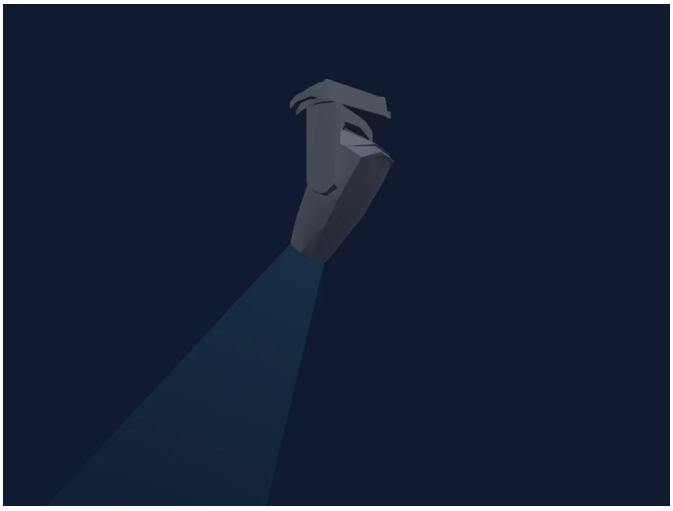
Black Light Design

Ayrton Khamsin



Manufacturer	**Black Light Design**
Type	**Profile spot**
DMX modes	**3**
DMX footprint	**40, 42, 64 channels**
Beam angle	**7.8-58°**
Pan range	**540°**
Tilt range	**270°**
Size (W × H × D)	**325 × 584 × 276 mm**
GDTF fixture type	**407682ED-E4EA-4C41-B036-3C…**

Controls

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

Safety-relevant functions

Fixture reset · Service functions

DMX modes

Basic_540	40 ch
Standard_540	42 ch
Extended_540	64 ch

Basic_540

40 channels

Ch	Function	Default	DMX values
1	Pan	128	
2	Tilt	128	
3	Position MSpeed	0	0–225 max to min speed 226–235 blackout by movement 236–245 blackout by all wheels 246–255 no function
4	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
5	Dimmer	0	0–254 closed 255–255 open
6	Reserved 6	0	
7	Reserved 7	0	
8	Reserved 8	0	
9	Zoom	128	0–127 narrow 128–254 mid 255–255 wide
10	Focus	128	0–127 near 128–254 mid 255–255 far
11	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
12	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
13	Color Wheel	0	0–3 Open (wheel slot 1) 4–7 Magenta (wheel slot 2) 8–11 Congo Blue (wheel slot 3) 12–15 Green (wheel slot 4) 16–19 Orange (wheel slot 5) 20–23 Blue (wheel slot 6) 24–27 Red (wheel slot 7) 28–39 Open (wheel slot 1) 40–52 Magenta (wheel slot 2) 53–64 Congo Blue (wheel slot 3) 65–77 Green (wheel slot 4) 78–89 Orange (wheel slot 5) 90–102 Blue (wheel slot 6) 103–114 Red (wheel slot 7) 115–127 Open (wheel slot 1) 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max

Basic_540 (continued)

Ch	Function	Default	DMX values
14	Color Wheel 2	0	0–63 Open (wheel slot 1) 64–127 QuarterCTB (wheel slot 2) 128–255 MinusGreenHalf (wheel slot 3)
15	Cyan	0	
16	Magenta	0	
17	Yellow	0	
18	C TO	0	
19	Gobo	0	0–9 Open (wheel slot 1) 10–23 Stardust (wheel slot 2) 24–37 NestedTriangle (wheel slot 3) 38–51 InfiniteStair (wheel slot 4) 52–65 Vortex (wheel slot 5) 66–79 BlackAndWhiteTarget (wheel slot 6) 80–93 NestedRingYellow (wheel slot 7) 94–109 Stardust (wheel slot 2) 110–125 NestedTriangle (wheel slot 3) 126–141 InfiniteStair (wheel slot 4) 142–157 Vortex (wheel slot 5) 158–173 BlackAndWhiteTarget (wheel slot 6) 174–189 NestedRingYellow (wheel slot 7) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
20	Gobo Rotation	0	0–126 Gobo1Index 128–187 CW max 188–188 CW min 189–192 stop 193–253 CCW min 254–255 CCW max
21	Gobo 2	0	0–9 Open (wheel slot 1) 10–23 DotLine11 (wheel slot 2) 24–37 SmokeRings (wheel slot 3) 38–51 FireWorks (wheel slot 4) 52–65 IronFillings (wheel slot 5) 66–79 DeepForest (wheel slot 6) 80–93 TreeBark (wheel slot 7) 94–109 DotLine11 (wheel slot 2) 110–125 SmokeRings (wheel slot 3) 126–141 FireWorks (wheel slot 4) 142–157 IronFillings (wheel slot 5) 158–173 DeepForest (wheel slot 6) 174–189 TreeBark (wheel slot 7) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
22	Gobo Rotation 2	0	0–126 Gobo2Index 128–187 CW max 188–188 CW min 189–192 stop 193–253 CCW min 254–255 CCW max

