



Dimmer Doubler™

User Manual

Revision A

The Dimmer Doubler is
protected by US patent
#5,323,088.

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Dimmer Doubler™ Technology

ETC's Dimmer Doubler™ technology allows you to double the number of fixtures in your system without adding dimmer modules or running additional cable. The key to this system is the Dimmer Doubler.

The Dimmer Doubler is installed between a Sensor dimmer module and two ETC Source Four 77 volt fixtures. It splits the output of a single dimmer into two, separately-controlled outputs. You can then use an ETC control console to independently control the output of the two fixtures.

To take advantage of the benefits of ETC Dimmer Doubler technology, the following elements are required:

- Source Four fixtures with UL Listed connectors and HPL 550/77 lamps
- Dimmer Doublers with UL Listed input and output connectors
- Sensor dimming equipment with CEM electronics
- Control console with electronic patch and a minimum of one DMX512 output

Each DMX512 output can control 256 dimmers operating as 512 Dimmer Doubled channels. Systems with more than 256 dimmers must have two DMX512 outputs in the rack and the console.

Configuration

Source Four Fixtures

Source Four fixtures must be equipped/modified in the following ways to be used in Dimmer Doubled dimming systems.



CAUTION: *Dimmer Doublers and Source Four fixtures are UL Listed as an integrated system using the connectors indicated in this manual. They are not UL Listed when used with any other connector.*

Connector for Source Four fixtures used with Dimmer Doublers

The UL Listed connector for a Source Four fixture used with a Dimmer Doubler is the NEMA L2-15P: 15A, 125V, two-pole, three wire, grounding Twist-Lock[®] connector. These connectors may be ordered installed from the factory for a charge, or they can be installed by the customer.

Lamp Cap Modification

The HPL 550/77 lamp has a third pin on the lamp base that prevents it from being inadvertently installed in a standard line-voltage fixture. The Phillips-head screw next to the socket in the lamp cap must be removed before a 77V lamp can be installed.

550W/77V Lamp

The light output of the Source Four fixture using an HPL 550/77 lamp is equivalent to the performance of the same fixture equipped with a 575W/115V lamp. Equal performance at 25 fewer Watts is due to the smaller filament on the 77V lamp.



WARNING: *DO NOT operate Source Four fixtures with HPL 550/77 lamps on standard line voltage dimming circuits or outlets.*

Dimmer Doubler



CAUTION: *Dimmer Doublers and Source Four fixtures are UL Listed as an integrated system using the connectors indicated in this manual. They are not UL Listed when used with any other connector.*

Dimmer Doubler Input Connector

The Dimmer Doubler is UL Listed only when the input (single cable) side is equipped with one of the following connector types:

- Two pin and ground (2P&G), 20A pin connector
- Grounded 20A Twist-Lock[®] connector, NEMA L5-20P

These connectors may be ordered installed from the factory for a charge, or they can be installed by the customer.

Dimmer Doubler Load Connectors

Dimmer Doublers are supplied with installed NEMA L5-15R 15A 125V two-pole, three-wire, grounded Twist-Lock[®] connectors. The UL Listing for the Dimmer Doubler requires that it be provided with both load connectors installed.

Sensor Dimmers

To set up a Sensor CEM dimming system running v3.1 software or later for use with Dimmer Doublers, you must use the Sensor Control Electronics Module (CEM) to put the specific dimmer(s) that will be connected to Dimmer Doublers into Dimmer Doubler mode.

Dimmer Doublers are provided with built-in circuit mimic lamps that show when the circuits are energized. They are labeled “A” and “B” and reflect the individual output of each circuit.

Enable dimmer(s) for Dimmer Doubler operation:

Step 1: On the Sensor CEM, press **[Setup] [1]**.

Step 2: Use the number keys to enter the number of the dimmer you want to put into Dimmer Doubler mode and press **[Enter]**.



Step 3: Press **[↓] [↓] [↓] [Enter]** to select Dimmer Doubler mode. The display is shown above.

Step 4: Select another dimmer number to edit or press **[Exit]** once to return to the Setup display, or twice to return to the Status display.

Control Consoles

For information on using Dimmer Doubling technology with Obsession II, Express, Expression 3/Insight 3 and Emphasis Control Systems, please see each console's user manual.

The output of a dimmer in Dimmer Doubler mode is split into two halves. The individual halves can be controlled separately. On ETC consoles, for example, the halves of dimmer 1 become dimmers 1A and 1B. On other consoles, these dimmers are patched as dimmer 1 and 257. The "A" side of doubled dimmers is assigned to DMX 1-256 and the "B" side of those dimmers is assigned to DMX 257-512. Dimmers operating in Normal mode are controlled by their corresponding "A" side number.

You can patch doubled dimmers to any channel, just as you would with "normal" dimmers. you do not need to patch the "A" and "B" sides of the same dimmer to the same channel. You can also apply different proportions in a proportional patch to the "A" and "B" sides of the same dimmer.

