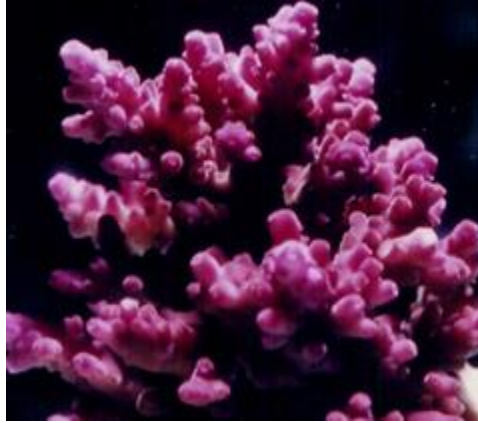


Light Intensity in Successful Reef Tanks

By Dana Riddle



This Acropora specimen is listed as the 'Purple Monster'

This short article will present PAR values measured in successful reef aquaria across the country. These data were collected in 1998 and 1999 using a Li-Cor quantum meter with a submersible probe calibrated for underwater measurements. All reports were from thriving reef aquaria, where growth and coloration were noted.

Data is listed by genus and, in some cases, presumed species follows. Next is Photosynthetic Photon Flux Density (PPFD, or PAR if you will) in units of microMol per square meter per second. In a few cases, colonies were large enough to take multiple measurements (such as the first Acropora in the list.) The light source is described if I recorded it in my notes.

This list also gives a glimpse into the availability and popularity of corals in the late 1990's.

Corals

Acropora (front) = 190; (side) =280; (back) = 480 – Metal Halide

Acropora, colored -85 to 415 - Natural sunlight

Acropora, tabletop – 220 - German 400w 20,000K, 175w 6000K, & 175w 10,000K Metal Halides (all unshielded for UV)

Acropora tabletop, purple tip - 206

Acropora -570

Acropora cerealis – 158 - 250w 10,000K & two 175w 6,500K metal halides

Acropora formosa – 290

Acropora formosa – 222 - Three 175w Iwasaki 6500K Metal Halides

Acropora formosa – 275

Acropora formosa – 235

Acropora formosa – 215

Acropora formosa, blue tip – 95 – Home Depot 5500K metal halide and two actinic fluorescent lamps

Acropora formosa, blue tip – 430 – Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Acropora formosa, blue tip – 145 – Two 39w daylight and two 39w actinic fluorescent lamps

Acropora formosa, blue tip – 175 Three 175w Iwasaki 6500K Metal Halides

Acropora formosa, blue tip – 100-235. Coralife 250w 10,000K, Hamilton 400w 14,000K on light rail.
Readings are minimum and maximum.

Acropora gemmifera

Acropora gemmifera, green – 565 – 633 – Iwasaki 6500K metal halides, shielded for UV

Acropora loripes – 120

Acropora millepora – 314 – 1x 400w, 2x 250w Iwasaki Metal halides, 2x 6 foot Actinic Fluorescent Lamps

Acropora nana, purple tip – 230 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Acropora nana – 160

Acropora nana, purple - – 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Acropora nana – 125 to 155 - Two 39w daylight and two 39w actinic fluorescent lamps

Acropora nana, brown – 175 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Acropora nana – 200 – Three 175-watt 10,000K metal halides

Acropora nana, purple tip – 190 - Home Depot 5500K metal halide and two actinic fluorescent lamps

Acropora nana, faint purple - 75

Acropora, green w/ orange tips - 423

Acropora sp. – 190

Acropora, blue tabletop – 450 - 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Acropora, blue tip – 260 - 2-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Acropora, blue tip – 285

Acropora, blue tip – 283

Acropora, blue tip – Two 400w 20,000K and one 10,000K metal halides

Acropora, blue tip – 590

Acropora, blue tip – 300 – Two 250w Iwasaki 6500K metal halides & 3 VHO URI Actinic fluorescent lamps

Acropora, blue tip – 405 - – Three 175-watt 10,000K metal halides

Acropora, blue tip – 239 - 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Acropora, Purple Monster -300(not purple, but green – exposed to UV from unshielded MH lamp) 2-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Acropora, Purple Monster - 300

Acropora, Purple Monster – not purple, but brown – 300-355

Acropora, Purple Monster – 350 – German 400w 20,000K, 175w 6000K, & 175w 10,000K Metal Halides (all unshielded for UV)

Acropora, Purple Monster – 550-600 – Iwasaki 6500K metal halides, shielded for UV

Acropora, green w/ blue tips – 400-575 – Iwasaki 6500K metal halides, shielded for UV

Acropora, brown w/ blue tips – 640-675 - – Iwasaki 6500K metal halides, shielded for UV

Acropora, green w/ purple tips – 493-520 – Iwasaki 6500K metal halides, shielded for UV

Acropora, green – 210 – 235

Acropora, green – 330

Acropora, green – 315 - – 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Acropora, orange – 430 - German 400w 20,000K, 175w 6000K, & 175w 10,000K Metal Halides (all unshielded for UV)

Acropora, purple – 270 – 4x Power Compact Fluorescent Lamps

Acropora, purple – 160 - – 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Acropora, purple – 215 - – 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Acropora, purple tip – 330

Acropora, purple – 240 – Two 400w Iwasaki 6500K metal halides.