Basic_540 (continued)

Ch	Function	Default	DMX values
23	Animation Wheel1	0	0–7 open 8–126 CW max 127–127 CW min 128–135 stop 136–254 CCW min 255–255 CCW max
24	Iris	0	0–190 open 191–191 close 192–222 pulse max 223–223 pulse min 224–254 Pulse slow 255–255 Pulse fast
25	Prism	0	0–127 Open (wheel slot 1) 128–255 5-Facet (wheel slot 2)
26	Prism Rotation	0	0–127 Prism1Index 128–187 CW max 188–188 CW min 189–192 stop 193–254 CCW min 255–255 CCW max
27	Prism	0	0–127 Open (wheel slot 1) 128–255 Linear (wheel slot 2)
28	Prism Rotation	0	0–127 Prism2Index 128–187 CW max 188–188 CW min 189–192 stop 193–253 CCW min 254–255 CCW max
29	Frost1	0	0–254 open 255–255 Light Frost
30	Frost2	0	0–254 open 255–255 Heavy Frost
31	Blade3A	0	
32	Blade3B	0	
33	Blade1A	0	
34	Blade1B	0	
35	Blade4A	0	
36	Blade4B	0	
37	Blade2A	0	
38	Blade2B	0	
39	Shaper Rot	128	0–127 min 128–254 default 255–255 max

Basic_540 (continued)

Ch	Function	Default	DMX values
40	Control1	0	0–4 No Function 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 55–58 1200 Hz 59–62 2400 Hz 63–66 16000 Hz 67–69 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 94–96 No Function 97–99 Other Motor Reset 100–102 PreRig INIT OFF 103–105 PreRig INIT ON 106–108 CMY Speed 1 109–111 CMY Speed 2 112–114 Tilt degree 270 115–117 Tilt degree 180 118–120 Tilt degree 190 121–123 Tilt degree 200 124–126 Tilt degree 210 127–129 Tilt degree 220 130–132 Tilt degree 230 133–255 unused

Standard_540

42 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_540 (continued)

Ch	Function	Default	DMX values
6	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
7	Dimmer	0	0–254 closed 255–255 open
8	Reserved 8	0	
9	Reserved 9	0	
10	Reserved 10	0	
11	Zoom	128	0–127 narrow 128–254 mid 255–255 wide
12	Focus	128	0–127 near 128–254 mid 255–255 far
13	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
14	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
15	Color Wheel	0	0–3 Open (wheel slot 1) 4–7 Magenta (wheel slot 2) 8–11 Congo Blue (wheel slot 3) 12–15 Green (wheel slot 4) 16–19 Orange (wheel slot 5) 20–23 Blue (wheel slot 6) 24–27 Red (wheel slot 7) 28–39 Open (wheel slot 1) 40–52 Magenta (wheel slot 2) 53–64 Congo Blue (wheel slot 3) 65–77 Green (wheel slot 4) 78–89 Orange (wheel slot 5) 90–102 Blue (wheel slot 6) 103–114 Red (wheel slot 7) 115–127 Open (wheel slot 1) 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
16	Color Wheel 2	0	0–63 Open (wheel slot 1) 64–127 QuarterCTB (wheel slot 2) 128–255 MinusGreenHalf (wheel slot 3)
17	Cyan	0	
18	Magenta	0	
19	Yellow	0	
20	C TO	0	

Standard_540 (continued)