The table below shows dimmers 1 and 3 doubled, and dimmers 2 and 4 in Normal mode:

Output	Console Patch Display	Output Controlled	Mode of Operation
1A	Dimmer 1	1A	Dimmer Doubled
1B	Dimmer 257	1B	Dimmer Doubled
2A	Dimmer 2	2	Normal
2B	Dimmer 258	None	Not Used
3A	Dimmer 3	3A	Dimmer Doubled
3B	Dimmer 259	3B	Dimmer Doubled
4A	Dimmer 4	4	Normal
4B	Dimmer 260	None	Not Used

The following chart shows the actual correlation between the "A" and "B" outputs and the actual DMX512 numbers you would use to access each half of the doubled dimmer. It is a handy patching guide for use when not taking advantage of the built-in patch functions of an ETC console.

A/B Doubled Dimmer Pairs to Corresponding DMX512 Addresses — DMX512 Input A (1st Universe)

Example: Doubled dimmer pair 151A and 151B correspond to DMX Addresses 151 and 407.

A/B	1	2	3	4	5	6	7	8	9	10	A/B
1	1 / 257	2 / 258	3 / 259	4 / 260	5 / 261	6 / 262	7 / 263	8 / 264	9 / 265	10 / 266	10
11	11 / 267	12 / 268	13 / 269	14 / 270	15 / 271	16 / 272	17 / 273	18 / 274	19 / 275	20 / 276	20
21	21 / 277	22 / 278	23 / 279	24 / 280	25 / 281	26 / 282	27 / 283	28 / 284	29 / 285	30 / 286	30
31	31 / 287	32 / 288	33 / 289	34 / 290	35 / 291	36 / 292	37 / 293	38 / 294	39 / 295	40 / 296	40
41	41 / 297	42 / 298	43 / 299	44 / 300	45 / 301	46 / 302	47 / 303	48 / 304	49 / 305	50 / 306	50
51	51 / 307	52 / 308	53 / 309	54 / 310	55 / 311	56 / 312	57 / 313	58 / 314	59 / 315	60 / 316	60
61	61 / 317	62 / 318	63 / 319	64 / 320	65 / 321	66 / 322	67 / 323	68 / 324	69 / 325	70 / 326	70
71	71 / 327	72 / 328	73 / 329	74 / 330	75 / 331	76 / 332	77 / 333	78 / 334	79 / 335	80 / 336	80
81	81 / 337	82 / 338	83 / 339	84 / 340	85 / 341	86 / 342	87 / 343	88 / 344	89 / 345	90 / 346	90
91	91 / 347	92 / 348	93 / 349	94 / 350	95 / 351	96 / 352	97 / 353	98 / 354	99 / 355	100 / 356	100
101	101 / 357	102 / 358	103 / 359	104 / 360	105 / 361	106 / 362	107 / 363	108 / 364	109 / 365	110 / 366	110
111	111 / 367	112 / 368	113 / 369	114 / 370	115 / 371	116 / 372	117 / 373	118 / 374	119 / 375	120 / 376	120
121	121 / 377	122 / 378	123 / 379	124 / 380	125 / 381	126 / 382	127 / 383	128 / 384	129 / 385	130 / 386	130
131	131 / 387	132 / 388	133 / 389	134 / 390	135 / 391	136 / 392	137 / 393	138 / 394	139 / 395	140 / 396	140
141	141 / 397	142 / 398	143 / 399	144 / 400	145 / 401	146 / 402	147 / 403	148 / 404	149 / 405	150 / 406	150
151	151 / 407	152 / 408	153 / 409	154 / 410	155 / 411	156 / 412	157 / 413	158 / 414	159 / 415	160 / 416	160
161	161 / 417	162 / 418	163 / 419	164 / 420	165 / 421	166 / 422	167 / 423	168 / 424	169 / 425	170 / 426	170
171	171 / 427	172 / 428	173 / 429	174 / 430	175 / 431	176 / 432	177 / 433	178 / 434	179 / 435	180 / 436	180
181	181 / 437	182 / 438	183 / 439	184 / 440	185 / 441	186 / 442	187 / 443	188 / 444	189 / 445	190 / 446	190
191	191 / 447	192 / 448	193 / 449	194 / 450	195 / 451	196 / 452	197 / 453	198 / 454	199 / 455	200 / 456	200
201	201 / 457	202 / 458	203 / 459	204 / 460	205 / 461	206 / 462	207 / 463	208 / 464	209 / 465	210 / 466	210
211	211 / 467	212 / 468	213 / 469	214 / 470	215 / 471	216 / 472	217 / 473	218 / 474	219 / 475	220 / 476	220
221	221 / 477	222 / 478	223 / 479	224 / 480	225 / 481	226 / 482	227 / 483	228 / 484	229 / 485	230 / 486	230
231	231 / 487	232 / 488	233 / 489	234 / 490	235 / 491	236 / 492	237 / 493	238 / 494	239 / 495	240 / 496	240
241	241 / 497	242 / 498	243 / 499	244 / 500	245 / 501	246 / 502	247 / 503	248 / 504	249 / 505	250 / 506	250
251	251 / 507	252 / 508	253 / 509	254 / 510	255 / 511	256 / 512					256

A/B Doubled Dimmer Pairs to Corresponding DMX512 Addresses — DMX512 Input B (2nd Universe)

Example: Doubled dimmer pair 651A and 651B correspond to DMX Addresses 651 and 907.

