYellow (wheel slot 9) 179–189 CMYLiquidEffect (wheel slot 10) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
30	Gobo Rotation	0	0–126 Gobo1Index 127–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
31	Gobo Rotation Fine	0	Fine byte of Gobo Rotation

Extended_540 (continued)

Ch	Function	Default	DMX values
32	Gobo 2	0	0–2 Open (wheel slot 36) 3–13 CW Max (wheel slot 2) 14–14 CW Min (wheel slot 2) 15–17 Stop (Speed=0) (wheel slot 2) 18–28 CCW Min (wheel slot 2) 29–29 CCW Max (wheel slot 2) 30–30 80% Iris Beam (wheel slot 1) 31–31 60% Iris Beam (wheel slot 2) 32–32 40% Iris Beam (wheel slot 3) 33–33 20% Iris Beam (wheel slot 4) 34–34 Dot Line 2 (wheel slot 5) 35–35 Dot Triangle 3 (wheel slot 6) 36–36 Dot Square 4 (wheel slot 7) 37–37 Dot Ring 5 (wheel slot 8) 38–38 Zig Zag Light (wheel slot 9) 39–39 Vortex Light (wheel slot 10) 40–40 Spiral (wheel slot 11) 41–41 Helix 5 (wheel slot 12) 42–42 Triangle Beam (wheel slot 13) 43–43 Daisy (wheel slot 14) 44–44 Nested Star (wheel slot 15) 45–45 Square Ring 8 (wheel slot 16) 46–46 Circular Saw 4 (wheel slot 17) 47–47 Waves Light (wheel slot 18) 48–48 Prison Bars (wheel slot 19) 49–49 Ink Stain (wheel slot 20) 50–50 Arrows (wheel slot 21) 51–51 Iris 8 (wheel slot 22) 52–52 Dot Mix 8 (wheel slot 23) 53–53 Quarter Beam NE (wheel slot 24) 54–54 Quarter Beam SE (wheel slot 25) 55–55 Quarter Beam SW (wheel slot 26) 56–56 Quarter Beam NW (wheel slot 27) 57–57 Half Beam Down (wheel slot 28) 58–58 Half Beam Up (wheel slot 29) 59–59 Half Beam Left (wheel slot 30) 60–60 Half Beam Right (wheel slot 31) 61–61 Crash Test Icon (wheel slot 32) 62–62 Split Triangle 4 (wheel slot 33) 63–63 Split Triangle 1 (wheel slot 34) 64–64 Iron Ball Light (wheel slot 35) 65–65 Open (wheel slot 36) 66–66 Vertical Line (wheel slot 37) 67–67 Bold Line (wheel slot 38) 68–68 Square Line 3 V (wheel slot 39) 69–69 Square Line 3 H (wheel slot 40) 70–70 Four Lines H (wheel slot 41) 71–71 Four Lines V (wheel slot 42) 72–72 Square Beam (wheel slot 43) 73–73 Rubik Cube (wheel slot 44) 74–74 Split Cross (wheel slot 45) 75–75 Square Beam 9 (wheel slot 46) 76–76 Dot Ring 6 (wheel slot 47) 77–77 Dot Ring 7 (wheel slot 48) 78–78 Split Circle 6 (wheel slot 49) 79–79 Dot Mix (wheel slot 50) 80–80 Triangle Beam (wheel slot 51) 81–81 Compass 4 (wheel slot 52) 82–82 Star Line 5 (wheel slot 53) 83–83 Star Beam (wheel slot 54) 84–84 Star 8 (wheel slot 55) 85–85 Star 10 (wheel slot 56) 86–86 Star 12 (wheel slot 57) 87–87 Arrow Ring 6 (wheel slot 58)

Extended_540 (continued)

Ch	Function	Default	DMX values
33	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Heavy Frost
34	Prism Rotation	0	0–127 Prism1Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
35	Prism Rotation Fine	0	Fine byte of Prism Rotation
36	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Light Frost
37	Prism Rotation	0	0–127 Prism2Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
38	Prism Rotation Fine	0	Fine byte of Prism Rotation
39	P ANDegree Blackout Coarse	0	
40	P ANDegree Blackout Coarse Fine	0	Fine byte of P ANDegree Blackout Coarse
41	P ANBlackout Size	0	
42	T ILTDegree Blackout Coarse	0	
43	T ILTDegree Blackout Coarse Fine	0	Fine byte of T ILTDegree Blackout Coarse
44	T ILTBlackout Size	0	