Acropora, purple tip, encrusting – 375 - Home Depot 5500K metal halide and two actinic fluorescent lamps

Acropora, purple tip, branching – 250 - Home Depot 5500K metal halide and two actinic fluorescent lamps

Acropora, purple tip – 341 – Iwasaki 400w 6,500K metal halides

Acropora, red -365-420 -- Iwasaki 6500K metal halides, shielded for UV

Acropora, purple – 145 – Eight 9w Compact Fluorescents – 4 white and 4 blue.

Acropora, red -360 - Three 175w Iwasaki 6500K Metal Halides

Acropora, red – 218 - Three 175w Iwasaki 6500K Metal Halides

Acropora, red -290

Acropora, red - 200

Acropora gemmifera, green – 565 – 633 – Iwasaki 6500K metal halides, shielded for UV

Acropora, reddish-brown w/ yellow tips -240 -306

Acropora, purple tip – 180

Actinodiscus – 38 – Metal Halide

Catalaphyllia - 93

Caulastrea – 320

Caulastrea – 30 – 3 X 250w Iwasaki 6500K metal halides

Caulastrea – 95 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Cladiella – 180 - 220

Clavularia (GSP) – 132 - 2-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Clavularia (GSP) - 100

Cynarina – 175 - 2-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Euphyllia, frogspawn – 210 – Three 175-watt 10,000K metal halides

Favia – 325 – 3 X 250w Iwasaki 6500K metal halides

Favia #1 – 600 – 2-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Favia #2 -6002-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Goniopora, red – 150 -- Three 175-watt 10,000K metal halides

Goniopora – 115 - Two 400w Iwasaki 6500K metal halides.

Hydnophora – 380

Hydnophora (under brace) – 60

Hydnophora, branching – 194 - Coralife 250w 10,000K, Hamilton 400w 14,000K on light rail. Reading is maximum.

Montipora – 150 -- 4x Power Compact Fluorescent Lamps

Montipora – 320 2-400w Radium (?) 10,000K, 1-AB 250w 10,000K, 2-160w URI VHO Super Actinics

Montipora capricornis – 150 -- Three 175-watt 10,000K metal halides

Montipora digitata – 148 - 250w 10,000K & two 175w 6,500K metal halides

Montipora digitata, purple – 265 - 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Montipora digitata, purple – 240 - 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Montipora digitata, green – 240 - 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Montipora, large, brown -570

Montipora brown – 160

Montipora – 400 – 430

Montipora, pink tip – 360

Montipora, purple – 240 -Two 400w Iwasaki 6500K metal halides.

Montipora, purple – 240 -Two 400w Iwasaki 6500K metal halides.

Montipora, red -530

Montipora, orange -700

Montipora, orange – 200 -223 – Iwasaki 6500K metal halides, shielded for UV

Montipora, orange - Two 400w Iwasaki 6500K metal halides.

Montipora, orange, plating – 166 - Two 400w 20,000K and one 10,000K metal halides

Montipora, green -550

Montipora, green, plating – 120 - Two 400w 20,000K and one 10,000K metal halides

Montipora, green – 350 – 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Montipora, blue tip – 200 – Venture 400w metal halide

Nemanzophyllia – 33 - Eight 9w Compact Fluorescents – 4 white and 4 blue.

Nephthya – 400 – Metal Halide

Pachyseris – 87 to 225 - Coralife 250w 10,000K, Hamilton 400w 14,000K on light rail. Readings are minimum and maximum.

Parazoanthus – 60

Plerogyra (bubble coral) – 175 – Six 160w VHO fluorescent lamps, Two actinics & 4 daylights

Plerogyra (bubble coral) – 160 – 180 – One 175w 10,000K MH, Two 150w 6500K Iwasaki MH, Two 40w actinic fluorescent lamps

Plerogyra (bubble coral) – 75 – Three 175w Iwasaki 6500K Metal Halides

Pocillopora planula settlement – 77 – Metal Halide

Pocillopora planula settlement -50

Pocillopora planula settlement – 150

Pocillopora planula settlement - 308

Pocillopora planula settlement – 105

Pocillopora planula settlement – 120 – Metal Halide

Pocillopora planula settlement – 308 - One 175w 10,000K MH, Two 150w 6500K Iwasaki MH, Two 40w actinic fluorescent lamps

Pocillopora planula settlement – 150 - One 175w 10,000K MH, Two 150w 6500K Iwasaki MH, Two 40w actinic fluorescent lamps

Pocillopora – 40 to 205 - Coralife 250w 10,000K, Hamilton 400w 14,000K on light rail. Readings are minimum and maximum.