A/B	1	2	3	4	5	6	7	8	9	10	A/B
513			513 / 769	514 / 770	515 / 771	516 / 772	517 / 773	518 / 774	519 / 775	520 / 776	520
521	521 / 777	522 / 778	523 / 779	524 / 780	525 / 781	526 / 782	527 / 783	528 / 784	529 / 785	530 / 786	530
531	531 / 787	532 / 788	533 / 789	534 / 790	535 / 791	536 / 792	537 / 793	538 / 794	539 / 795	540 / 796	540
541	541 / 797	542 / 798	543 / 799	544 / 800	545 / 801	546 / 802	547 / 803	548 / 804	549 / 805	550 / 806	550
551	551 / 807	552 / 808	553 / 809	554 / 810	555 / 811	556 / 812	557 / 813	558 / 814	559 / 815	560 / 816	560
561	561 / 817	562 / 818	563 / 819	564 / 820	565 / 821	566 / 822	567 / 823	568 / 824	569 / 825	570 / 826	570
571	571 / 827	572 / 828	573 / 829	574 / 830	575 / 831	576 / 832	577 / 833	578 / 834	579 / 835	580 / 836	580
581	581 / 837	582 / 838	583 / 839	584 / 840	585 / 841	586 / 842	587 / 843	588 / 844	589 / 845	590 / 846	590
591	591 / 847	592 / 848	593 / 849	594 / 850	595 / 851	596 / 852	597 / 853	598 / 854	599 / 855	600 / 856	600
601	601 / 857	602 / 858	603 / 859	604 / 860	605 / 861	606 / 862	607 / 863	608 / 864	609 / 865	610 / 866	610
611	611 / 867	612 / 868	613 / 869	614 / 870	615 / 871	616 / 872	617 / 873	618 / 874	619 / 875	620 / 876	620
621	621 / 877	622 / 878	623 / 879	624 / 880	625 / 881	626 / 882	627 / 883	628 / 884	629 / 885	630 / 886	630
631	631 / 887	632 / 888	633 / 889	634 / 890	635 / 891	636 / 892	637 / 893	638 / 894	639 / 895	640 / 896	640
641	641 / 897	642 / 898	643 / 899	644 / 900	645 / 901	646 / 902	647 / 903	648 / 904	649 / 905	650 / 906	650
651	651 / 907	652 / 908	653 / 909	654 / 910	655 / 911	656 / 912	657 / 913	658 / 914	659 / 915	660 / 916	660
661	661 / 917	662 / 918	663 / 919	664 / 920	665 / 921	666 / 922	667 / 923	668 / 924	669 / 925	670 / 926	670
671	671 / 927	672 / 928	673 / 929	674 / 930	675 / 931	676 / 932	677 / 933	678 / 934	679 / 935	680 / 936	680
681	681 / 937	682 / 938	683 / 939	684 / 940	685 / 941	686 / 942	687 / 943	688 / 944	689 / 945	690 / 946	690
691	691 / 947	692 / 948	693 / 949	694 / 950	695 / 951	696 / 952	697 / 953	698 / 954	699 / 955	700 / 956	700
701	701 / 957	702 / 958	703 / 959	704 / 960	705 / 961	706 / 962	707 / 963	708 / 964	709 / 965	710 / 966	710
711	711 / 967	712 / 968	713 / 969	714 / 970	715 / 971	716 / 972	717 / 973	718 / 974	719 / 975	720 / 976	720
721	721 / 977	722 / 978	723 / 979	724 / 980	725 / 981	726 / 982	727 / 983	728 / 984	729 / 985	730 / 986	730
731	731 / 987	732 / 988	733 / 989	734 / 990	735 / 991	736 / 992	737 / 993	738 / 994	739 / 995	740 / 996	740
741	741 / 997	742 / 998	743 / 999	744 / 1000	745 / 1001	746 / 1002	747 / 1003	748 / 1004	749 / 1005	750 / 1006	750
751	751 / 1007	752 / 1008	753 / 1009	754 / 1010	755 / 1011	756 / 1012	757 / 1013	758 / 1014	759 / 1015	760 / 1016	760
	761 / 1017	762 / 1018	763 / 1019	764 / 1020	765 / 1021						



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