Extended_540 (continued)

Ch	Function	Default	DMX values
45	Control1	0	0–4 Unused 5–9 Display Off 10–14 Display On 15–19 Display Inv Off 20–24 Display Inv On 25–26 Auto Fan 27–28 Stage Fan 29–30 Silence Fan 31–32 Super Silence Fan 33–34 Constant Fan OFF 35–36 Constant Fan ON 37–44 unused 45–49 Square Law 50–54 Linear 55–57 1200 Hz 58–60 2400 Hz 61–63 16000 Hz 64–69 25000 Hz 70–74 Gobo Correction Off 75–79 Gobo Correction On 80–84 All Motor Reset 85–87 Scan Motor Reset 88–90 Color Motor Reset 91–93 Gobo Motor Reset 94–94 No Function 95–95 Reset P/T Fade Off 96–96 Reset P/T Fade On 97–99 Other Motor Reset 100–102 Frost Progresive OFF 103–105 Frost Progresive ON 106–108 CMY Speed Slow 109–114 CMY Speed Medium 115–117 Prerig INIT Off 118–120 Prerig INIT On 121–123 Pan Degree 540 124–126 Pan Degree 630 127–129 Tilt Degree 540 130–132 Tilt Degree 270 133–135 CTO Control: Color Wheel 136–138 CTO Control: Separate Ch 139–141 25 m Distance 142–144 15 m Distance 145–147 8 m Distance 148–150 Reset Led Fade OFF 151–153 Reset Led Fade ON 154–156 Limited Range 157–159 Full Range 160–255 unused

Extended_CTO_ 540

45 channels

Ch	Function	Default	DMX values
1	Pan	128	
2	Pan Fine	0	Fine byte of Pan
3	Tilt	128	
4	Tilt Fine	0	Fine byte of Tilt
5	Position MSpeed	0	0–225 max to min speed 226–235 blackout by movement 236–245 blackout by all wheels 246–255 no function

Extended_CTO_ 540 (continued)

Ch	Function	Default	DMX values
6	Pan Rotate	0	32–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
7	Tilt Rotate	0	32–84 Stop by SpinOut 85–127 Stop by ShortCut 128–188 CW max 189–189 CW min 190–193 Pause 194–254 CCW min 255–255 CCW max
8	Shutter / Strobe	11	0–10 Closed 11–20 open 21–116 ShutterStrobe · min 0.5–24.7 Hz 117–117 ShutterStrobe · max 25 Hz 118–126 open 127–179 ShutterPulse · min 0.5–24.5 Hz 180–180 ShutterPulse · max 25 Hz 181–191 open 192–244 ShutterRandom · min 0.5–24.5 Hz 245–245 ShutterRandom · max 25 Hz 246–255 open
9	Dimmer	0	0–254 closed 255–255 open
10	Dimmer Fine	0	Fine byte of Dimmer
11	C TO	0	0–126 6500K 127–254 4600K 255–255 2700K
12	C TO Fine	0	Fine byte of C TO
13	No Feature	0	
14	Zoom	19	0–127 narrow 128–254 mid 255–255 wide
15	Zoom Fine	83	Fine byte of Zoom
16	Focus	90	0–127 near 128–254 mid 255–255 far
17	Focus Fine	192	Fine byte of Focus
18	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
19	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
20	Zoom Mode	0	0–84 Mode Beam 85–169 Mode Spot 170–255 Special Mode

Extended_CTO_ 540 (continued)

