TRB-220

MaxLumina® Rotating Beacon

TRB-220 is a high intensity rotating beacon capable of providing simple and complex flash characters. This beacon can be configured to provide high efficiency in effective intensities using a wide range of low wattage marine signal lamps as well as LED light source. Tideland Signal's TRB-220 MaxLumina® is excellent in battery operations where a proper charge level can be maintained through photovoltaic charging from solar panels. A 6-lens carousel, light source, gearless direct drive motor and electronic control module are contained in a watertight aluminium and fiberglass housing (IP65) with acrylic glazing and stainless steel fasteners. Mounted on a light tower of proper height, TRB- 220 gives coastal shipping up to a 20NM range light (@ T = 0.74).

CHARACTERISTICS

- 6-lens carousel, consisting of a flash panel design with catadioptric prisms
- Operates with up to a 110W lamp without need for ventilation or cooling fans
- Brushless DC direct drive motor designed for smooth operation at low RPM
- Over 16 preprogrammed rotation periods, ranging from a period of 6 to 120 seconds
- 25 years of useful life
- Available in all IALA colours
- No scheduled maintenance for life of motor
- Accommodates Tideland's TF-3B MicroPower OMNIBUS® II 6-place lampchanger, MaxiHALO 60RB (LED)
- Automatic switchover to standby lantern
- Full monitor and control access

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Technical Details	
Power Consumption Lamp version LED version Motor	As specified (from 3 to 110W) up to 20 W Average 2.5W
Operating Temperature DC version AC version	9 – 36VDC 110 0 240VAC, 50/60Hz
Light Source	Tideland TF-3B OMNIBUS® II, high temperature, 3 or 6 place lampchanger, MaxiHALO60RB (LED)
Drive System	Brushless DC motor; gearless direct drive
Optics Acrylic Moulded Flash Panel Glazing	110mm focal length, Caradioptric Fresnel Lens 330mm UV-resistant acrylic
Lens Configuration Standard	220mm Hexagonal
Rotation Periods	16 rotation periods, field selectable Standard Periods 120, 90, 72, 60, 48, 30, 24, 20, 15, 12, 10, 9, 8, 7, and 6 seconds
Environmental Temperature Humidity	-40° C to +55° C 100% non-condensing
Physical Size Height Weight	915mm (36.0in) with spike 20kg (44lbs)
IP Rating	IP65

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Lamp Size	Hor. Div. (deg)	Fixed Int. (cd)	ROTATION PERIOD/SPEED							
			20 sec / 3.0 rpm	15 sec / 4.0 rpm	12 sec / 5.0 rpm	10 sec / 6.0 rpm	9 sec / 6.66 rpm	8 sec / 7.5 rpm	7 sec / 8.57 rpm	6 sec / 10.0 rpm
12V / 10W On-Time, Sec	1.60°	42,724	6416 0.089	5,000 0.067	4,096 0.053	3,469 0.044	3,150 0.040	2,821 0.036	2,489 0.031	2,151 0.027
12V / 20W On-Time, Sec	1.53°	109,561	17,571 0.085	13,729 0.064	11,265 0.051	9,551 0.043	8,680 0.038	7,777 0.034	6,867 0.030	5,938 0.026
12V / 35W On-Time, Sec	1.93°	169,903	35,635 0.107	28,205 0.080	23,339 0.064	19,905 0.054	18,143 0.048	16,306 0.043	14,443 0.038	12,530 0.032
12V / 50W On-Time, Sec	1.90°	241,131	48,615 0.106	38,397 0.079	31,728 0.063	27,033 0.053	24,627 0.048	22,122 0.042	19,584 0.037	16,981 0.032
12V / 75W On-Time, Sec	2.35°	238,643	51,707 0.131	41,000 0.098	33,968 0.078	28,994 0.065	26,439 0.059	23,773 0.052	21,067 0.046	18,285 0.039
12V / 100W On-Time, Sec	2.40°	367,823	86,445 0.133	68,881 0.100	57,249 0.080	48,978 0.067	44,714 0.060	40,254 0.053	35,716 0.047	31,040 0.040

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Lamp Size	Hor. Div. (deg)	Fixed Int. (cd)	ROTATION PERIOD/SPEED							
			120 sec / 0.5 rpm	90 sec / 0.66 rpm	72 sec / 0.83 rpm	60 sec / 1.0 rpm	48 sec / 1.25 rpm	40 sec / 1.5 rpm	30 sec / 2.0 rpm	24 sec / 2.5 rpm
12V / 10W On-Time, Sec	1.60°	42,724	21,987 .0533	18,936 0.7400	16,616 0.320	14,803 0.267	12,724 0.213	11,157 0.178	8,952 0.133	7,475 .0107
12V / 20W On-Time, Sec	1.53°	109,561	58,509 0.51	50,670 0.383	44,652 0.306	39,912 0.255	34,438 0.204	30,285 0.170	24,400 0.128	20,430 0.102
12V / 35W On Time, Sec	1.93°	169,903	104,346 0.643	92,516 0.483	83,033 0.386	75,313 0.322	66,111 0.257	58,914 0.214	48,.379 0.161	41,040 0.129
12V / 50W On-Time, Sec	1.90°	241,131	145,260 0.633	128,321 0.475	114,848 0.380	103,935 0.317	90,993 0.253	80,916 0.211	66,245 0.158	56,077 0.127
12V / 75W On-Time, Sec	2.35°	238,643	148,914 0.783	132,388 0.588	119,092 0.470	108,223 0.392	95,214 0.313	84,997 0.261	69,979 0.196	59,471 0.157
12V / 100W On-Time, Sec	2.40°	367,832	238,459 0.800	213,526 0.600	193,204 0.480	176,414 0.400	156,105 0.320	139,990 0.267	116,0.32 0.200	99,077 0.160

LED light source

Seconds per rotation, RPM	120	90	72	60	48	40	30	24	20	15	12	10	9	8	7	6
	0.50	0.67	0.83	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	6.67	7.50	8.57	10.00
TRB 220 Intensity @ 20W NM Range	6226	5761	5359	5011	4565	4192	3605	3160	2815	2309	1956	1698	1561	1415	1266	1110
	13.1	13	12.8	12.7	12.4	12.2	12	11.7	11.4	11	10.7	10.3	10.2	10.1	9.8	9.6
TRB 220 Intensity @ 10W NM Range	3113	2880	2680	2505	2283	2096	1802	1580	1407	1154	978	849	780	708	633	555
	11.7	11.5	11.3	11.2	11	10.8	10.6	10.2	10.1	9.6	9.2	9	8.7	8.7	8.4	8.2

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Effective Intensity Table for Selected Rotation Periods (All Calculations were made with the Schmidt-Clausen Method)
**NOTES:
1. All fixed intensities were measured with the outer glazing in place.
2. The Schmidt-Clausen Formula is used in compliance with IALA's "Recommendation for the Calculation of the Effective Intensity of a Rhythmic Light", November 1980.
3. Intensities may be reduced due to shadowing when using a 6-place lampchanger by approximately 20% at two small arcs 180° apart.

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