Ch	Function	Default	DMX values
21	Gobo	0	0–9 Open (wheel slot 1) 10–23 Stardust (wheel slot 2) 24–37 NestedTriangle (wheel slot 3) 38–51 InfiniteStair (wheel slot 4) 52–65 Vortex (wheel slot 5) 66–79 BlackAndWhiteTarget (wheel slot 6) 80–93 NestedRingYellow (wheel slot 7) 94–109 Stardust (wheel slot 2) 110–125 NestedTriangle (wheel slot 3) 126–141 InfiniteStair (wheel slot 4) 142–157 Vortex (wheel slot 5) 158–173 BlackAndWhiteTarget (wheel slot 6) 174–189 NestedRingYellow (wheel slot 7) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
22	Gobo Rotation	0	0–126 Gobo1Index 128–187 CW max 188–188 CW min 189–192 stop 193–253 CCW min 254–255 CCW max
23	Gobo 2	0	0–9 Open (wheel slot 1) 10–23 DotLine11 (wheel slot 2) 24–37 SmokeRings (wheel slot 3) 38–51 FireWorks (wheel slot 4) 52–65 IronFillings (wheel slot 5) 66–79 DeepForest (wheel slot 6) 80–93 TreeBark (wheel slot 7) 94–109 DotLine11 (wheel slot 2) 110–125 SmokeRings (wheel slot 3) 126–141 FireWorks (wheel slot 4) 142–157 IronFillings (wheel slot 5) 158–173 DeepForest (wheel slot 6) 174–189 TreeBark (wheel slot 7) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
24	Gobo Rotation 2	0	0–126 Gobo2Index 128–187 CW max 188–188 CW min 189–192 stop 193–253 CCW min 254–255 CCW max
25	Animation Wheel1	0	0–7 open 8–126 CW max 127–127 CW min 128–135 stop 136–254 CCW min 255–255 CCW max
26	Iris	0	0–190 open 191–191 close 192–222 pulse max 223–223 pulse min 224–254 Pulse slow 255–255 Pulse fast

Standard_540 (continued)

Ch	Function	Default	DMX values
27	Prism	0	0–127 Open (wheel slot 1) 128–255 5-Facet (wheel slot 2)
28	Prism Rotation	0	0–127 Prism1Index 128–187 CW max 188–188 CW min 189–192 stop 193–254 CCW min 255–255 CCW max
29	Prism	0	0–127 Open (wheel slot 1) 128–255 Linear (wheel slot 2)
30	Prism Rotation	0	0–127 Prism2Index 128–187 CW max 188–188 CW min 189–192 stop 193–253 CCW min 254–255 CCW max
31	Frost1	0	0–254 open 255–255 Light Frost
32	Frost2	0	0–254 open 255–255 Heavy Frost
33	Blade3A	0	
34	Blade3B	0	
35	Blade1A	0	
36	Blade1B	0	
37	Blade4A	0	
38	Blade4B	0	
39	Blade2A	0	
40	Blade2B	0	
41	Shaper Rot	128	0–127 min 128–254 default 255–255 max

Standard_540 (continued)

Ch	Function	Default	DMX values
42	Control1	0	0–4 No Function 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 55–58 1200 Hz 59–62 2400 Hz 63–66 16000 Hz 67–69 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 94–96 No Function 97–99 Other Motor Reset 100–102 PreRig INIT OFF 103–105 PreRig INIT ON 106–108 CMY Speed 1 109–111 CMY Speed 2 112–114 Tilt degree 270 115–117 Tilt degree 180 118–120 Tilt degree 190 121–123 Tilt degree 200 124–126 Tilt degree 210 127–129 Tilt degree 220 130–132 Tilt degree 230 133–255 unused

Extended_540

64 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	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
7	Dimmer	0	0–254 closed 255–255 open
8	Dimmer Fine	0	Fine byte of Dimmer
9	Reserved 9	0	
10	Reserved 10	0	
11	Reserved 11	0	
12	Zoom	128	0–127 narrow 128–254 mid 255–255 wide
13	Zoom Fine	0	Fine byte of Zoom
14	Focus	128	0–127 near 128–254 mid 255–255 far
15	Focus Fine	0	Fine byte of Focus
16	Focus1Distance	0	0–50 NoAutoFocus 51–100 5m 101–150 7_5m 151–200 10m 201–255 15m
17	Focus1Adjust	0	0–127 near 128–254 mid 255–255 far
18	Color Wheel	0	0–3 Open (wheel slot 1) 4–7 Magenta (wheel slot 2) 8–11 Congo Blue (wheel slot 3) 12–15 Green (wheel slot 4) 16–19 Orange (wheel slot 5) 20–23 Blue (wheel slot 6) 24–27 Red (wheel slot 7) 28–39 Open (wheel slot 1) 40–52 Magenta (wheel slot 2) 53–64 Congo Blue (wheel slot 3) 65–77 Green (wheel slot 4) 78–89 Orange (wheel slot 5) 90–102 Blue (wheel slot 6) 103–114 Red (wheel slot 7) 115–127 Open (wheel slot 1) 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
19	Color Wheel Fine	0	Fine byte of Color Wheel
20	Color Wheel 2	0	0–63 Open (wheel slot 1) 64–127 QuarterCTB (wheel slot 2) 128–255 MinusGreenHalf (wheel slot 3)