Ch	Function	Default	DMX values
21	Color Wheel	0	0–63 OPEN (wheel slot 28) 64–64 Green (wheel slot 1) 65–65 Orange (wheel slot 2) 66–66 Blue (wheel slot 3) 67–67 Red (wheel slot 4) 68–68 Pink (wheel slot 5) 69–69 Medium Yellow (wheel slot 6) 70–70 Deep Purple (wheel slot 7) 71–71 Velvet Green (wheel slot 8) 72–72 Amber (wheel slot 9) 73–73 Light Blue (wheel slot 10) 74–74 Light Red (wheel slot 11) 75–75 Follies Pink (wheel slot 12) 76–76 Yellow (wheel slot 13) 77–77 Slate Blue (wheel slot 14) 78–78 Dark Green (wheel slot 15) 79–79 Dark Amber (wheel slot 16) 80–80 Medium Blue (wheel slot 17) 81–81 Magical Magenta (wheel slot 18) 82–82 Oklahoma Yellow (wheel slot 19) 83–83 Congo Blue (wheel slot 20) 84–84 UV (wheel slot 21) 85–85 Minus Green 1/4 (wheel slot 22) 86–86 Minus Green 1/2 (wheel slot 23) 87–87 CTB 1/4 (wheel slot 24) 88–88 CTB 1/2 (wheel slot 25) 89–89 CTB (wheel slot 26) 90–90 Light Amber (wheel slot 27) 91–127 Unused 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
22	Color Wheel Fine	0	Fine byte of Color Wheel
23	Cyan	0	
24	Cyan Fine	0	Fine byte of Cyan
25	Magenta	0	
26	Magenta Fine	0	Fine byte of Magenta
27	Yellow	0	
28	Yellow Fine	0	Fine byte of Yellow

Extended_CTO_ 540 (continued)

Ch	Function	Default	DMX values
29	Gobo	0	0–9 Open (wheel slot 1) 10–13 Eccentric Dot (wheel slot 2) 14–17 Line Mix 18 (wheel slot 3) 18–21 Dot Square 4 (wheel slot 4) 22–25 Square Beam 4 (wheel slot 5) 26–29 Nuclear (wheel slot 6) 30–33 Dot Line 5 (wheel slot 7) 34–37 Dot Ring 6 (wheel slot 8) 38–41 Dot Mix (wheel slot 9) 42–45 Five Spokes (wheel slot 10) 46–49 Nested Half Ring (wheel slot 11) 50–53 Eight Spokes (wheel slot 12) 54–57 Nested Ring Light (wheel slot 13) 91–101 StarDust (wheel slot 2) 102–112 IronFilings (wheel slot 3) 113–123 NestedTriangle (wheel slot 4) 124–134 Vortex (wheel slot 5) 135–145 BlackAndWhiteTarget (wheel slot 6) 146–156 SmokeRings (wheel slot 7) 157–167 DotLine11 (wheel slot 8) 168–178 NestedRingsYellow (wheel slot 9) 179–189 CMYLiquidEffect (wheel slot 10) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
30	Gobo Rotation	0	0–126 Gobo1Index 127–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
31	Gobo Rotation Fine	0	Fine byte of Gobo Rotation

Extended_CTO_ 540 (continued)

Ch	Function	Default	DMX values
32	Gobo 2	0	0–2 Open (wheel slot 36) 3–13 CW Max (wheel slot 2) 14–14 CW Min (wheel slot 2) 15–17 Stop (Speed=0) (wheel slot 2) 18–28 CCW Min (wheel slot 2) 29–29 CCW Max (wheel slot 2) 30–30 80% Iris Beam (wheel slot 1) 31–31 60% Iris Beam (wheel slot 2) 32–32 40% Iris Beam (wheel slot 3) 33–33 20% Iris Beam (wheel slot 4) 34–34 Dot Line 2 (wheel slot 5) 35–35 Dot Triangle 3 (wheel slot 6) 36–36 Dot Square 4 (wheel slot 7) 37–37 Dot Ring 5 (wheel slot 8) 38–38 Zig Zag Light (wheel slot 9) 39–39 Vortex Light (wheel slot 10) 40–40 Spiral (wheel slot 11) 41–41 Helix 5 (wheel slot 12) 42–42 Triangle Beam (wheel slot 13) 43–43 Daisy (wheel slot 14) 44–44 Nested Star (wheel slot 15) 45–45 Square Ring 8 (wheel slot 16) 46–46 Circular Saw 4 (wheel slot 17) 47–47 Waves Light (wheel slot 18) 48–48 Prison Bars (wheel slot 19) 49–49 Ink Stain (wheel slot 20) 50–50 Arrows (wheel slot 21) 51–51 Iris 8 (wheel slot 22) 52–52 Dot Mix 8 (wheel slot 23) 53–53 Quarter Beam NE (wheel slot 24) 54–54 Quarter Beam SE (wheel slot 25) 55–55 Quarter Beam SW (wheel slot 26) 56–56 Quarter Beam NW (wheel slot 27) 57–57 Half Beam Down (wheel slot 28) 58–58 Half Beam Up (wheel slot 29) 59–59 Half Beam Left (wheel slot 30) 60–60 Half Beam Right (wheel slot 31) 61–61 Crash Test Icon (wheel slot 32) 62–62 Split Triangle 4 (wheel slot 33) 63–63 Split Triangle 1 (wheel slot 34) 64–64 Iron Ball Light (wheel slot 35) 65–65 Open (wheel slot 36) 66–66 Vertical Line (wheel slot 37) 67–67 Bold Line (wheel slot 38) 68–68 Square Line 3 V (wheel slot 39) 69–69 Square Line 3 H (wheel slot 40) 70–70 Four Lines H (wheel slot 41) 71–71 Four Lines V (wheel slot 42) 72–72 Square Beam (wheel slot 43) 73–73 Rubik Cube (wheel slot 44) 74–74 Split Cross (wheel slot 45) 75–75 Square Beam 9 (wheel slot 46) 76–76 Dot Ring 6 (wheel slot 47) 77–77 Dot Ring 7 (wheel slot 48) 78–78 Split Circle 6 (wheel slot 49) 79–79 Dot Mix (wheel slot 50) 80–80 Triangle Beam (wheel slot 51) 81–81 Compass 4 (wheel slot 52) 82–82 Star Line 5 (wheel slot 53) 83–83 Star Beam (wheel slot 54) 84–84 Star 8 (wheel slot 55) 85–85 Star 10 (wheel slot 56) 86–86 Star 12 (wheel slot 57) 87–87 Arrow Ring 6 (wheel slot 58)