Pocillopora – 165 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Pocillopora - 250

Pocillopora -50 – Natural sunlight

Pocillopora, shaded - 100

Pocillopora. pink – 540 -560 - – Iwasaki 6500K metal halides, shielded for UV

Pocillopora – 145

Pocillopora, brown – 500 - Two 400w Iwasaki 6500K metal halides.

Pocillopora, pink – 230

Pocillopora, hot pink – 400 – Iwasaki 400w 6500 metal halides

Pocillopora, green – 420 - German 400w 20,000K, 175w 6000K, & 175w 10,000K Metal Halides (all unshielded for UV)

Pocillopora damicornis, pink – 150

Pocillopora damicornis, reddish-brown - Home Depot 5500K metal halide and two actinic fluorescent lamps

Pocillopora damicornis – 104 - Two 39w daylight and two 39w actinic fluorescent lamps

Pocillopora meandrina – 90 – 100

Pocillopora verrucosa, pink – 100 - – Venture 400w metal halide

Porites – 102 - 250w 10,000K & two 175w 6,500K metal halides

Porites – 600 - German 400w 20,000K, 175w 6000K, & 175w 10,000K Metal Halides (all unshielded for UV)

Porites , yellow – 105

Porites, green - 140

Porites, green – 130 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Porites porites, planula settlement -50 – Settled in overflow

Rhodactis, green – 60

Rhodactis, green - 72

Rhodactis, green - 75

Ricordia - 110

Sarcophyton, yellow – 225 – 4x Power Compact Fluorescent Lamps

Sarcophyton, yellow Tonga – 145 - Two 39w daylight and two 39w actinic fluorescent lamps

Sarcophyton - 93

Seriatopora – 280 – 3 X 250w Iwasaki 6500K metal halides

Seriatopora – 132

Seriatopora – 308 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Seriatopora hystrix – 225 - 2x 175w 10,000K & 1-175w 20,000K plus 2-110w VHO Actinic Fluorescent Lamps

Seriatopora, brown – 100 - – Three 175-watt 10,000K metal halides

Sinularia dura – 120 - 250w 10,000K & two 175w 6,500K metal halides

Sinularia - 365

Stylophora, red – 770

Stylophora, red – 313

Stylophora, pink – 135

Stylophora, green halo polyps – 122 - Home Depot 5500K metal halide and two actinic fluorescent lamps

Turbinaria – 130 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Xenia -50 - Natural sunlight

Xenia, slight pulsing – 11

Xenia, strong pulsing - 87

Xenia, dark – 75

Xenia - 60

Xenia – 250

Xenia – 150

Xenia – 315

Xenia - 260

Xenia – 100 – Venture 400w metal halide

Xenia – 200 – Venture 400w metal halide

Xenia – 304

Xenia – 400 – 10 Compact fluorescent lamps – 6 Philips 13w, 2 Philips 20w actinics, 2 Coralife 20w 50/50.

Xenia , blue – 150 – Two 28w Custom Sealife Power Compacts fluorescent lamps. 1 -7,100K; 1 – 6700K

Tridacna & Hippopus Clams

Hippopus hippopus – 400 - Two 400w Iwasaki 6500K metal halides.

Tridacna gigas – 130

Tridacna gigas – 120 - Two 400w Iwasaki 6500K metal halides.

Tridacna gigas (10 years old) – 286 – 4- 175w Coralife 6500K metal halides & two 110w URI Actinic-White VHO fluorescent lamps

Tridacna maxima – 230

Tridacna maxima – 250 - Two 400w Iwasaki 6500K metal halides.

Tridacna maxima – 360 - Two 400w Iwasaki 6500K metal halides.

Tridacna maxima – 160 – 4x Power Compact Fluorescent Lamps

Coralline Algae

Hydrolithon – 15

Jania – 200 – Venture 400w metal halide

Jania, pink - 140

Mesophyllium - 25

Mesophyllium – 30

Mesophyllium – 54

Mesophyllum, plating – 4 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Porolithon – 135

Porolithon – 170, but increased growths noted in shaded areas (~40)

Porolithon – 202

Porolithon – 335

Porolithon – 575 - Two 175-watt 10,000K metal halides & 2 VHO fluorescents (1 50/50; 1 actinic)

Sporolithon - 150

Sporolithon -47

Titanoderma – 20

Titanoderma – 51

Titanoderma - 54

No Titanoderma growths noted at 10