Extended_540 (continued)

Ch	Function	Default	DMX values
21	Cyan	0	
22	Cyan Fine	0	Fine byte of Cyan
23	Magenta	0	
24	Magenta Fine	0	Fine byte of Magenta
25	Yellow	0	
26	Yellow Fine	0	Fine byte of Yellow
27	C TO	0	
28	C TO Fine	0	Fine byte of C TO
29	Gobo	0	0–9 Open (wheel slot 1) 10–23 Stardust (wheel slot 2) 24–37 NestedTriangle (wheel slot 3) 38–51 InfiniteStair (wheel slot 4) 52–65 Vortex (wheel slot 5) 66–79 BlackAndWhiteTarget (wheel slot 6) 80–93 NestedRingYellow (wheel slot 7) 94–109 Stardust (wheel slot 2) 110–125 NestedTriangle (wheel slot 3) 126–141 InfiniteStair (wheel slot 4) 142–157 Vortex (wheel slot 5) 158–173 BlackAndWhiteTarget (wheel slot 6) 174–189 NestedRingYellow (wheel slot 7) 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 128–188 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
32	Gobo 2	0	0–9 Open (wheel slot 1) 10–23 DotLine11 (wheel slot 2) 24–37 SmokeRings (wheel slot 3) 38–51 FireWorks (wheel slot 4) 52–65 IronFillings (wheel slot 5) 66–79 DeepForest (wheel slot 6) 80–93 TreeBark (wheel slot 7) 94–109 DotLine11 (wheel slot 2) 110–125 SmokeRings (wheel slot 3) 126–141 FireWorks (wheel slot 4) 142–157 IronFillings (wheel slot 5) 158–173 DeepForest (wheel slot 6) 174–189 TreeBark (wheel slot 7) 190–220 CW max 221–221 CW min 222–223 Stop 224–254 CCW min 255–255 CCW max
33	Gobo Rotation 2	0	0–126 Gobo2Index 128–188 CW max 189–189 CW min 190–193 stop 194–254 CCW min 255–255 CCW max
34	Gobo Rotation 2 Fine	0	Fine byte of Gobo Rotation 2

Extended_540 (continued)

Ch	Function	Default	DMX values
35	Animation Wheel1	0	0–7 open 8–126 CW max 127–127 CW min 128–135 stop 136–254 CCW min 255–255 CCW max
36	Iris	0	0–190 open 191–191 close 192–222 pulse max 223–223 pulse min 224–254 Pulse slow 255–255 Pulse fast
37	Iris Fine	0	Fine byte of Iris
38	Prism	0	0–127 Open (wheel slot 1) 128–255 5-Facet (wheel slot 2)
39	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
40	Prism Rotation Fine	0	Fine byte of Prism Rotation
41	Prism	0	0–127 Open (wheel slot 1) 128–255 Linear (wheel slot 2)
42	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
43	Prism Rotation Fine	0	Fine byte of Prism Rotation
44	Frost1	0	0–254 open 255–255 Light Frost
45	Frost2	0	0–254 open 255–255 Heavy Frost
46	Blade3A	0	
47	Blade3A Fine	0	Fine byte of Blade3A
48	Blade3B	0	
49	Blade3B Fine	0	Fine byte of Blade3B
50	Blade1A	0	
51	Blade1A Fine	0	Fine byte of Blade1A
52	Blade1B	0	
53	Blade1B Fine	0	Fine byte of Blade1B
54	Blade4A	0	
55	Blade4A Fine	0	Fine byte of Blade4A
56	Blade4B	0	
57	Blade4B Fine	0	Fine byte of Blade4B
58	Blade2A	0	
59	Blade2A Fine	0	Fine byte of Blade2A
60	Blade2B	0	
61	Blade2B Fine	0	Fine byte of Blade2B

Extended_540 (continued)

Ch	Function	Default	DMX values
62	Shaper Rot	128	0–127 min 128–254 default 255–255 max
63	Shaper Rot Fine	0	Fine byte of Shaper Rot
64	Control1	0	0–4 No Function 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 55–58 1200 Hz 59–62 2400 Hz 63–66 16000 Hz 67–69 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 94–96 No Function 97–99 Other Motor Reset 100–102 PreRig INIT OFF 103–105 PreRig INIT ON 106–108 CMY Speed 1 109–111 CMY Speed 2 112–114 Tilt degree 270 115–117 Tilt degree 180 118–120 Tilt degree 190 121–123 Tilt degree 200 124–126 Tilt degree 210 127–129 Tilt degree 220 130–132 Tilt degree 230 133–255 unused