Extended_CTO_ 540 (continued)

Ch	Function	Default	DMX values
33	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Heavy Frost
34	Prism Rotation	0	0–127 Prism1Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
35	Prism Rotation Fine	0	Fine byte of Prism Rotation
36	Prism	0	0–40 Open (wheel slot 1) 41–83 Prism 1 (wheel slot 2) 84–126 Prism 2 (wheel slot 3) 127–169 Prism 3 (wheel slot 4) 170–212 Prism 4 (wheel slot 5) 213–255 Light Frost
37	Prism Rotation	0	0–127 Prism2Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
38	Prism Rotation Fine	0	Fine byte of Prism Rotation
39	P ANDegree Blackout Coarse	0	
40	P ANDegree Blackout Coarse Fine	0	Fine byte of P ANDegree Blackout Coarse
41	P ANBlackout Size	0	
42	T ILTDegree Blackout Coarse	0	
43	T ILTDegree Blackout Coarse Fine	0	Fine byte of T ILTDegree Blackout Coarse
44	T ILTBlackout Size	0	

Extended_CTO_ 540 (continued)

Ch	Function	Default	DMX values
45	Control1	0	0–4 Unused 5–9 Display Off 10–14 Display On 15–19 Display Inv Off 20–24 Display Inv On 25–26 Auto Fan 27–28 Stage Fan 29–30 Silence Fan 31–32 Super Silence Fan 33–34 Constant Fan OFF 35–36 Constant Fan ON 37–44 unused 45–49 Square Law 50–54 Linear 55–57 1200 Hz 58–60 2400 Hz 61–63 16000 Hz 64–69 25000 Hz 70–74 Gobo Correction Off 75–79 Gobo Correction On 80–84 All Motor Reset 85–87 Scan Motor Reset 88–90 Color Motor Reset 91–93 Gobo Motor Reset 94–94 No Function 95–95 Reset P/T Fade Off 96–96 Reset P/T Fade On 97–99 Other Motor Reset 100–102 Frost Progresive OFF 103–105 Frost Progresive ON 106–108 CMY Speed Slow 109–114 CMY Speed Medium 115–117 Prerig INIT Off 118–120 Prerig INIT On 121–123 Pan Degree 540 124–126 Pan Degree 630 127–129 Tilt Degree 540 130–132 Tilt Degree 270 133–135 CTO Control: Color Wheel 136–138 CTO Control: Separate Ch 139–141 25 m Distance 142–144 15 m Distance 145–147 8 m Distance 148–150 Reset Led Fade OFF 151–153 Reset Led Fade ON 154–156 Limited Range 157–159 Full Range 160–255 unused